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

COMANCHE PEAK POWER COMPANY LLC

AND VISTRA OPERATIONS COMPANY LLC

DOCKET NO. 50-445

COMANCHE PEAK NUCLEAR POWER PLANT, UNIT NO. 1

FACILITY OPERATING LICENSE

License No. NPF-87

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

   A. The application for a license filed by Vistra Operations Company LLC ("Vistra OpCo"), acting on its own behalf and for Comanche Peak Power Company LLC ("CP PowerCo"), hereinafter individually (licensee) as appropriate, or together (licensees), complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;

   B. Construction of the Comanche Peak Nuclear Power Plant, Unit No. 1 (the facility), has been substantially completed in conformity with Construction Permit No. CPPR-126 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. Vistra OpCo 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. CP PowerCo has satisfied the applicable provisions of 10 CFR 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-87 subject to the conditions for protection of the environment set forth herein, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied; and

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, except that an exemption to the provisions of 70.24 is granted as described in paragraph 2.D below.

2. Based on the foregoing findings regarding this facility, Facility Operating License No. NPF-87 is hereby issued to the licensee, to read as follows:

A. This license applies to the Comanche Peak Nuclear Power Plant, Unit No. 1, a pressurized-water nuclear reactor and associated equipment (the facility), owned by the licensee. The facility is located on Squaw Creek Reservoir in Somervell County, Texas about 5 miles north-northwest of Glen Rose, Texas, and about 40 miles southwest of Fort Worth in north-central Texas and is described in the licensee's Final Safety Analysis Report, as supplemented and amended, and the licensee's Environmental Report, as supplemented and amended.

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

(1) Pursuant to Section 103 of the Act and 10 CFR Part 50, "Domestic Licensing and Production and Utilization Facilities," Vistra OpCo to possess, use, and operate the facility at the designated location in Somervell County, Texas in accordance with the procedures and limitations set forth in this license;

(2) CP PowerCo, pursuant to 10 CFR Part 50, to possess the facility at the designated location in Somervell County, Texas in accordance with the procedures and limitations set forth in this license;

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

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

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

(6) Vistra OpCo, 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.

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) <u>Maximum Power Level</u>

Vistra OpCo is authorized to operate the facility at reactor core power levels not in excess of 3458 megawatts thermal through Cycle 13 and 3612 megawatts thermal starting with Cycle 14 in accordance with the conditions specified herein.

(2) <u>Technical Specifications and Environmental Protection Plan</u>

The Technical Specifications contained in Appendix A as revised through Amendment No. 185 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. Vistra OpCo shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Antitrust Conditions

DELETED

(4) License Transfer

The CP PowerCo Decommissioning Master Trust Agreement for the facility at the time the license transfers are effected and thereafter, is subject to the following:

(a) DELETED

(b) DELETED

(c) The appropriate section of the decommissioning trust agreement must state that investments made in trust by the trustee, investment advisor, or anyone else directing the investments made in the trusts shall adhere to investment guidelines established by the PUCT (e.g., 16 Texas Administration Code 25.301);

(d) DELETED

(e) DELETED

(5) License Transfer

CP PowerCo shall provide decommissioning funding assurance, to be held in a decommissioning trust for the facility upon the direct transfer of the facility license to CP PowerCo, in an amount equal to or greater than the balance in the facility decommissioning trusts immediately prior to the transfer. In addition, CP PowerCo shall ensure that all contractual arrangements referred to in the application for approval of the transfer of the facility license to CP PowerCo, to obtain necessary decommissioning funds for the facility through a non-bypassable charge are executed and will be maintained until the decommissioning trusts are fully funded, or shall ensure that other mechanisms that provide equivalent assurance of decommissioning funding in accordance with the Commission's regulations are maintained.

(6) License Transfer

DELETED

(7) License Transfer

CP PowerCo agrees to provide the Director, Office of Nuclear Reactor Regulation, a copy of any application, at the time it is filed, to transfer (excluding grants of security interests or liens) from CP PowerCo to its proposed parent, or to any other affiliated company, facilities for the production of electric energy having a depreciated book value exceeding ten percent (10%) of such licensee's consolidated net utility plant, as recorded on CP PowerCo's book of accounts.

(8) Mitigation Strategy License Condition

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

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

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

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

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

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

1. Water spray scrubbing
2. Dose to onsite responders

(9) License Transfer

Vistra OpCo, the parent company of CP PowerCo, shall enter into the $300 million support agreement as described in the November 12, 2015 application for license transfer, with CP PowerCo, no later than the time the proposed license transfer occurs. CP PowerCo shall take no action to cause Vistra OpCo, or its successors and assigns, to void, cancel, or modify the support agreement or cause it to fail to perform, or impair its performance under the support agreement, without the prior written consent of the NRC. The support agreement may not be amended or modified without 30 days prior written notice to the Director of the Office of Nuclear Reactor Regulation or his designee. An executed copy of the support agreement shall be submitted to the NRC no later than 30 days after the completion of the proposed transactions and the license transfers. CP PowerCo shall inform the NRC in writing anytime it draws upon the support agreement.

Following the subject transfer of control of the licenses, all of the directors of CP PowerCo and Vistra OpCo who can vote on activities governed by the CPNPP license and all of the officers of CP PowerCo and Vistra OpCo with direct responsibility for activities governed by the CPNPP license shall (1) be U.S. citizens and not appointed by a foreign entity and (2) have exclusive authority to ensure and shall ensure that the business and activities of Vistra OpCo and CP PowerCo with respect to the CPNPP license is at all times conducted in a manner consistent with the public health and safety and common defense and security of the United States. This condition may be amended upon application by either licensee and approval by the Director of the Office of Nuclear Reactor Regulation.

D. The following exemptions are authorized by law and will not endanger life or property or the common defense and security. Certain special circumstances are present and these exemptions are otherwise in the public interest. Therefore, these exemptions are hereby granted pursuant to 10 CFR 50.12.

(1) The facility requires a technical exemption from the requirements of 10 CFR Part 50, Appendix J, Section III.D.2(b)(ii). The justification for this exemption is contained in Section 6.2.5 of Supplement 22 to the Safety Evaluation Report dated January 1990. The staff's environmental assessment was published on November 14, 1989 (54 FR 47430).

Therefore, pursuant to 10 CFR 50.12(a)(1), and 10 CFR 50.12(a)(2)(ii) and (iii), the Comanche Peak Nuclear Power Plant, Unit 1 is hereby granted an exemption from the cited requirement and instead, is required to perform the overall air lock leak test at pressure P_a prior to establishing containment integrity if air lock maintenance has been performed that could affect the air lock sealing capability.

(2) The facility was previously granted an exemption from the criticality monitoring requirements of 10 CFR 70.24 (see Materials License No. SNM-1912 dated December 1, 1988 and Section 9.1.1 of Supplement 22 to the Safety Evaluation Report dated January 1990). The staff's environmental assessment was published on November 14, 1989 (54 FR 47432). The Comanche Peak Nuclear Power Plant, Unit 1 is hereby exempted from the criticality monitoring provisions of 10 CFR 70.24 as applied to fuel assemblies held under this license.

(3) The facility requires a temporary exemption from the scheduler requirements of 10 CFR 50.33(k) and 10 CFR 50.75. The justification for this exemption is contained in Section 20.6 of Supplement 22 to the Safety Evaluation Report dated January 1990. The staff's environmental assessment was published on November 14, 1989 (54 FR 47431). Therefore, pursuant to 10 CFR 50.12(a)(1), 50.12(a)(2)(iii) and 50.12(a)(2)(v), the Comanche Peak Nuclear Power Plant, Unit 1 is hereby granted a temporary exemption from the scheduler requirements of 10 CFR 50.33(k) and 10 CFR 50.75 and is required to submit a decommissioning funding report for Comanche Peak Nuclear Power Plant, Unit 1 on or before July 26, 1990.

E. DELETED

F. In order to ensure that CP PowerCo will exercise the authority as the surface landowner in a timely manner and that the requirements of 10 CFR Part 100.3 (a) are satisfied, this license is subject to the additional conditions specified below: (Section 2.1.1, SER)

(1) For that portion of the exclusion area which is within 2250 ft of any seismic Category I building or within 2800 ft of either reactor containment building, CP PowerCo must prohibit the exploration and/or exercise of subsurface mineral rights, and if the subsurface mineral rights owners attempt to exercise their rights within this area, CP PowerCo must immediately institute immediately effective condemnation proceedings to obtain the mineral rights in this area.

(2) For the unowned subsurface mineral rights within the exclusion area not covered in item (1), CP PowerCo will prohibit the exploration and/or exercise of mineral rights until and unless CP PowerCo and the owners of the mineral rights enter into an agreement which gives CP PowerCo absolute authority to determine all activities – including times of arrival and locations of personnel and the authority to remove personnel and equipment – in event of emergency. If the mineral rights owners attempt to exercise their rights within this area without first entering into such an agreement, CP PowerCo must institute immediately effective condemnation proceedings to obtain the mineral rights in this area.

(3) CP PowerCo shall promptly notify the NRC of any attempts by subsurface mineral rights owners to exercise mineral rights, including any legal proceeding initiated by mineral rights owners against CP PowerCo.

G. Vistra OpCo shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report through Amendment 78 and as approved in the SER (NUREG-0797) and its supplements through SSER 24, subject to the following provision:

Vistra OpCo 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.

H. Vistra OpCo shall fully implement and maintain in effect all provisions of the physical security, guard training and qualification, and safeguards contingency plans, previously approved by the Commission, and all amendments made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain safeguards information protected under 10 CFR 73.21, are entitled: "Comanche Peak Steam Electric Station Physical Security Plan" with revisions submitted through May 15, 2006, with limited approvals as provided for in the Safety Evaluation by the Office of Nuclear Reactor Regulation dated December 5, 2000; "Comanche Peak Steam Electric Station Security Training and Qualification Plan" with revisions submitted through May 15, 2006; and "Comanche Peak Steam Electric Station Safeguards Contingency Plan" with revisions submitted through May 15, 2006. Vistra OpCo 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). Vistra OpCo's CSP was approved by License Amendment No. 155, as supplemented by a change approved by License Amendment 163.

I. CP PowerCo 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.

J. NOT USED

K. This license is effective as of the date of issuance and shall expire at Midnight on February 8, 2030.

FOR THE NUCLEAR REGULATORY COMMISSION

original signed by:

Thomas E. Murley, Director
Office of Nuclear Reactor Regulation

Attachments/Appendices:
1. Appendix A – Technical Specifications (NUREG-1399)
2. Appendix B – Environmental Protection Plan
3. Appendix C – Deleted
4. Appendix D – Additional Conditions

Date of Issuance: April 17, 1990

TECHNICAL SPECIFICATIONS

FOR

COMANCHE PEAK NUCLEAR POWER PLANT

UNITS 1 AND 2

1.0 USE AND APPLICATION

1.1 Definitions

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

Term	Definition
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
ACTUATION LOGIC TEST	An ACTUATION LOGIC TEST shall be the application of various simulated or actual input combinations in conjunction with each possible interlock logic state required for OPERABILITY of a logic circuit and the verification of the required logic output. The ACTUATION LOGIC TEST, as a minimum, shall include a continuity check of output devices.
AXIAL FLUX DIFFERENCE (AFD)	AFD shall be the difference in normalized flux signals between the top and bottom halves of an excore neutron detector.
CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.
CHANNEL CHECK	A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.

1.1 Definitions (continued)

CHANNEL OPERATIONAL TEST (COT)	A COT shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY. The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints required for channel OPERABILITY so that the setpoints are within the necessary range and accuracy. The COT may be performed by means of any series of sequential, overlapping or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.
CORE 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. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific parameter limits shall be determined for each reload cycle in accordance with Specification 5.6.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries per gram) that alone would produce the same dose when inhaled as the combined activities of iodine isotopes I-131, I-132, I-133, I-134, and I-135 actually present. The determination of DOSE EQUIVALENT I-131 shall be performed using thyroid dose conversion factors from Table III of TID-14844, AEC, 1962, "Calculation of Distance Factors for Power and Test Reactor Sites," or from Table E-7 of Regulatory Guide 1.109, Revision 1, NRC, 1977, or from ICRP-30, 1979, Supplement to Part 1, page 192-212, Table titled “Committed Dose Equivalent in Target Organs or Tissues per Intake of Unit Activity,” or from Table 2.1 of EPA Federal Guidance Report No. 11, 1988, “Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion.”

1.1 Definitions (continued)

DOSE EQUIVALENT XE-133	DOSE EQUIVALENT XE-133 shall be that concentration of Xe-133 (microcuries per gram) that alone would produce the same acute dose to the whole body as the combined activities of noble gas nuclides Kr-85m, Kr-87, Kr-88, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138 actually present. If a specific noble gas nuclide is not detected, it should be assumed to be present at the minimum detectable activity. The determination of DOSE EQUIVALENT XE-133 shall be performed using effective dose conversion factors for air submersion listed in Table III.1 of EPA Federal Guidance Report No. 12, 1993, "External Exposure to Radionuclides in Air, Water, and Soil", or using the dose conversion factors from Table B-1 of Regulatory Guide 1.109, Revision 1, NRC, 1977.
ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME	The ESF RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF 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, or the components have been evaluated in accordance with an NRC approved methodology.
INSERVICE TESTING PROGRAM	The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).

1.1 Definitions (continued)

LEAKAGE	LEAKAGE shall be:

a. Identified LEAKAGE

1. LEAKAGE, such as that from pump seals or valve packing (except reactor coolant pump (RCP) seal water injection or leakoff), that is captured and conducted to collection systems or a sump or collecting tank;

2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE; or

3. Reactor Coolant System (RCS) LEAKAGE through a steam generator to the Secondary System (primary to secondary LEAKAGE);

b. Unidentified LEAKAGE

All LEAKAGE (except RCP seal water injection or leakoff) that is not identified LEAKAGE;

c. Pressure Boundary LEAKAGE

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

MASTER RELAY TEST

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

MODE

A MODE shall correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.

1.1 Definitions (continued)

OPERABLE - OPERABILITY	A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).
PHYSICS TESTS	PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are: a. Described in Chapter 14, of the FSAR; b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)	The PTLR is the unit specific document that provides the reactor vessel pressure and temperature limits, including heatup and cooldown rates, the power operated relief valve (PORV) lift settings and the LTOP arming temperature associated with the Low Temperature Overpressurization Protection (LTOP) System, for the current reactor vessel fluence period. These pressure and temperature limits shall be determined for each fluence period in accordance with Specification 5.6.6.
QUADRANT POWER TILT RATIO (QPTR)	QPTR shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 3458 MWt through Cycle 13 for Unit 1 and through Cycle 11 for Unit 2. Starting with Cycles 14 and 12 of Units 1 and 2, respectively, RTP shall be 3612 MWt.

1.1 Definitions (continued)

REACTOR TRIP SYSTEM (RTS) RESPONSE TIME	The RTS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RTS trip setpoint at the channel sensor until loss of stationary gripper coil voltage. 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, or the components have been evaluated in accordance with an NRC approved methodology.
SHUTDOWN MARGIN (SDM)	SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming: a. All rod cluster control assemblies (RCCAs) are fully inserted except for the single RCCA of highest reactivity worth, which is assumed to be fully withdrawn. With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM; and b. In MODES 1 and 2, the fuel and moderator temperatures are changed to the hot zero power temperatures.
SLAVE RELAY TEST	A SLAVE RELAY TEST shall consist of energizing all slave relays in the channel required for channel OPERABILITY and verifying the OPERABILITY of each required slave relay. The SLAVE RELAY TEST shall include a continuity check of associated testable actuation devices. The SLAVE RELAY TEST may be performed by means of any series of sequential, overlapping or total steps.
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.

1.1 Definitions (continued)

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

Table 1.1-1 (page 1 of 1)
MODES

MODE	TITLE	REACTIVITY CONDITION (k_{eff})	% RATED THERMAL POWER[a]	AVERAGE REACTOR COOLANT TEMPERATURE (°F)
1	Power Operation	≥ 0.99	> 5	NA
2	Startup	≥ 0.99	≤ 5	NA
3	Hot Standby	< 0.99	NA	≥ 350
4	Hot Shutdown[b]	< 0.99	NA	$350 > T_{avg} > 200$
5	Cold Shutdown[b]	< 0.99	NA	≤ 200
6	Refueling[c]	NA	NA	NA

(a) Excluding decay heat.
(b) All reactor vessel head closure bolts fully tensioned.
(c) One or more reactor vessel head closure bolts less than fully tensioned.

1.0 USE AND APPLICATION

1.2 Logical Connectors

PURPOSE

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

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

BACKGROUND

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

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

EXAMPLES

The following examples illustrate the use of logical connectors.

EXAMPLE 1.2-1

ACTIONS

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

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

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-2

ACTIONS

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

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

1.0 USE AND APPLICATION

1.3 Completion Times

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

DESCRIPTION

The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the LCO. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the unit is not within the LCO Applicability.

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

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

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

a. Must exist concurrent with the first inoperability; and

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

1.3 Completion Times

DESCRIPTION (continued)

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

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

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

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

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

EXAMPLES

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

<u>EXAMPLE 1.3-1</u>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
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

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.

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-1 (continued)

The Required Actions of Condition B are to be in MODE 3 within 6 hours AND in MODE 5 within 36 hours. A total of 6 hours is allowed for reaching MODE 3 and a total of 36 hours (not 42 hours) is allowed for reaching MODE 5 from the time that Condition B was entered. If MODE 3 is reached within 3 hours, the time allowed for reaching MODE 5 is the next 33 hours because the total time allowed for reaching MODE 5 is 36 hours.

If Condition B is entered while in MODE 3, the time allowed for reaching MODE 5 is the next 36 hours.

EXAMPLE 1.3-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One pump inoperable.	A.1 Restore pump to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

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

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

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

1.3 Completion Times

EXAMPLES

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.

EXAMPLE 1.3-3

ACTIONS

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

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-3 (continued)

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

If Required Action C.2 is completed within the specified Completion Time, Conditions B and C are exited. If the Completion Time for Required Action A.1 has not expired, operation may continue in accordance with Condition A. The remaining Completion Time in Condition A is measured from the time the affected train was declared inoperable (i.e., initial entry into Condition A).

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.

EXAMPLE 1.3-4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve(s) to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-4 (continued)

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

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

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

EXAMPLE 1.3-5

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

The Note above the ACTIONS Table is a method of modifying how the Completion Time is tracked. If this method of modifying how the Completion Time is tracked was applicable only to a specific Condition, the Note would appear in that Condition rather than at the top of the ACTIONS Table.

The Note allows Condition A to be entered separately for each inoperable valve, and Completion Times tracked on a per valve basis. When a valve is

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-5 (continued)

declared inoperable, Condition A is entered and its Completion Time starts. If subsequent valves are declared inoperable, Condition A is entered for each valve and separate Completion Times start and are tracked for each valve.

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

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

EXAMPLE 1.3-6

ACTIONS

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

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

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-6 (continued)

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

EXAMPLE 1.3-7

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Verify affected subsystem isolated.	1 hour AND Once per 8 hours thereafter
	AND	
	A.2 Restore subsystem to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 5.	36 hours

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

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

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-8

ACTIONS

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

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

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

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

1.3 Completion Times

EXAMPLES	EXAMPLE 1.3-8 (continued) If the RICT expires or is recalculated to be less than the elapsed time since the Condition was entered and the inoperable subsystem has not been restored to OPERABLE status, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start. If the inoperable subsystems are restored to OPERABLE status after Condition B is entered, Conditions A is exited, and therefore, the Required Actions of Condition B may be terminated.
IMMEDIATE COMPLETION TIME	When "Immediately" is used as a Completion Time, the Required Action should be pursued without delay and in a controlled manner

1.0 USE AND APPLICATION

1.4 Frequency

PURPOSE

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

DESCRIPTION

Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated LCO. An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.

The "specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0, Surveillance Requirement (SR) Applicability. The "specified Frequency" consists of the requirements of the Frequency column of each SR as well as certain Notes in the Surveillance column that modify performance requirements.

Situations where a Surveillance could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after the associated LCO is within its Applicability, represent potential SR 3.0.4 conflicts. To avoid these conflicts, the SR (i.e., the Surveillance or the Frequency) is stated such that it is only "required" when it can be and should be performed. With an SR satisfied, SR 3.0.4 imposes no restriction.

EXAMPLES

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

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the stated Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is

1.4 Frequency

EXAMPLES

EXAMPLE 1.4-1 (continued)

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 Example 1.4-3), then SR 3.0.3 becomes applicable.

If the interval as specified by SR 3.0.2 is exceeded while the 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 1.4-2

SURVEILLANCE REQUIREMENTS

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

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

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

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
------------------------------NOTE------------------------------ Not required to be performed until 12 hours after $\geq$ 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 performed within the "specified Frequency." Therefore, if the Surveillance were not performed within the 7 day (plus the extension allowed by SR 3.0.2) interval, but operation was < 25% RTP, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not exceed 12 hours with power $\geq$ 25% RTP.

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

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 In MODES 1 and 2, the departure from nucleate boiling ratio (DNBR) shall be maintained ≥ the 95/95 DNB criterion for the DNB correlation(s) specified in Section 5.6.5.

2.1.1.2 In MODES 1 and 2, the peak fuel centerline temperature shall be maintained less than 5080°F, decreasing by 9°F per 10,000 MWD/MTU of burnup.

2.1.2 RCS Pressure SL

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

2.2 SL Violations

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

2.2.2 If SL 2.1.2 is violated:

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

2.2.2.2 In MODE 3, 4, or 5, restore compliance within 5 minutes.

3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

LCO 3.0.1 LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2 and LCO 3.0.7.

LCO 3.0.2 Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.

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

LCO 3.0.3 When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action shall be initiated within 1 hour to place the unit, as applicable, in:

a. MODE 3 within 7 hours;

b. MODE 4 within 13 hours; and

c. MODE 5 within 37 hours.

Exceptions to this Specification are stated in the individual Specifications.

Where corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4.

LCO 3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;

3.0 LCO APPLICABILITY

LCO 3.0.4 (continued)

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

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

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

LCO 3.0.5 Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

LCO 3.0.6 When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, an evaluation shall be performed in accordance with Specification 5.5.15, "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.

3.0 LCO APPLICABILITY (continued)

LCO 3.0.7	Test Exception LCO 3.1.8, allows specified Technical Specification (TS) requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. Compliance with Test Exception LCOs is optional. When a Test Exception LCO is desired to be met but is not met, the ACTIONS of the Test Exception LCO shall be met. When a Test Exception LCO is not desired to be met, entry into a MODE or other specified condition in the Applicability shall be made in accordance with the other applicable Specifications.

3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

SR 3.0.1

SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

SR 3.0.2

The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met.

For Frequencies specified as "once," the above interval extension does not apply.

If a Completion Time requires periodic performance on a "once per . . ." basis, the above Frequency extension applies to each performance after the initial performance.

Exceptions to this Specification are stated in the individual Specifications.

SR 3.0.3

If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is greater. This delay period is permitted to allow performance of the Surveillance.

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. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

3.0 SR APPLICABILITY (continued)

SR 3.0.4

Entry into a MODE or other specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3. When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with LCO 3.0.4.

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

3.1 REACTIVITY CONTROL SYSTEMS

3.1.1 SHUTDOWN MARGIN (SDM)

LCO 3.1.1 SDM shall be within the limits provided in the COLR.

APPLICABILITY: MODE 2 with $k_{eff} < 1.0$,
MODES 3, 4, and 5

---NOTE---
While this LCO is not met, entry into MODE 5 from MODE 6 is not permitted.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.1.1	Verify SDM to be within limits.	In accordance with the Surveillance Frequency Control Program.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 Core Reactivity

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

APPLICABILITY: MODES 1 and 2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Measured core reactivity not within limit.	A.1 Re-evaluate core design and safety analysis, and determine that the reactor core is acceptable for continued operation. AND A.2 Establish appropriate operating restrictions and SRs.	7 days 7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.1.2.1	---NOTE--- The predicted reactivity values may be adjusted (normalized) to correspond to the measured core reactivity prior to exceeding a fuel burnup of 60 effective full power days (EFPD) after each fuel loading. --- Verify measured core reactivity is within ± 1% Δk/k of predicted values.	Once prior to entering MODE 1 after each refueling AND ---NOTE--- Only required after 60 EFPD --- In accordance with the Surveillance Frequency Control Program.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Moderator Temperature Coefficient (MTC)

LCO 3.1.3 The MTC shall be maintained within the limits specified in the COLR. The maximum upper limit shall be that specified in Figure 3.1.3-1.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. MTC not within upper limit.	A.1 Establish administrative withdrawal limits for control banks to maintain MTC within limit.	24 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 2 with $k_{eff} < 1.0$.	6 hours
C. MTC not within lower limit.	C.1 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.3.1	Verify MTC is within upper limit.	Once prior to entering MODE 1 after each refueling
SR 3.1.3.2	-------------------NOTES------------------- 1. Not required to be performed until 7 effective full power days (EFPD) after reaching the equivalent of an equilibrium RTP all rods out (ARO) boron concentration of 300 ppm. 2. If the MTC is more negative than the 300 ppm Surveillance limit (not LCO limit) specified in the COLR, SR 3.1.3.2 shall be repeated once per 14 EFPD during the remainder of the fuel cycle. 3. SR 3.1.3.2 need not be repeated if the MTC measured at the equivalent of equilibrium RTP-ARO boron concentration of ≤ 60 ppm is less negative than the 60 ppm Surveillance limit specified in the COLR. --- Verify MTC is within lower limit.	Once each cycle

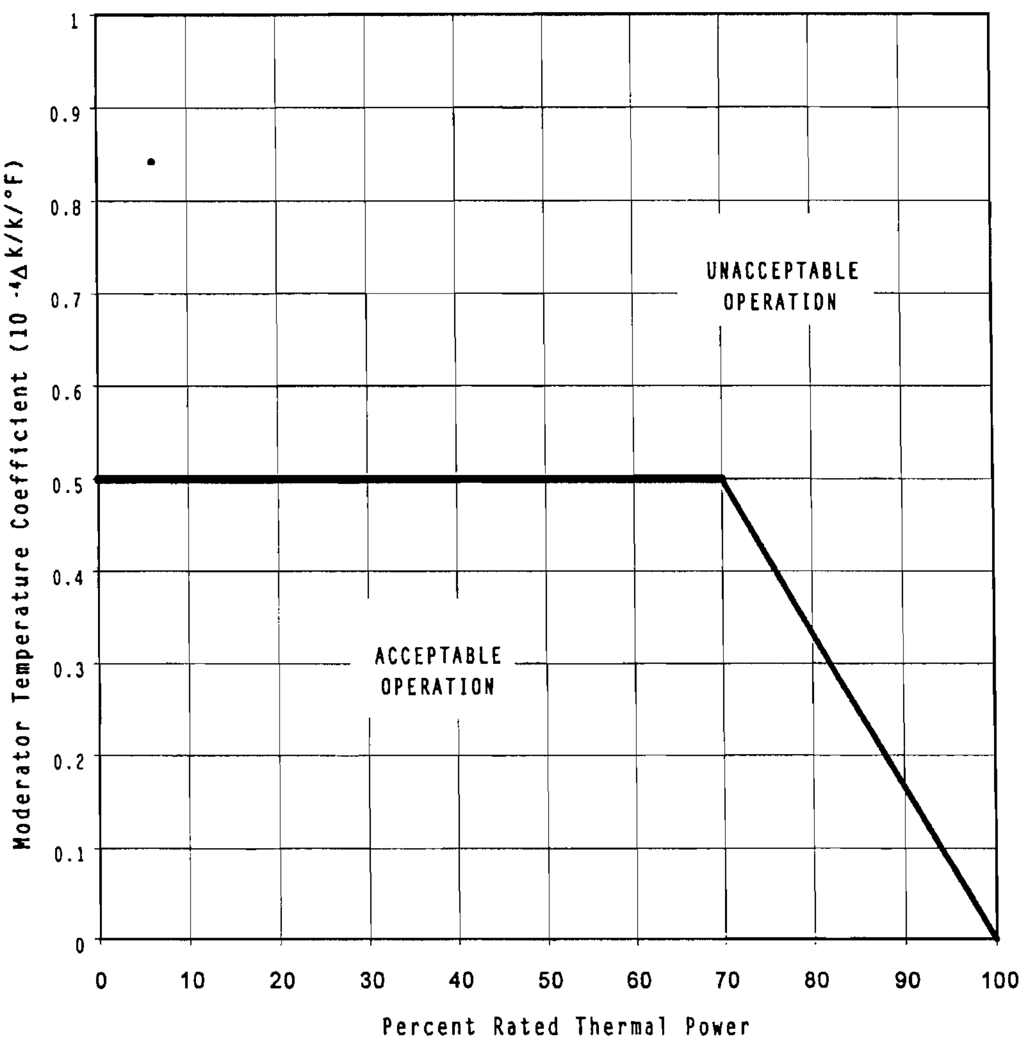

Figure 3.1.3-1 (page 1 of 1)
Moderator Temperature Coefficient vs. Power Level

3.1 REACTIVITY CONTROL SYSTEMS

3.1.4 Rod Group Alignment Limits

LCO 3.1.4 All shutdown and control rods shall be OPERABLE.

AND

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

APPLICABILITY: MODES 1 and 2.

ACTIONS

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One rod not within alignment limits.	B.1 Restore rod to within alignment limits.	1 hour
	OR	
	B.2.1.1 Verify SDM to be within the limits provided in the COLR.	1 hour
	OR	
	B.2.1.2 Initiate boration to restore SDM to within limit.	1 hour
	AND	
	B.2.2 Reduce THERMAL POWER to ≤ 75% RTP.	2 hours
	AND	
	B.2.3 Verify SDM to be within the limits provided in the COLR.	Once per 12 hours
	AND	
	B.2.4 Perform SR 3.2.1.1 and SR 3.2.1.2.	72 hours
	AND	
	B.2.5 Perform SR 3.2.2.1.	72 hours
	AND	
	B.2.6 Re-evaluate safety analyses and confirm results remain valid for duration of operation under these conditions.	5 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition B not met.	C.1 Be in MODE 3.	6 hours
D. More than one rod not within alignment limit.	D.1.1 Verify SDM to be within the limits provided in the COLR.	1 hour
	<u>OR</u>	
	D.1.2 Initiate boration to restore required SDM to within limit.	1 hour
	<u>AND</u>	
	D.2 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.4.1	Verify individual rod positions within alignment limit.	In accordance with the Surveillance Frequency Control Program.
SR 3.1.4.2	Verify rod freedom of movement (trippability) by moving each rod not fully inserted in the core $\geq$ 10 steps in either direction.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.4.3	Verify rod drop time of each rod, from the fully withdrawn position, is ≤ 2.7 seconds from the beginning of decay of stationary gripper coil voltage to dashpot entry, with: a. $T_{avg} \geq 500°F$; and b. All reactor coolant pumps operating.	Prior to reactor criticality after each removal of the reactor head

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Shutdown Bank Insertion Limits

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

APPLICABILITY: MODE 1,
MODE 2 with any control bank not fully inserted.

-----NOTE-----
This LCO is not applicable while performing SR 3.1.4.2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more shutdown banks not within limits.	A.1.1 Verify SDM to be within the limits provided in the COLR.	1 hour
	<u>OR</u>	
	A.1.2 Initiate boration to restore SDM to within limit.	1 hour
	<u>AND</u>	
	A.2 Restore shutdown banks to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.5.1	Verify each shutdown bank is within the limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Control Bank Insertion Limits

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

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

-----NOTE-----
This LCO is not applicable while performing SR 3.1.4.2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Control bank insertion limits not met.	A.1.1 Verify SDM to be within the limits provided in the COLR.	1 hour
	<u>OR</u>	
	A.1.2 Initiate boration to restore SDM to within limit.	1 hour
	<u>AND</u>	
	A.2 Restore control bank(s) to within limits.	2 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Control bank sequence or overlap limits not met.	B.1.1 Verify SDM to be within the limits provided in the COLR.	1 hour
	<u>OR</u>	
	B.1.2 Initiate boration to restore SDM to within limit.	1 hour
	<u>AND</u>	
	B.2 Restore control bank sequence and overlap to within limits.	2 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.6.1	Verify estimated critical control bank position is within the limits specified in the COLR.	Within 4 hours prior to achieving criticality
SR 3.1.6.2	Verify each control bank insertion is within the limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program.
SR 3.1.6.3	Verify sequence and overlap limits specified in the COLR are met for control banks not fully withdrawn from the core.	In accordance with the Surveillance Frequency Control Program.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Rod Position Indication

LCO 3.1.7 The Digital Rod Position Indication (DRPI) System and the Demand Position Indication System shall be OPERABLE

APPLICABILITY: MODES 1 and 2.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One DRPI per group inoperable for one or more groups.	A.1 Verify the position of the rods with inoperable position indicators indirectly by using core power distribution measurement information.	Once per 8 hours
	<u>OR</u>	
	A.2 Reduce THERMAL POWER to $\leq$ 50% RTP.	8 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. More than one DRPI per group inoperable.	B.1 Place the control rods under manual control.	Immediately
	<u>AND</u>	
	B.2 Monitor and record RCS T_{avg}.	Once per 1 hour
	<u>AND</u>	
	B.3 Verify the position of the rods with inoperable position indicators indirectly by using core power distribution measurement information.	Once per 8 hours
	<u>AND</u>	
	B.4 Restore inoperable position indicators to OPERABLE status such that a maximum of one DRPI per group is inoperable.	24 hours
C. One or more rods with inoperable DRPIs have been moved in excess of 24 steps in one direction since the last determination of the rod's position.	C.1 Verify the position of the rods with inoperable position indicators indirectly by using core power distribution measurement information.	4 hours
	<u>OR</u>	
	C.2 Reduce THERMAL POWER to $\leq$ 50% RTP.	8 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One demand position indicator per bank inoperable for one or more banks.	D.1.1 Verify by administrative means all DRPIs for the affected banks are OPERABLE.	Once per 8 hours
	AND	
	D.1.2 Verify the most withdrawn rod and the least withdrawn rod of the affected banks are ≤ 12 steps apart.	Once per 8 hours
	OR	
	D.2 Reduce THERMAL POWER to ≤ 50% RTP.	8 hours
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.1.7.1	Verify each DRPI agrees within 12 steps of the group demand position for the full indicated range of rod travel.	Once prior to criticality after each removal of the reactor vessel head.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.8 PHYSICS TESTS Exceptions - MODE 2

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

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

may be suspended, provided:

a. RCS lowest operating loop average temperature is ≥ 541°F; and

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

c. THERMAL POWER is ≤ 5% RTP

APPLICABILITY: MODE 2 during PHYSICS TESTS.

ACTIONS

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

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.8.1	Perform a CHANNEL OPERATIONAL TEST on power range and intermediate range channels per SR 3.3.1.7, SR 3.3.1.8, and Table 3.3.1-1.	Prior to initiation of PHYSICS TESTS
SR 3.1.8.2	Verify the RCS lowest operating loop average temperature is ≥ 541°F.	In accordance with the Surveillance Frequency Control Program.
SR 3.1.8.3	Verify THERMAL POWER is ≤ 5% RTP.	In accordance with the Surveillance Frequency Control Program.
SR 3.1.8.4	Verify SDM is within the limits provided in the COLR.	In accordance with the Surveillance Frequency Control Program.

3.2 POWER DISTRIBUTION LIMITS

3.2.1A Heat Flux Hot Channel ($F_Q(Z)$) (RAOC-W(Z) Methodology)

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

APPLICABILITY: MODE 1

---------------------------------NOTE---
This LCO is only applicable to Unit 1 Cycle 24

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. -------------NOTE--------------- Required Action A.4 shall be completed whenever this Condition is entered. ----------------------------------- $F_Q^C(Z)$ not within limit.	A.1 Reduce THERMAL POWER ≥ 1% RTP for each 1% $F_Q^C(Z)$ exceeds limit.	15 minutes after each $F_Q^C(Z)$ determination
	<u>AND</u>	
	A.2 Reduce Power Range Neutron Flux--High trip setpoints ≥ 1% for each 1% $F_Q^C(Z)$ exceeds limit.	72 hours after each $F_Q^C(Z)$ determination
	<u>AND</u>	

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.3 Reduce Overpower N-16 trip setpoints ≥ 1% for each 1% $F_Q^C(Z)$ exceeds limit.	72 hours after each $F_Q^C(Z)$ determination
	<u>AND</u>	
	A.4 Perform SR 3.2.1.1 and SR 3.2.1.2.	Prior to increasing THERMAL POWER above the limit of Required Action A.1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. --------------NOTE-------------- Required Action B.4 shall be completed whenever this Condtion is entered. ------------------------------------		
$F_Q^W(Z)$ not within limits.	B.1 Reduce AFD limits ≥ 1% for each 1% $F_Q^W(Z)$ exceeds limit.	4 hours
	AND	
	B.2 Reduce Power Range Neutron Flux--High trip setpoints ≥ 1% for each 1% that the maximum allowable power of the AFD limits is reduced.	72 hours
	AND	
	B.3 Reduce Overpower N-16 trip setpoints ≥ 1% for each 1% that the maximum allowable power of the AFD limits is reduced.	72 hours
	AND	
	B.4 Perform SR 3.2.1.1 and SR 3.2.1.2.	Prior to increasing THERMAL POWER above the maximum allowable power of the AFD limits.
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

---NOTE---
During power escalation following shutdown, THERMAL POWER may be increased until an equilibrium power level has been achieved at which a power distribution measurement is obtained.

SURVEILLANCE		FREQUENCY
SR 3.2.1.1	Verify $F_Q^C(Z)$ is within limit.	Once after each refueling prior to THERMAL POWER exceeding 75% RTP <u>AND</u> Once within 24 hours after achieving equilibrium conditions after exceeding, by ≥ 20% RTP, the THERMAL POWER at which $F_Q^C(Z)$ was last verified <u>AND</u> In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.2.1.2 (continued)	Once within 24 hours after achieving equilibrium conditions after exceeding, by $\geq$ 20% RTP, the THERMAL POWER at which $F_Q^C(Z)$ was last verified <u>AND</u> In accordance with the Surveillance Frequency Control Program.

3.2 POWER DISTRIBUTION LIMITS

3.2.1B Heat Flux Hot Channel ($F_Q(Z)$) (RAOC-T(Z) Methodology)

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

APPLICABILITY: MODE 1

--------------------------------NOTE--------------------------------
This LCO is NOT applicable to Unit 1 Cycle 24

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. -------------NOTE--------------- Required Action A.4 shall be completed whenever this Condition is entered prior to increasing THERMAL POWER above the limit of Required Action A.1. SR 3.2.1.2 is not required to be performed if this Condition is entered prior to THERMAL POWER exceeding 75% RTP after a refueling. -----------------------------------		
$F_Q^C(Z)$ not within limit.	A.1 Reduce THERMAL POWER ≥ 1% RTP for each 1% $F_Q^C(Z)$ exceeds limit.	15 minutes after each $F_Q^C(Z)$ determination
	AND	
	A.2 Reduce Power Range Neutron Flux--High trip setpoints ≥ 1% for each 1% that THERMAL POWER is limited below RATED THERMAL POWER by Required Action A.1.	72 hours after each $F_Q^C(Z)$ determination
	AND	

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.3 Reduce Overpower N-16 trip setpoints ≥ 1% for each 1% that THERMAL POWER is limited below RATED THERMAL POWER by Required Action A.1.	72 hours after each $F_Q^C(Z)$ determination
	AND	
	A.4 Perform SR 3.2.1.1 and SR 3.2.1.2.	Prior to increasing THERMAL POWER above the limit of Required Action A.1

ACTIONS (continued)

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2.3 Reduce Overpower N-16 trip setpoints ≥ 1% for each 1% that THERMAL POWER is limited below RATED THERMAL POWER by Required Action B.2.1. AND	72 hours after each $F_Q^W(Z)$ determination
	B.2.4 Perform SR 3.2.1.1 and SR 3.2.1.2.	Prior to increasing THERMAL POWER above the limit of Required Action B.2.1.
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.1.1	Verify $F_Q^C(Z)$ is within limit.	Once after each refueling prior to THERMAL POWER exceeding 75% RTP <u>AND</u> Once within 24 hours after achieving equilibrium conditions after exceeding, by ≥ 20% RTP, the THERMAL POWER at which $F_Q^C(Z)$ was last verified <u>AND</u> In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.2.1.2	Verify $F_Q^W(Z)$ is within limit.	Once after each refueling within 24 hours after THERMAL POWER exceeds 75% RTP. <u>AND</u> Once within 24 hours after achieving equilibrium conditions after exceeding, by ≥ 20% RTP, the THERMAL POWER at which $F_Q^W(Z)$ was last verified <u>AND</u> In accordance with the Surveillance Frequency Control Program.

3.2 POWER DISTRIBUTION LIMITS

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

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

APPLICABILITY: MODE 1

ACTIONS

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

---NOTE---
During power escalation following shutdown, THERMAL POWER may be increased until an equilibrium power level has been achieved at which a power distribution measurement is obtained.

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

3.2 POWER DISTRIBUTION LIMITS

3.2.3 AXIAL FLUX DIFFERENCE (AFD) (Relaxed Axial Offset Control (RAOC) Methodology)

LCO 3.2.3 The AFD in % flux difference units shall be maintained within the limits specified in the COLR.

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

APPLICABILITY: MODE 1 with THERMAL POWER $\geq$ 50% RTP

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.3.1	Verify AFD is within limits for each OPERABLE excore channel.	In accordance with the Surveillance Frequency Control Program.

3.2 POWER DISTRIBUTION LIMITS

3.2.4 QUADRANT POWER TILT RATIO (QPTR)

LCO 3.2.4 The QPTR shall be ≤ 1.02.

APPLICABILITY: MODE 1 with THERMAL POWER > 50% RTP

ACTIONS

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.4 Reevaluate safety analyses and confirm results remain valid for duration of operation under this condition.	Prior to increasing THERMAL POWER above the limit of Required Action A.1
	<u>AND</u>	
	A.5 -------------------NOTES-------------------- 1. Perform Required Action A.5 only after Required Action A.4 is completed. 2. Required Action A.6 shall be completed whenever Required Action A.5 is performed. --- Normalize excore detectors to restore QPTR to within limit.	Prior to increasing THERMAL POWER above the limit of Required Action A.1
	<u>AND</u>	
	A.6 ---------------------NOTE-------------------- Perform Required Action A.6 only after Required Action A.5 is completed. --- Perform SR 3.2.1.1, SR 3.2.1.2 and SR 3.2.2.1.	Within 24 hours after achieving equilibrium conditions at RTP not to exceed 48 hours after increasing THERMAL POWER above the limit of Required Actions A.1
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to $\leq$ 50% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

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

3.3 INSTRUMENTATION

3.3.1 Reactor Trip System (RTS) Instrumentation

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

APPLICABILITY: According to Table 3.3.1-1

ACTIONS

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

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. --------------NOTE-------------- While this LCO is not met for Function 19, 20, or 21, in MODE 5, making the Rod Control System capable of rod withdrawal is not permitted. ------------------------------------		
One channel or train inoperable.	C.1 Restore channel or train to OPERABLE status.	48 hours
	<u>OR</u>	
	C.2.1 Initiate action to fully insert all rods.	48 hours
	<u>AND</u>	
	C.2.2 Place the Rod Control System in a condition incapable of rod withdrawal.	49 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One Power Range Neutron Flux - High channel inoperable.	------------NOTE------------ One channel may be bypassed for up to 12 hours for surveillance testing and setpoint adjustment. ------------------------------	
	D.1.1 ------------NOTE------------ Only required to be performed when the Power Range Neutron Flux input to QPTR is inoperable. ------------------------------ Perform SR 3.2.4.2.	12 hours from discovery of THERMAL POWER > 75% RTP <u>AND</u> Once per 12 hours thereafter
	<u>AND</u>	
	D.1.2 Place channel in trip.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One channel inoperable.	----------------------NOTE---------------------- One channel may be bypassed for up to 12 hours for surveillance testing. --	
	E.1 Place channel in trip.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
F. One Intermediate Range Neutron Flux channel inoperable.	F.1 Reduce THERMAL POWER to < P-6.	24 hours
	<u>OR</u>	
	F.2 Increase THERMAL POWER to > P-10.	24 hours
G. Two Intermediate Range Neutron Flux channels inoperable.	G.1 -----------------NOTE---------------------- Limited boron concentration changes associated with RCS inventory control or limited plant temperature changes are allowed. --- Suspend operations involving positive reactivity additions.	Immediately
	<u>AND</u>	
	G.2 Reduce THERMAL POWER to < P-6.	2 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
H. Not used.		
I. One Source Range Neutron Flux channel inoperable.	------------------------NOTE------------------------ Limited boron concentration changes associated with RCS inventory control or limited plant temperature changes are allowed. ---	
	I.1 Suspend operations involving positive reactivity additions.	Immediately
J. Two Source Range Neutron Flux channels inoperable.	J.1 Open reactor trip breakers (RTBs).	Immediately
K. One Source Range Neutron Flux channel inoperable.	K.1 Restore channel to OPERABLE status.	48 hours
	<u>OR</u>	
	K.2.1 Initiate action to fully insert all rods.	48 hours
	<u>AND</u>	
	K.2.2 Place the Rod Control System in a condition incapable of rod withdrawal.	49 hours
L. Not used.		

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
M. One channel inoperable.	------------------------NOTE---------------------- One channel may be bypassed for up to 12 hours for surveillance testing. -- M.1 Place channel in trip.	 72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
N. Required Action and associated Completion Time of Condition M not met.	N.1 Reduce THERMAL POWER to < P-7.	6 hours
O. One Low Fluid Oil pressure Turbine Trip channel inoperable.	------------------------NOTE---------------------- One channel may be bypassed for up to 12 hours for surveillance testing. -- O.1 Place channel in trip.	 72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
P. One or more Turbine Stop Valve Closure Turbine Trip channel(s) inoperable.	P.1 Place channel(s) in trip.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
Q. Required Action and associated Completion Time of Condition O or P not met.	Q.1 Reduce THERMAL POWER to < P-9.	4 hours
R. One train inoperable.	------------------------NOTE----------------------- One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE. --- R.1 Restore train to OPERABLE status.	 24 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
S. One RTB train inoperable.	------------------------NOTE------------------------ One train may be bypassed for up to 4 hours for surveillance testing or maintenance, provided the other train is OPERABLE. -- S.1 Restore train to OPERABLE status.	 24 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
T. One or more required channel(s) inoperable.	T.1 Verify interlock is in required state for existing unit conditions.	1 hour
U. One or more required channel(s) inoperable.	U.1 Verify interlock is in required state for existing unit conditions.	1 hour
V. One trip mechanism inoperable for one RTB.	V.1 Restore trip mechanism to OPERABLE status.	48 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
W. Required Action and associated Completion Time of Condition B, D, E, R, S, T or V not met.	W.1 Be in MODE 3.	6 hours
X. Required Action and associated Completion Time of Condition U not met.	X.1 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

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

SURVEILLANCE		FREQUENCY
SR 3.3.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.2	----------NOTE---------- Not required to be performed until 24 hours after THERMAL POWER is ≥ 15% RTP. -------------------- Compare results of calorimetric heat balance calculation to NIS Power Range channel and N-16 Power Monitor channel outputs. Adjust NIS Power Range channel outputs if calorimetric heat balance calculation exceeds NIS Power Range channel outputs by more than +2% RTP. Adjust N-16 Power Monitor channel outputs if calorimetric heat balance calculation exceeds N-16 Power Monitor channel outputs by more than +2% RTP.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.1.3	----------NOTE---------- Not required to be performed until 24 hours after THERMAL POWER is ≥ 50% RTP. -------------------- Compare results of the core power distribution measurements to Nuclear Instrumentation System (NIS) AFD. Adjust NIS channel if absolute difference is ≥ 3%.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.1.4	----------NOTE---------- This Surveillance must be performed on the reactor trip bypass breaker for the local manual shunt trip only prior to placing the bypass breaker in service. -------------------- Perform TADOT.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.5	Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.1.6	-----NOTE----- Not required to be performed until 72 hours after achieving equilibrium conditions with THERMAL POWER $\geq$ 75% RTP. ---------- Calibrate excore channels to agree with core power distribution measurements.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.1.7	-----NOTES----- 1. Not required to be performed for source range instrumentation prior to entering MODE 3 from MODE 2 until 4 hours after entry into MODE 3. 2. Source range instrumentation shall include verification that interlocks P-6 and P-10 are in their required state for existing unit conditions. ---------- Perform COT.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.8	----------NOTE---------- This Surveillance shall include verification that interlocks P-6 and P-10 are in their required state for existing unit conditions. ------------------------------ Perform COT.	---------NOTE---------- Only required when not performed within the previous Frequency specified in the SFCP. ---------------------------- Prior to reactor startup <u>AND</u> 12 hours after reducing power below P-10 for power and intermediate instrumentation <u>AND</u> Four hours after reducing power below P-6 for source range instrumentation <u>AND</u> In accordance with the Surveillance Frequency Control Program thereafter

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.9	----------NOTE---------- Verification of setpoint is not required. -------------------- Perform TADOT.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.1.10	----------NOTES---------- 1. N-16 detectors are excluded from CHANNEL CALIBRATION. 2. This Surveillance shall include verification that the time constants are adjusted to the prescribed values. 3. Prior to entry into MODES 2 or 1, N-16 detector plateau verification is not required to be performed until 72 hours after achieving equilibrium conditions with THERMAL POWER $\geq$ 90% RTP. -------------------- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.3.1.11	----------NOTES---------- 1. Neutron detectors are excluded from CHANNEL CALIBRATION. 2. This Surveillance shall include verification that the time constants are adjusted to the prescribed values. 3. Prior to entry into MODES 2 or 1, power and intermediate range detector plateau verification is not required to be performed until 72 hours after achieving equilibrium conditions with THERMAL POWER $\geq$ 90% RTP. ------------------------------- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.1.12	Not used.	
SR 3.3.1.13	Perform COT.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.1.14	----------NOTE---------- Verification of setpoint is not required. ------------------------------- Perform TADOT.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.3.1.15	-----NOTE----- Verification of setpoint is not required. ----- Perform TADOT.	 Prior to exceeding the P-9 interlock whenever the unit has been in MODE 3, if not performed in the previous Frequency specified in the SFCP
SR 3.3.1.16	-----NOTE----- Neutron and N-16 detectors are excluded from response time testing. ----- Verify RTS RESPONSE TIMES are within limits.	 In accordance with the Surveillance Frequency Control Program.

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE(a)
1. Manual Reactor Trip	1,2	2	B	SR 3.3.1.14	NA
	3(b), 4(b), 5(b)	2	C	SR 3.3.1.14	NA
2. Power Range Neutron Flux					
a. High	1,2	4	D	SR 3.3.1.1 SR 3.3.1.2 SR 3.3.1.7 SR 3.3.1.11 SR 3.3.1.16	≤ 109.6% RTP(q)(r)
b. Low	1(c), 2	4	E	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11 SR 3.3.1.16	≤ 25.6% RTP(q)(r)
3. Power Range Neutron Flux Rate High Positive Rate	1,2	4	E	SR 3.3.1.7 SR 3.3.1.11 SR 3.3.1.16	≤ 6.3% RTP with time constant ≥ 2 sec
4. Intermediate Range Neutron Flux	1(c), 2(d)	2	F,G	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11	≤ 31.5% RTP

(a) The Allowable Value defines the limiting safety system setting except for Trip Functions 2a, 2b, 6, 7, and 14 (the Nominal Trip Setpoint defines the limiting safety system setting for these Trip Functions). See the Bases for the Nominal Trip Setpoints.

(b) With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.

(c) Below the P-10 (Power Range Neutron Flux) interlock.

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

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

(r) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the Nominal Trip Setpoint or a value that is more conservative than the Trip Setpoint; otherwise, the channel shall be declared inoperable. The Nominal Trip Setpoint, the methodology used to determine the as-found tolerance and the methodology used to determine the as-left tolerance shall be specified in the Technical Specification Bases.

Table 3.3.1-1 (page 2 of 6)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE(a)
5. Source Range Neutron Flux	2(e)	2	I,J	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11	≤ 1.4 E5 cps
	3(b), 4(b), 5(b)	2	J,K	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.11	≤ 1.4 E5 cps
6. Overtemperature N-16	1,2	4	E	SR 3.3.1.1 SR 3.3.1.2 SR 3.3.1.3 SR 3.3.1.6 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	Refer to Note 1(q)(r)
7. Overpower N-16	1,2	4	E	SR 3.3.1.1 SR 3.3.1.2 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≤ 112.8% RTP (q)(r)
8. Pressurizer Pressure					
a. Low	1(g)	4	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ 1863.6 psig (Unit 1) ≥ 1865.2 psig (Unit 2)
b. High	1,2	4	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≤ 2400.8 psig (Unit 1) ≤ 2401.4 psig (Unit 2)

(a) The Allowable Value defines the limiting safety system setting except for Trip Functions 2a, 2b, 6, 7, and 14 (the Nominal Trip Setpoint defines the limiting safety system setting for these Trip Functions). See the Bases for the Nominal Trip Setpoints.
(b) With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.
(e) Below the P-6 (Intermediate Range Neutron Flux) interlock.
(g) Above the P-7 (Low Power Reactor Trips Block) interlock.
(q) If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined as-found acceptance criteria band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.
(r) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the Nominal Trip Setpoint or a value that is more conservative than the Trip Setpoint; otherwise, the channel shall be declared inoperable. The Nominal Trip Setpoint, the methodology used to determine the as-found tolerance and the methodology used to determine the as-left tolerance shall be specified in the Technical Specification Bases.

Table 3.3.1-1 (page 3 of 6)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE(a)
9. Pressurizer Water Level - High	1(g)	3	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≤ 93.9% of instrument span
10. Reactor Coolant Flow - Low	1(g)	3 per loop	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ 88.6% of indicated loop flow (Unit 1) ≥ 88.8% of indicated loop flow (Unit 2)
11. Not Used					
12. Undervoltage RCPs	1(g)	1 per bus	M	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ 4753 V
13. Underfrequency RCPs	1(g)	1 per bus	M	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ 57.06 Hz
14. Steam Generator (SG) Water Level Low-Low (l)	1, 2	4 per SG	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ 37.5% of narrow range instrument span (Unit 1) (q)(r) ≥ 34.9% of narrow range instrument span (Unit 2)(q)(r)
15. Not Used.					

(a) The Allowable Value defines the limiting safety system setting except for Trip Functions 2a, 2b, 6, 7, and 14 (the Nominal Trip Setpoint defines the limiting safety system setting for these Trip Functions). See the Bases for the Nominal Trip Setpoints.
(g) Above the P-7 (Low Power Reactor Trips Block) interlock.
(l) The applicable MODES for these channels in Table 3.3.2-1 are more restrictive.
(q) If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined as-found acceptance criteria band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.
(r) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the Nominal Trip Setpoint, or a value that is more conservative than the Trip Setpoint; otherwise, the channel shall be declared inoperable. The Nominal Trip Setpoint, the methodology used to determine the as-found tolerance and the methodology used to determine the as-left tolerance shall be specified in the Technical Specification Bases.

Table 3.3.1-1 (page 4 of 6)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE(a)
16. Turbine Trip					
a. Low Fluid Oil Pressure	1(j)	3	O	SR 3.3.1.10 SR 3.3.1.15	≥ 46.6 psig
b. Turbine Stop Valve Closure	1(j)	4	P	SR 3.3.1.10 SR 3.3.1.15	≥ 1% open
17. Safety Injection (SI) Input from Engineered Safety Feature Actuation System (ESFAS)	1,2	2 trains	R	SR 3.3.1.14	NA
18. Reactor Trip System Interlocks					
a. Intermediate Range Neutron Flux, P-6	2(e)	2	T	SR 3.3.1.11 SR 3.3.1.13	≥ 6E-11 amp
b. Low Power Reactor Trips Block, P-7	1	1 per train	U	SR 3.3.1.5	NA
c. Power Range Neutron Flux, P-8	1	4	U	SR 3.3.1.11 SR 3.3.1.13	≤ 50.7% RTP
d. Power Range Neutron Flux, P-9	1	4	U	SR 3.3.1.11 SR 3.3.1.13	≤ 52.7% RTP
e. Power Range Neutron Flux, P-10	1,2	4	T	SR 3.3.1.11 SR 3.3.1.13	≥ 7.3% RTP and ≤ 12.7% RTP
f. Turbine First Stage Pressure, P-13	1	2	U	SR 3.3.1.10 SR 3.3.1.13	≤ 12.7% turbine power
19. Reactor Trip Breakers(RTBs)(k)	1,2	2 trains	S	SR 3.3.1.4	NA
	3(b), 4(b), 5(b)	2 trains	C	SR 3.3.1.4	NA

(a) The Allowable Value defines the limiting safety system setting except for Trip Functions 2a, 2b, 6, 7, and 14 (the Nominal Trip Setpoint defines the limiting safety system setting for these Trip Functions). See the Bases for the Nominal Trip Setpoints.
(b) With Rod Contol System capable of rod withdrawal or one or more rods not fully inserted.
(e) Below the P-6 (Intermediate Range Neutron Flux) interlock.
(j) Above the P-9 (Power Range Neutron Flux) interlock.
(k) Including any reactor trip bypass breakers that are racked in and closed for bypassing an RTB.

Table 3.3.1-1 (page 5 of 6)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE[a]
20. Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms[k]	1,2	1 each per RTB	V	SR 3.3.1.4	NA
	3[b], 4[b], 5[b]	1 each per RTB	C	SR 3.3.1.4	NA
21. Automatic Trip Logic	1,2	2 trains	R	SR 3.3.1.5	NA
	3[b], 4[b], 5[b]	2 trains	C	SR 3.3.1.5	NA

(a) The Allowable Value defines the limiting safety system setting except for Trip Functions 2a, 2b, 6, 7, and 14 (the Nominal Trip Setpoint defines the limiting safety system setting for these Trip Functions). See the Bases for the Nominal Trip Setpoints.
(b) With Rod Contol System capable of rod withdrawal or one or more rods not fully inserted.
(k) Including any reactor trip bypass breakers that are racked in and closed for bypassing an RTB.

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

Note 1: Overtemperature N-16

The Overtemperature N-16 Function Allowable Values shall not exceed the following setpoint by more than 0.5% N-16 span for N-16 input, 0.5% T_{cold} span for T_{cold} input, 0.5% pressure span for pressure input, and 0.5% Δq span for Δq input.

$$Q_{setpoint} = K_1 - K_2\left[\frac{(1+\tau_1 S)}{(1+\tau_2 S)}T_c - T_c^{\circ}\right] + K_3(P - P^1) - f_1(\Delta q)$$

Where:

$Q_{setpoint}$ = Overtemperature N-16 trip setpoint

K_1 = *

K_2 = */°F

K_3 = */psig

T_C = Measured cold leg temperature, °F

T_c° = Indicated reference T_C at RATED THERMAL POWER, *°F

P = Measured pressurizer pressure, psig

P^1 ≥ * psig (Nominal RCS operating pressure)

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

τ_1, τ_2 = Time constants utilized in lead-lag controller for T_c, $\tau_1 \geq$ * sec, and $\tau_2 \leq$ * sec

$f_1(\Delta q)$ = *{(q_t - q_b) + *%} when (q_t - q_b) ≤ *% RTP
0% when *% RTP < (q_t - q_b) < *% RTP
*{(q_t - q_b) - *%} when (q_t - q_b) ≥ *% RTP

* as specified in the COLR

3.3 INSTRUMENTATION

3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

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

APPLICABILITY: According to Table 3.3.2-1

ACTIONS

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

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One train inoperable.	-----------------------NOTE------------------------ One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE. --- C.1 Restore train to OPERABLE status.	 24 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
D. One channel inoperable.	-----------------------NOTE------------------------ One channel may be bypassed for up to 12 hours for surveillance testing. --- D.1 Place channel in trip.	 72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
E. One Containment Pressure channel inoperable.	-----------------------NOTE------------------------ One channel may be bypassed for up to 12 hours for surveillance testing. --- E.1 Place channel in bypass.	 72 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. One channel or train inoperable.	F.1 Restore channel or train to OPERABLE status.	48 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
G. One train inoperable.	-----------------------NOTE------------------------ One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE. --- G.1 Restore train to OPERABLE status.	24 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
H. One train inoperable.	-----------------------NOTE------------------------ One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE. --- H.1 Restore train to OPERABLE status.	24 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
I. One channel inoperable.	----------------------NOTE----------------------- One channel may be bypassed for up to 12 hours for surveillance testing. ---	
	I.1 Place channel in trip.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
J. One Main Feedwater Pump trip channel inoperable.	J.1 Place channel in trip.	6 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
K. One channel inoperable.	----------------------NOTE----------------------- One channel may be bypassed for up to 12 hours for surveillance testing. ---	
	K.1 Place channel in bypass.	72 hours
L. One or more channels inoperable.	L.1 Verify interlock is in required state for existing unit condition.	1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
M. Required Action and associated Completion Time of Conditions B, C, or K not met.	M.1 Be in MODE 3. <u>AND</u> M.2 Be in MODE 5.	6 hours 36 hours
N. Required Action and associated Completion Time of Conditions D, E, F, G, or L not met.	N.1 Be in MODE 3. <u>AND</u> N.2 Be in MODE 4.	6 hours 12 hours
O. Required Action and associated Completion Time of Conditions H, I, or J not met.	O.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

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

SURVEILLANCE		FREQUENCY
SR 3.3.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.2	Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.2.3	Not Used.	
SR 3.3.2.4	Perform MASTER RELAY TEST.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.2.5	Perform COT.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.2.6	Perform SLAVE RELAY TEST.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.2.7	---NOTES--- 1. Verification of relay setpoints not required. 2. Actuation of final devices not included. --- Perform TADOT.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.3.2.8	----------NOTE---------- Verification of setpoint not required for manual initiation functions. ------------------------------ Perform TADOT.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.2.9	----------NOTE---------- This Surveillance shall include verification that the time constants are adjusted to the prescribed values. ------------------------------ Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.2.10	----------NOTE---------- Not required to be performed for the turbine driven AFW pump until 24 hours after SG pressure is $\geq$ 532 psig. ------------------------------ Verify ESF RESPONSE TIMES are within limits.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.2.11	----------NOTE---------- Verification of setpoint not required. ------------------------------ Perform TADOT.	In accordance with the Surveillance Frequency Control Program.

Table 3.3.2-1 (page 1 of 6)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE[a]
1. Safety Injection					
a. Manual Initiation	1, 2, 3, 4	2	B	SR 3.3.2.8	NA
b. Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
c. Containment Pressure -- High 1	1, 2, 3	3	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ 3.8 psig
d. Pressurizer Pressure -- Low	1, 2, 3[b]	4	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ 1803.6 psig
e. Steam Line Pressure Low	1, 2, 3[b]	3 per steam line	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ 594.0 psig[c] (Unit 1) ≥ 578.4 psig[c] (Unit 2)
2. Containment Spray					
a. Manual Initiation	1, 2, 3, 4	2 per train, 2 trains	B	SR 3.3.2.8	NA
b. Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
c. Containment Pressure High -- 3	1, 2, 3	4	E	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ 18.8 psig

(a) The Allowable Value defines the limiting safety system except for functions 5b and 6c (the Nominal Trip Setpoint defines the limiting safety system setting for these Trip Functions). See the Bases for the Nominal Trip Setpoints.
(b) Above the P-11 (Pressurizer Pressure) interlock and below P-11, unless the Function is blocked.
(c) Time constants used in the lead/lag controller are $T_1 \geq 10$ seconds and $T_2 \leq 5$ seconds.

Table 3.3.2-1 (page 2 of 6)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE[(a)]
3. Containment Isolation					
a. Phase A Isolation					
(1) Manual Initiation	1, 2, 3, 4	2	B	SR 3.3.2.8	NA
(2) Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
(3) Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				
b. Phase B Isolation					
(1) Manual Initiation	1, 2, 3, 4	2 per train, 2 trains	B	SR 3.3.2.8	NA
(2) Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
(3) Containment Pressure High -- 3	1, 2, 3	4	E	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9	≤ 18.8 psig

(a) The Allowable Value defines the limiting safety system except for functions 5b and 6c (the Nominal Trip Setpoint defines the limiting safety system setting for these Trip Functions). See the Bases for the Nominal Trip Setpoints.

Table 3.3.2-1 (page 3 of 6)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE[a]
4. Steam Line Isolation					
a. Manual Initiation	1, 2[i], 3[i]	2	F	SR 3.3.2.8	NA
b. Automatic Actuation Logic and Actuation Relays	1, 2[i], 3[i]	2 trains	G	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
c. Containment Pressure -- High 2	1, 2[i], 3[i]	3	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ 6.8 psig
d. Steam Line Pressure					
(1) Low	1, 2[i], 3[b][i]	3 per steam line	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ 594.0 psig[c] (Unit 1) ≥ 578.4 psig[c] (Unit 2)
(2) Negative Rate -- High	3[g][i]	3 per steam line	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ 178.7 psi[h]

(a) The Allowable Value defines the limiting safety system except for functions 5b and 6c (the Nominal Trip Setpoint defines the limiting safety system setting for these Trip Functions). See the Bases for the Nominal Trip Setpoints.

(b) Above the P-11 (Pressurizer Pressure) Interlock and below P-11, unless the Function is blocked.

(c) Time constants used in the lead/lag controller are $T_1 \geq 10$ seconds and $T_2 \leq 5$ seconds.

(g) Below the P-11 (Pressurizer Pressure) Interlock; however, may be blocked below P-11 when safety injection on steam line pressure-low is not blocked.

(h) Time constant utilized in the rate/lag controller is ≥ 50 seconds.

(i) Except when all MSIVs and their associated upstream drip pot isolation valves are closed and deactivated.

Table 3.3.2-1 (page 4 of 6)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE(a)
5. Turbine Trip and Feedwater Isolation					
a. Automatic Actuation Logic and Actuation Relays	1, 2(j)	2 trains	H	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
b. SG Water Level -- High High (P-14)	1, 2(j)	3 per SG(p)	I	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤84.5% of narrow range span (Unit 1) (q)(r) ≤82.0% of narrow range span (Unit 2) (q)(r)
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				

(a) The Allowable Value defines the limiting safety system except for functions 5b and 6c (the Nominal Trip Setpoint defines the limiting safety system setting for these Trip Functions). See the Bases for the Nominal Trip Setpoints.
(j) Except when all MFIVs and associated bypass valves are closed and de-activated or isolated by a closed manual valve.
(p) A channel selected for use as an input to the SG water level controller must be declared inoperable.
(q) If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined as-found acceptance criteria band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.
(r) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the Nominal Trip Setpoint, or a value that is more conservative than the Trip Setpoint; otherwise, the channel shall be declared inoperable. The Nominal Trip Setpoint, the methodology used to determine the as-found tolerance and the methodology used to determine the as-left tolerance shall be specified in the Technical Specification Bases.

Table 3.3.2-1 (page 5 of 6)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE(a)
6. Auxiliary Feedwater					
a. Automatic Actuation Logic and Actuation Relays (Solid State Protection System)	1, 2, 3	2 trains	G	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
b. Not Used.					
c. SG Water Level Low-Low	1, 2, 3	4 per SG	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥37.5% of narrow range span (Unit 1) (q)(r) ≥34.9% of narrow range span (Unit 2) (q)(r)
d. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				
e. Loss of Offsite Power	1, 2, 3	1 per train	F	SR 3.3.2.7 SR 3.3.2.9 SR 3.3.2.10	NA
f. Not Used.					
g. Trip of all Main Feedwater Pumps	1, 2(d)	2 per AFW pump	J	SR 3.3.2.8	NA
h. Not Used.					

(a) The Allowable Value defines the limiting safety system except for functions 5b and 6c (the Nominal Trip Setpoint defines the limiting safety system setting for these Trip Functions). See the Bases for the Nominal Trip Setpoints.

(d) When one or more Main Feedwater Pump(s) are supplying feedwater to steam generators.

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

(r) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the Nominal Trip Setpoint, or a value that is more conservative than the Trip Setpoint; otherwise, the channel shall be declared inoperable. The Nominal Trip Setpoint, the methodology used to determine the as-found tolerance and the methodology used to determine the as-left tolerance shall be specified in the Technical Specification Bases.

Table 3.3.2-1 (page 6 of 6)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE[(a)]
7. Automatic Switchover to Containment Sump					
a. Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
b. Refueling Water Storage Tank (RWST) Level - Low Low	1, 2, 3, 4	4	K	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ 31.9% instrument span
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				
8. ESFAS Interlocks					
a. Reactor Trip, P-4	1, 2, 3	1 per train, 2 trains	F	SR 3.3.2.11	NA
b. Pressurizer Pressure, P-11	1, 2, 3	3	L	SR 3.3.2.5 SR 3.3.2.9	≤ 1975.2 psig (Unit 1) ≤ 1976.4 psig (Unit 2)

(a) The Allowable Value defines the limiting safety system except for functions 5b and 6c (the Nominal Trip Setpoint defines the limiting safety system setting for these Trip Functions). See the Bases for the Nominal Trip Setpoints.

3.3 INSTRUMENTATION

3.3.3 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.3 The PAM instrumentation for each Function in Table 3.3.3-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.8.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more Functions with two required channels inoperable. OR One required T_{hot} channel and one required Core Exit Temperature channel inoperable. OR One required T_{cold} channel and one required Steam Line Pressure channel for the associated loop inoperable.	C.1 Restore one channel to OPERABLE status.	7 days
D. Required Action and associated Completion Time of Condition C not met.	D.1 Enter the Condition referenced in Table 3.3.3-1 for the channel.	Immediately
E. As required by Required Action D.1 and referenced in Table 3.3.3-1.	E.1 Be in MODE 3. AND E.2 Be in MODE 4.	6 hours 12 hours
F. As required by Required Action D.1 and referenced in Table 3.3.3-1.	F.1 Initiate action in accordance with Specification 5.6.8.	Immediately

SURVEILLANCE REQUIREMENTS

-----NOTE-----
SR 3.3.3.1 and SR 3.3.3.3 apply to each PAM instrumentation Function in Table 3.3.3-1.

SURVEILLANCE		FREQUENCY
SR 3.3.3.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.3.2	Deleted	
SR 3.3.3.3	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program.

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

FUNCTION	REQUIRED CHANNELS	CONDITION REFERENCED FROM REQUIRED ACTION D.1
1. Refueling Water Storage Tank Level	2	E
2. Subcooling Monitors	2	E
3. Reactor Coolant System (RCS) Hot Leg Temperature (Wide Range) (T_{hot})	1 per loop	E
4. RCS Cold Leg Temperature (Wide Range) (T_{cold})	1 per loop	E
5. RCS Pressure (Wide Range)	2	E
6. Reactor Vessel Water Level	2[(a)]	F
7. Containment Sump Water Level (Wide Range)	2	E
8. Containment Pressure (Intermediate Range)	2	E
9. Steam Line Pressure	2 per steam line	E
10. Containment Area Radiation (High Range)	2	F
11. Deleted		
12. Pressurizer Water Level	2	E
13. Steam Generator Water Level (Narrow Range)	2 per steam generator	E
14. Condensate Storage Tank Level	2	E
15. Core Exit Temperature - Quadrant 1	2[(c)]	E
16. Core Exit Temperature - Quadrant 2	2[(c)]	E
17. Core Exit Temperature - Quadrant 3	2[(c)]	E
18. Core Exit Temperature - Quadrant 4	2[(c)]	E
19. Auxiliary Feedwater Flow		
a. AFW Flow	2 per steam generator	E
OR		
b. AFW Flow and Steam Generator Water Level (Wide Range)	1 each per steam generator	E

(a) A channel is eight sensors in a probe. A channel is OPERABLE if four or more sensors, one or more in the upper section and three or more in the lower section, are OPERABLE.

(b) Deleted

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

3.3 INSTRUMENTATION

3.3.4 Remote Shutdown System

LCO 3.3.4 The Remote Shutdown System Functions in Table 3.3.4-1 and the required hot shutdown panel (HSP) controls shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3

ACTIONS

--NOTE--
Separate Condition entry is allowed for each Function and required HSP control.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions inoperable. <u>OR</u> One or more required HSP controls inoperable.	A.1 Restore required Function and required HSP controls to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.4.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.4.2	Verify each required HSP power and control circuit and transfer switch is capable of performing the intended function.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.4.3	-----NOTE----- Neutron detectors are excluded from CHANNEL CALIBRATION. ----- Perform CHANNEL CALIBRATION for each required instrumentation channel.	In accordance with the Surveillance Frequency Control Program.

Table 3.3.4-1 (page 1 of 1)
Remote Shutdown System Functions

FUNCTION	REQUIRED CHANNELS
1. Neutron Flux Monitors	1
2. Pressurizer Pressure	1
3. RCS Hot Leg Temperature	1 per loop
4. RCS Cold Leg Temperature	1 per loop
5. Condensate Storage Tank Level	1
6. SG Pressure	1 per SG
7. SG Level	1 per SG
8. AFW Flow	1 per SG
9. Pressurizer Level	1
10. Charging Pump to CVCS Charging and RCP Seals Flow Indication	1

3.3 INSTRUMENTATION

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

LCO 3.3.5 The Loss of Power Diesel Generator Start Instrumentation for each Function in Table 3.3.5-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

---NOTE---
Not applicable for 6.9 kV Preferred Offsite Source Undervoltage function when associated source breaker is open.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. --------------NOTE------------- Not applicable to Automatic Actuation Logic and Actuation Relays Function ----------------------------------- One or more Functions with one channel per bus inoperable.	A.1 Place channel in trip.	6 hours ------------NOTE------------ RICT entry is not permitted when a loss of function occurs. -------------------------------- OR In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Two channels per bus for the Preferred offsite source bus undervoltage function inoperable.	B.1 Restore one channel per bus to OPERABLE status.	1 hour ------------NOTE------------ RICT entry is not permitted when a loss of function occurs. -------------------------------- <u>OR</u> In accordance with the Risk Informed Completion Time Program
	<u>OR</u>	
	B.2.1 Declare the Preferred offsite source inoperable.	1 hour
	<u>AND</u>	
	B.2.2 Open associated Preferred offsite source bus breaker.	6 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two channels per bus for the Alternate offsite source bus undervoltage function inoperable.	C.1 Restore one channel per bus to OPERABLE status.	1 hour ------------NOTE------------ RICT entry is not permitted when a loss of function occurs. -------------------------------- <u>OR</u> In accordance with the Risk Informed Completion Time Program
	<u>OR</u>	
	C.2.1 Declare the Alternate offsite source inoperable.	1 hour
	<u>AND</u>	
	C.2.2 Open associated Alternate offsite source bus breaker.	6 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two channels per bus for the 6.9 kV bus loss of voltage function inoperable.	D.1 Restore one channel per bus to OPERABLE status.	1 hour ------------NOTE------------ RICT entry is not permitted when a loss of function occurs. -------------------------------- <u>OR</u> In accordance with the Risk Informed Completion Time Program
	<u>OR</u>	
	D.2 Declare the affected AC emergency buses inoperable.	1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two channels per bus for one or more degraded voltage or low grid undervoltage function inoperable	E.1 Restore one channel per bus to OPERABLE status.	1 hour ------------NOTE------------ RICT entry is not permitted when a loss of function occurs. -------------------------------- OR In accordance with the Risk Informed Completion Time Program
	OR	
	E.2.1 Declare both offsite power source buses inoperable.	1 hour
	AND	
	E.2.2 Open offsite power source breakers to the associated buses.	6 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. One or more Automatic Actuation Logic and Actuation Relays trains inoperable.	F.1 Restore train(s) to OPERABLE status.	1 hour ------------NOTE------------ RICT entry is not permitted when a loss of function occurs. -------------------------------- <u>OR</u> In accordance with the Risk Informed Completion Time Program
G. Required Action and associated Completion Time not met.	G.1 Enter applicable Condition(s) and Required Action(s) for the associated DG made inoperable by LOP DG start instrumentation.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.5.1	Perform ACTUATION LOGIC TEST.	Prior to entering MODE 4 when in MODE 5 for ≥ 72 hours and if not performed in the previous Frequency specified in the SFCP
SR 3.3.5.2	----------------------------------NOTE---------------------------------- Setpoint verification is not applicable. --- Perform TADOT.	Prior to entering MODE 4 when in MODE 5 for ≥ 72 hours and if not performed in the previous Frequency specified in the SFCP
SR 3.3.5.3	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.5.4	Verify LOP DG start ESF RESPONSE TIMES are within limits.	In accordance with the Surveillance Frequency Control Program.

Table 3.3.5-1 (page 1 of 1)
Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation

FUNCTION	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Automatic Actuation Logic and Actuation Relays	2 trains	3.3.5.1	NA
2. Preferred offsite source bus undervoltage	2 per bus	3.3.5.2 3.3.5.3	≤ 5580 V and ≥ 5040 V
3. Alternate offsite source bus undervoltage	2 per bus	3.3.5.2 3.3.5.3	≤ 5580 V and ≥ 5040 V
4. 6.9 kv Class 1E bus undervoltage	2 per bus	3.3.5.2 3.3.5.3 3.3.5.4	≤ 2115 V
5. 6.9 kv Class 1E bus degraded voltage	2 per bus	3.3.5.2 3.3.5.3 3.3.5.4	≥ 6024 V
6. 480 V Class 1E bus low grid undervoltage	2 per bus	3.3.5.2 3.3.5.3 3.3.5.4	≥ 439 V
7. 480 V Class 1E bus degraded voltage	2 per bus	3.3.5.2 3.3.5.3 3.3.5.4	≥ 439 V

3.3 INSTRUMENTATION

3.3.6 Containment Ventilation Isolation Instrumentation

LCO 3.3.6 The Containment Ventilation Isolation instrumentation for each Function in Table 3.3.6-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6-1

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One radiation monitoring channel inoperable.	A.1 Restore the affected channel to OPERABLE status.	4 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. --------------NOTE------------- Only applicable in MODE 1, 2, 3, or 4. ------------------------------------	-----------------------NOTE------------------------ For Required Action and associated Completion Time of Condition A not met, the containment pressure relief valves may be opened in compliance with the gaseous effluent monitoring instrumentation requirements in Part I of the ODCM. ---	
One or more Automatic Actuation Logic and Actuation Relays trains inoperable. <u>OR</u> Required Action and associated Completion Time of Condition A not met.	B.1 Enter applicable Conditions and Required Actions of LCO 3.6.3, "Containment Isolation Valves," for containment ventilation isolation valves made inoperable by isolation instrumentation.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. --------------NOTE------------ Only applicable during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment. ---------------------------------- Required Action and associated Completion Time for Condition A not met.	----------------------NOTE----------------------- The containment pressure relief valves may be opened in compliance with the gaseous effluent monitoring instrumentation requirements in Part I of the ODCM. --- C.1 Place and maintain containment ventilation valves in closed position. OR C.2 Enter applicable Conditions and Required Actions of LCO 3.9.4, "Containment Penetrations," for containment ventilation isolation valves made inoperable by isolation instrumentation.	 Immediately Immediately

SURVEILLANCE REQUIREMENTS

--NOTE--
Refer to Table 3.3.6-1 to determine which SRs apply for each Containment Ventilation Isolation Function.

SURVEILLANCE		FREQUENCY
SR 3.3.6.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.2	Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.6.3	Perform MASTER RELAY TEST.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.6.4	Perform COT.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.6.5	Perform SLAVE RELAY TEST.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.6.6	Not Used.	
SR 3.3.6.7	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program.

Table 3.3.6-1 (page 1 of 1)
Containment Ventilation Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT
1. Manual Initiation	1, 2, 3, 4	Refer to LCO 3.3.2 “ESFAS Instrumentation,” Functions 2.a and 3.a.1, respectively for all initiation functions and requirements.		
2. Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4	2 trains	SR 3.3.6.2 SR 3.3.6.3 SR 3.3.6.5	NA
3. Containment Radiation				
a. Gaseous	1, 2, 3, 4, (b), (c)	1	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7	(a)
4. Containment Isolation - Phase A	Refer to LCO 3.3.2, “ESFAS Instrumentation,” Function 3.a, for all initiation functions and requirements.			

(a) Must satisfy Gaseous Effluent Dose Rate Requirements in Part I of the ODCM.
(b) During CORE ALTERATIONS.
(c) During movement of irradiated fuel assemblies within containment.

3.3 INSTRUMENTATION

3.3.7 Control Room Emergency Filtration System (CREFS) Actuation Instrumentation

LCO 3.3.7 The CREFS actuation instrumentation for each Function in Table 3.3.7-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.7-1

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one channel or train inoperable.	A.1 Place the affected CREFS train(s) in emergency recirculation mode.	7 days
	<u>OR</u>	
	A.2 --------------------NOTE-------------------- Applicable only to Functions 3a and 3b. -- Secure the Control Room makeup air supply fan from the affected air intake.	7 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more Functions with two channels or two trains inoperable.	B.1.1 Place one CREFS train in emergency recirculation mode.	Immediately
	AND	
	B.1.2 Enter applicable Conditions and Required Actions for one CREFS train made inoperable by inoperable CREFS actuation instrumentation	Immediately
	OR	
	B.2 -----------------NOTE------------------ Applicable only to Functions 3a and 3b. ---	
	Secure the Control Room makeup air supply fan from the affected air intake.	Immediately
C. Required Action and associated Completion Time for Condition A or B not met in MODE 1, 2, 3, or 4.	C.1 Be in MODE 3.	6 hours
	AND	
	C.2 Be in MODE 5.	36 hours
D. Required Action and associated Completion Time for Condition A or B not met in MODE 5 or 6, or during movement of irradiated fuel assemblies.	D.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	D.2 Suspend movement of irradiated fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

---NOTE--
Refer to Table 3.3.7-1 to determine which SRs apply for each CREFS Actuation Function.

SURVEILLANCE		FREQUENCY
SR 3.3.7.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.7.2	Perform COT.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.7.3	Not Used.	
SR 3.3.7.4	Not Used.	
SR 3.3.7.5	Not Used.	
SR 3.3.7.6	----------------------------------NOTE---------------------------------- Verification of setpoint is not required. --- Perform TADOT.	In accordance with the Surveillance Frequency Control Program.
SR 3.3.7.7	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program.

Table 3.3.7-1 (page 1 of 1)
CREFS Actuation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT
1. Manual Initiation	1, 2, 3, 4, 5, and 6, (a)	2 trains	SR 3.3.7.6	NA
2. Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4, 5, and 6, (a)	2 trains	SR 3.3.7.2	NA
3. Control Room Radiation				
a. Control Room Air North Intake	1, 2, 3, 4, 5, and 6, (a)	2	SR 3.3.7.1 SR 3.3.7.2 SR 3.3.7.7	1.4×10^{-4} μCi/ml
b. Control Room Air South Intake	1, 2, 3, 4, 5, and 6, (a)	2	SR 3.3.7.1 SR 3.3.7.2 SR 3.3.7.7	1.4×10^{-4} μCi/ml
4. Safety Injection	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 1, for all initiation functions and requirements.			

(a) During movement of irradiated fuel assemblies.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.1 RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits

LCO 3.4.1 RCS DNB parameters for pressurizer pressure, RCS average temperature, and RCS total flow rate shall be within the limits specified below:

a. Pressurizer pressure ≥ the limit specified in the COLR;

b. RCS average temperature ≤ the limit specified in the COLR; and

c. RCS total flow rate ≥ 389,700 gpm and ≥ the limit specified in the COLR.

APPLICABILITY: MODE 1

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

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

b. THERMAL POWER step > 10% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more RCS DNB parameters not within limits.	A.1 Restore RCS DNB parameter(s) to within limit.	2 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. --------------NOTE-------------- Only applicable prior to exceeding 85% RTP after a refueling outage. ------------------------------------ Measured RCS Flow not within limits.	B.1 Maintain THERMAL POWER less than 85% RTP.	Immediately
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.1.1	Verify pressurizer pressure is ≥ the limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.1.2	Verify RCS average temperature is ≤ the limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.1.3	Verify RCS total flow rate is ≥ 389,700 and ≥ the limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SR 3.4.1.4	-----------------------------------NOTE---------------------------------- Not required to be performed until after exceeding 85% RTP after each refueling outage. --	
	Verify by precision heat balance that RCS total flow rate is ≥ 389,700 and ≥ the limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.2 RCS Minimum Temperature for Criticality

LCO 3.4.2 Each operating RCS loop average temperature (T_{avg}) shall be ≥ 551°F.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. T_{avg} in one or more operating RCS loops not within limit.	A.1 Be in MODE 2 with $k_{eff} < 1.0$.	30 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.2.1	Verify RCS T_{avg} in each operating loop ≥ 551°F.	In accordance with the Surveillance Frequency Control Program.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 RCS Pressure and Temperature (P/T) Limits

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

APPLICABILITY: At all times

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. --------------NOTE-------------- Required Action A.2 shall be completed whenever this Condition is entered. -------------------------------------		
Requirements of LCO not met in MODE 1, 2, 3, or 4.	A.1 Restore parameter(s) to within limits.	30 minutes
	AND	
	A.2 Determine RCS is acceptable for continued operation.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 5 with RCS pressure < 500 psig.	36 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. --------------NOTE-------------- Required Action C.2 shall be completed whenever this Condition is entered. ----------------------------------		
Requirements of LCO not met any time in other than MODE 1, 2, 3, or 4.	C.1 Initiate action to restore parameter(s) to within limits.	Immediately
	AND	
	C.2 Determine RCS is acceptable for continued operation.	Prior to entering MODE 4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.3.1	----------------------------------NOTE---------------------------------- Only required to be performed during RCS heatup and cooldown operations and RCS inservice leak and hydrostatic testing. --	
	Verify RCS pressure, RCS temperature, and RCS heatup and cooldown rates are within the limits specified in the PTLR.	In accordance with the Surveillance Frequency Control Program.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.4 RCS Loops -- MODES 1 and 2

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

APPLICABILITY: MODES 1 and 2

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.4.1	Verify each RCS loop is in operation.	In accordance with the Surveillance Frequency Control Program.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.5 RCS Loops -- MODE 3

LCO 3.4.5 Two RCS loops shall be OPERABLE, and either:

a. Two RCS loops shall be in operation when the Rod Control System is capable of rod withdrawal; or

b. One RCS loop shall be in operation when the Rod Control System is not capable of rod withdrawal.

---NOTE---

All reactor coolant pumps may be removed from operation for ≤ 1 hour per 8 hour period provided:

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

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

APPLICABILITY: MODE 3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required RCS loop inoperable.	A.1 Restore required RCS loop to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 4.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One required RCS loop not in operation, with Rod Control System capable of rod withdrawal.	C.1 Restore required RCS loop to operation. OR C.2 Place the Rod Control System in a condition incapable of rod withdrawal.	1 hour 1 hour
D. Four RCS loops inoperable. OR No RCS loop in operation.	D.1 Place the Rod Control System in a condition incapable of rod withdrawal. AND D.2 Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet SDM of LCO 3.1.1. AND D.3 Initiate action to restore one RCS loop to OPERABLE status and operation.	Immediately Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.5.1	Verify required RCS loops are in operation.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.4.5.2	Verify steam generator secondary side water levels are ≥ 38% (Unit 1) and ≥ 10% (Unit 2) for required RCS loops.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.5.3	Verify correct breaker alignment and indicated power are available to the required pump that is not in operation.	In accordance with the Surveillance Frequency Control Program.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.6 RCS Loops – MODE 4

LCO 3.4.6 Two loops consisting of any combination of RCS loops and residual heat removal (RHR) loops shall be OPERABLE, and one loop shall be in operation.

---NOTES---

1. All reactor coolant pumps (RCPs) and RHR pumps may be removed from operation for ≤ 1 hour per 8 hour period provided:

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

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

2. No RCP shall be started with any RCS cold leg temperature ≤ 350°F unless the secondary side water temperature of each steam generator (SG) is ≤ 50°F above each of the RCS cold leg temperatures.

APPLICABILITY: MODE 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required loop inoperable.	A.1 Initiate action to restore a second loop to OPERABLE status. <u>AND</u> A.2 ---NOTE--- Only required if one RHR loop is OPERABLE --- Be in MODE 5.	Immediately 24 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Two required loops inoperable. OR No RCS or RHR loop in operation.	B.1 Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet SDM of LCO 3.1.1.	Immediately
	AND	
	B.2 Initiate action to restore one loop to OPERABLE status and operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	Verify one RHR or RCS loop is in operation.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.6.2	Verify SG secondary side water levels are ≥38% (Unit 1) and ≥10% (Unit 2) for required RCS loops.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.6.3	Verify correct breaker alignment and indicated power are available to the required pump that is not in operation.	In accordance with the Surveillance Frequency Control Program.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.7 RCS Loops -- MODE 5, Loops Filled

LCO 3.4.7 One residual heat removal (RHR) loop shall be OPERABLE and in operation, and either:

a. One additional RHR loop shall be OPERABLE; or

b. The secondary side water level of at least two steam generators (SGs) shall be $\geq$38% (Unit 1) and $\geq$10% (Unit 2).

---NOTES---

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

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

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

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

3. No reactor coolant pump shall be started with any RCS cold leg temperature ≤ 350°F unless the secondary side water temperature of each SG is ≤ 50°F above each of the RCS cold leg temperatures.

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

APPLICABILITY: MODE 5 with RCS loops filled

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.7.1	Verify one RHR loop is in operation.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.7.2	Verify SG secondary side water level is ≥38% (Unit 1) and ≥10% (Unit 2) in required SGs.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SR 3.4.7.3	Verify correct breaker alignment and indicated power are available to the required RHR pump that is not in operation.	In accordance with the Surveillance Frequency Control Program.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.8 RCS Loops -- MODE 5, Loops Not Filled

LCO 3.4.8 Two residual heat removal (RHR) loops shall be OPERABLE and one RHR loop shall be in operation.

-----NOTES-----

1. All RHR pumps may be removed from operation for ≤ 1 hour provided:

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

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

    c. No draining operations to further reduce the RCS water volume are permitted.

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

APPLICABILITY: MODE 5 with RCS loops not filled

-----NOTE-----

While this LCO is not met, entry into MODE 5, Loops Not Filled from MODE 5, Loops filled is not permitted.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR loop inoperable.	A.1 Initiate action to restore RHR loop to OPERABLE status.	Immediately
B. Required RHR loops inoperable. <u>OR</u> No RHR loop in operation.	B.1 Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet SDM of LCO 3.1.1.	Immediately
	<u>AND</u>	
	B.2 Initiate action to restore one RHR loop to OPERABLE status and operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.8.1	Verify one RHR loop is in operation.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.8.2	Verify correct breaker alignment and indicated power are available to the required RHR pump that is not in operation.	In accordance with the Surveillance Frequency Control Program.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 Pressurizer

LCO 3.4.9 The pressurizer shall be OPERABLE with:

a. Pressurizer water level ≤ 92%; and

b. Two groups of pressurizer heaters OPERABLE with the capacity of each group ≥ 150 kW.

APPLICABILITY: MODES 1, 2, and 3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Pressurizer water level not within limit.	A.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	A.2 Fully insert all rods.	6 hours
	<u>AND</u>	
	A.3 Place Rod Control System in a condition incapable of rod withdrawal.	6 hours
	<u>AND</u>	
	A.4 Be in MODE 4.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One required group of pressurizer heaters inoperable.	B.1 Restore required group of pressurizer heaters to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
C. Required Action and associated Completion Time of Condition B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	Verify pressurizer water level is ≤ 92%.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.9.2	Verify capacity of each required group of pressurizer heaters is ≥ 150 kW.	In accordance with the Surveillance Frequency Control Program.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Pressurizer Safety Valves

LCO 3.4.10 Three pressurizer safety valves shall be OPERABLE with lift settings ≥ 2410 psig and ≤ 2485 psig.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 with all RCS cold leg temperatures > 320°F

-----NOTE-----
The lift settings are not required to be within the LCO limits during MODES 3 and 4 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. This exception is allowed for 54 hours following entry into MODE 3 provided a preliminary cold setting was made prior to heatup.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One pressurizer safety valve inoperable.	A.1 Restore valve to OPERABLE status.	15 minutes
B. Required Action and associated Completion Time not met. OR Two or more pressurizer safety valves inoperable.	B.1 Be in MODE 3. AND B.2 Be in MODE 4 with any RCS cold leg temperatures ≤ 320°F.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.10.1	Verify each pressurizer safety valve is OPERABLE in accordance with the INSERVICE TESTING PROGRAM. Following testing, lift settings shall be within ± 1%.	In accordance with the INSERVICE TESTING PROGRAM

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 Pressurizer Power Operated Relief Valves (PORVs)

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

APPLICABILITY: MODES 1, 2, and 3

ACTIONS

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

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One block valve inoperable.	----------------------NOTE----------------------- Required Actions do not apply when block valve is inoperable solely as a result of complying with Required Actions B.2 or E.2. ---	
	C.1 Place associated PORV in manual control.	1 hour
	<u>AND</u>	
	C.2 Restore block valve 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.	D.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	D.2 Be in MODE 4	12 hours

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.11.1	-----------------------------------NOTES----------------------------------- 1. Not required to be performed with block valve closed in accordance with the Required Action of this LCO. 2. Not required to be performed prior to entry into MODE 3. --- Perform a complete cycle of each block valve.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.11.2	-----------------------------------NOTE----------------------------------- Not required to be performed prior to entry into MODE 3. --- Perform a complete cycle of each PORV.	In accordance with the Surveillance Frequency Control Program.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.12 Low Temperature Overpressure Protection (LTOP) System

LCO 3.4.12 An LTOP System shall be OPERABLE with a maximum of zero safety injection pumps and two charging pumps capable of injecting into the RCS and the accumulators isolated and one of the following pressure relief capabilities:

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

b. Two residual heat removal (RHR) suction relief valves with setpoints ≥ 436.5 psig and ≤ 463.5 psig, or

c. One PORV with a lift setting within the limits specified in the PTLR and one RHR suction relief valve with a setpoint ≥ 436.5 psig and ≤ 463.5 psig, or

d. The RCS depressurized and an RCS vent of ≥ 2.98 square inches.

---NOTE---
Accumulator may be unisolated when accumulator pressure is less than the maximum RCS pressure for the existing RCS cold leg temperature allowed by the P/T limit curves provided in the PTLR.

APPLICABILITY: MODE 4, MODE 5,
MODE 6 when the reactor vessel head is on

---NOTE---
The LCO is not applicable when all RCS cold leg temperatures are > 320°F and the following conditions are met:

a. At least one reactor coolant pump is in operation, and

b. Pressurizer level is ≤ 92%, and

c. The plant heatup rate is limited to 60°F in any one hour period.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more safety injection pumps capable of injecting into the RCS.	A.1 Initiate action to verify a maximum of zero safety injection pumps are capable of injecting into the RCS.	Immediately
B. Three charging pumps capable of injecting into the RCS.	B.1 Initiate action to verify a maximum of two charging pumps are capable of injecting into the RCS.	Immediately
C. An accumulator not isolated when the accumulator pressure is greater than or equal to the maximum RCS pressure for existing cold leg temperature allowed in the PTLR.	C.1 Isolate affected accumulator.	1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1 Increase RCS cold leg temperature to > 320°F. AND Verify at least one reactor coolant pump is in operation. AND Pressurizer level is ≤ 92%. AND The plant heatup rate is limited to 60°F in any one hour period.	12 hours
	OR	
	D.2 Increase RCS average temperature to > 350°F.	12 hours
	OR	
	D.3 Depressurize affected accumulator to less than the maximum RCS pressure for existing cold leg temperature allowed in the PTLR.	12 hours
E. One required RCS relief valve inoperable in MODE 4.	E.1 Restore required RCS relief valve to OPERABLE status.	7 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. One required RCS relief valve inoperable in MODE 5 or 6.	F.1 Restore required RCS relief valve to OPERABLE status.	24 hours
G. Two required RCS relief valves inoperable. OR Required Action and associated Completion Time of Condition A, B, D, E, or F not met. OR LTOP System inoperable for any reason other than Condition A, B, C, D, E, or F.	G.1 Depressurize RCS and establish RCS vent of ≥ 2.98 square inches.	8 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.12.1	Verify a maximum of zero safety injection pumps are capable of injecting into the RCS.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.12.2	Verify a maximum of two charging pumps are capable of injecting into the RCS.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.12.3	Verify each accumulator is isolated when accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed by the P/T limit curves provided in the PTLR.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.12.4	Verify RHR suction isolation valves are open for each required RHR suction relief valve.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.12.5	Verify required RCS vent $\geq$ 2.98 square inches open.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.12.6	Verify PORV block valve is open for each required PORV.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.12.7	Not Used.	
SR 3.4.12.8	---------------NOTE--------------- Not required to be performed until 12 hours after decreasing any RCS cold leg temperature to $\leq$ 350°F. ---------------------------------- Perform a COT on each required PORV, excluding actuation.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.12.9	Perform CHANNEL CALIBRATION for each required PORV actuation channel.	In accordance with the Surveillance Frequency Control Program.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.13 RCS Operational LEAKAGE

LCO 3.4.13 RCS operational LEAKAGE shall be limited to:

a. No pressure boundary LEAKAGE;

b. 1 gpm unidentified LEAKAGE;

c. 10 gpm identified LEAKAGE; and

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

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RCS operational LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE or primary to secondary LEAKAGE.	A.1 Reduce LEAKAGE to within limits.	4 hours
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> Pressure boundary LEAKAGE exists. <u>OR</u> Primary to secondary LEAKAGE not within limits	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.13.1	-----NOTES----- 1. Not required to be performed until 12 hours after establishment of steady state operation. 2. Not applicable to primary to secondary LEAKAGE. ---------- Verify RCS operational LEAKAGE is within limits by performance of RCS water inventory balance.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.13.2	-----NOTE----- Not required to be performed until 12 hours after establishment of steady state operation. ---------- Verify primary to secondary LEAKAGE is ≤150 gallons per day through any one SG.	In accordance with the Surveillance Frequency Control Program.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.14 RCS Pressure Isolation Valve (PIV) Leakage

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

APPLICABILITY: MODES 1, 2, and 3,
MODE 4, except valves in the residual heat removal (RHR) flow path when in, or during the transition to or from, the RHR mode of operation

ACTIONS

---NOTES---

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

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more flow paths with leakage from one or more RCS PIVs not within limit.	----------NOTE---------- Each valve used to satisfy Required Action A.1 and Required Action A.2 must have been verified to meet SR 3.4.14.1 and be in the reactor coolant pressure boundary or the high pressure portion of the system. ------------------------------	
	A.1 Isolate the high pressure portion of the affected system from the low pressure portion by use of one closed manual, deactivated automatic, or check valve.	4 hours
	AND	
	A.2.1 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
	OR	
	A.2.2 Restore RCS PIV to within limits.	72 hours
B. Required Action and associated Completion Time for Condition A not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 5.	36 hours
C. RHR System interlock function inoperable.	C.1 Isolate the affected penetration by use of one closed manual or deactivated automatic valve.	4 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.14.1	-------------------------------NOTES------------------------------- 1. Not required to be performed in MODES 3 and 4. 2. Not required to be performed on the RCS PIVs located in the RHR flow path when in the shutdown cooling mode of operation. 3. RCS PIVs actuated during the performance of this Surveillance are not required to be tested more than once if a repetitive testing loop cannot be avoided. --	
	Verify leakage from each RCS PIV is equivalent to ≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm at an RCS pressure ≥ 2215 psig and ≤ 2255 psig.	In accordance with the INSERVICE TESTING PROGRAM, and in accordance with the Surveillance Frequency Control Program. <u>AND</u> Prior to entering MODE 2 whenever the unit has been in MODE 5 for 7 days or more, and if leakage testing has not been performed in the previous 9 months except for valves 8701A, 8701B, 8702A and 8702B <u>AND</u> Within 24 hours following check valve actuation due to flow through the valve

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.4.14.2	Verify RHR System interlock prevents the valves from being opened with a simulated or actual RCS pressure signal ≥ 442 psig, except when the valves are open to satisfy LCO 3.4.12.	In accordance with the Surveillance Frequency Control Program.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.15 RCS Leakage Detection Instrumentation

LCO 3.4.15 The following RCS leakage detection instrumentation shall be OPERABLE:

a. One containment sump (level or discharge flow) monitor,

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

c. One containment air cooler condensate flow rate monitor.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required containment atmosphere radioactivity monitor inoperable.	B.1.1 Analyze grab samples of the containment atmosphere.	Once per 24 hours
	<u>OR</u>	
	B.1.2 ------------------NOTE------------------ Not required until 12 hours after establishment of steady state operation. --	
	Perform SR 3.4.13.1.	Once per 24 hours
	<u>AND</u>	
	B.2.1 Restore required containment atmosphere radioactivity monitor to OPERABLE status.	30 days
	<u>OR</u>	
	B.2.2 Verify containment air cooler condensate flow rate monitor is OPERABLE.	30 days
C. Containment air cooler condensate flow rate monitor inoperable.	C.1 Perform SR 3.4.15.1.	Once per 8 hours
	<u>OR</u>	
	C.2 ------------------NOTE------------------ Not required until 12 hours after establishment of steady state operation. --	
	Perform SR 3.4.13.1.	Once per 24 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
----------------NOTE---------------- Only applicable when the containment atmosphere gaseous radiation monitor is the only OPERABLE monitor. --	D.1 Analyze grab samples of the containment atmosphere.	Once per 12 hours
D. Required containment sump monitor inoperable.	AND	
AND	D.2.1 Restore required containment sump monitor to OPERABLE status.	7 days
Containment air cooler condensate flow rate monitor inoperable.	OR	
	D.2.2 Restore containment air cooler condensate flow rate monitor to OPERABLE status.	7 days
E. Required containment atmosphere radioactivity monitor inoperable.	E.1 Restore required containment atmosphere radioactivity monitor to OPERABLE status.	30 days
AND	OR	
Containment air cooler condensate flow rate monitor inoperable.	E.2 Restore containment air cooler condensate flow rate monitor to OPERABLE status.	30 days
F. Required Action and associated Completion Time not met.	F.1 Be in MODE 3.	6 hours
	AND	
	F.2 Be in MODE 5.	36 hours
G. All required monitors inoperable.	G.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.15.1	Perform CHANNEL CHECK of the required containment atmosphere particulate and gaseous radioactivity monitors.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.15.2	Perform COT of the required containment atmosphere particulate and gaseous radioactivity monitors.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.15.3	Perform CHANNEL CALIBRATION of the required Containment Sump Level and Flow Monitoring System.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.15.4	Perform CHANNEL CALIBRATION of the required containment atmosphere particulate and gaseous radioactivity monitors.	In accordance with the Surveillance Frequency Control Program.
SR 3.4.15.5	Perform CHANNEL CALIBRATION of the required containment air cooler condensate flow rate monitor.	In accordance with the Surveillance Frequency Control Program.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 RCS Specific Activity

LCO 3.4.16 RCS DOSE EQUIVALENT I-131 and DOSE EQUIVALENT XE-133 specific activity shall be within limits.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DOSE EQUIVALENT I-131 not within limit.	----------NOTE---------- LCO 3.0.4.c is applicable. -------------------------	
	A.1 Verify DOSE EQUIVALENT I-131 $\leq$ 60 μCi/gm.	Once per 4 hours
	AND	
	A.2 Restore DOSE EQUIVALENT I-131 to within limit.	48 hours
B. DOSE EQUIVALENT XE-133 not within limit.	B.1 ----------NOTE---------- LCO 3.0.4.c is applicable. -------------------------	
	Restore DOSE EQUIVALENT XE-133 to within limit.	48 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met. OR DOSE EQUIVALENT I-131 > 60 μCi/gm.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.16.1	-----NOTE----- Only required to be performed in MODE 1. ---------- Verify reactor coolant DOSE EQUIVALENT XE-133 specific activity ≤ 500 μCi/gm.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.4.16.2	------------------------------NOTE------------------------------ Only required to be performed in MODE 1. -- Verify reactor coolant DOSE EQUIVALENT I-131 specific activity ≤ 0.45 μCi/gm.	In accordance with the Surveillance Frequency Control Program. AND Between 2 and 6 hours after a THERMAL POWER change of ≥ 15% RTP within a 1 hour period
SR 3.4.16.3	DELETED	DELETED

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.17 Steam Generator (SG) Tube Integrity

LCO 3.4.17 SG tube integrity shall be maintained.

AND

All SG tubes satisfying the tube plugging criteria shall be plugged in accordance with the Steam Generator Program.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

-----NOTES-----
Separate Condition entry is allowed for each SG tube.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more SG tubes satisfying the tube plugging criteria and not plugged in accordance with the Steam Generator Program.	A.1 Verify tube integrity of the affected tube(s) is maintained until the next refueling outage or SG tube inspection.	7 days
	AND	
	A.2 Plug the affected tube(s) in accordance with the Steam Generator Program.	Prior to entering MODE 4 following the next refueling outage or SG tube inspection

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. OR SG tube integrity not maintained.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.17.1	Verify SG tube integrity in accordance with the Steam Generator Program.	In accordance with the Steam Generator Program
SR 3.4.17.2	Verify that each inspected SG tube that satisfies the tube plugging criteria is plugged in accordance with the Steam Generator Program.	Prior to entering MODE 4 following a SG tube inspection

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.1 Accumulators

LCO 3.5.1 Four ECCS accumulators shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One accumulator inoperable due to boron concentration not within limits.	A.1 Restore boron concentration to within limits.	72 hours
B. One accumulator inoperable for reasons other than Condition A.	B.1 Restore accumulator to OPERABLE status.	24 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Reduce RCS pressure to 1000 ≤ psig.	6 hours 12 hours
D. Two or more accumulators inoperable.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.1.1	Verify each accumulator isolation valve is fully open.	In accordance with the Surveillance Frequency Control Program.
SR 3.5.1.2	Verify borated water volume in each accumulator is ≥ 6119 gallons and ≤ 6597 gallons.	In accordance with the Surveillance Frequency Control Program.
SR 3.5.1.3	Verify nitrogen cover pressure in each accumulator is ≥ 623 psig and ≤ 644 psig.	In accordance with the Surveillance Frequency Control Program.
SR 3.5.1.4	Verify boron concentration in each accumulator is ≥ 2300 ppm and ≤ 2600 ppm.	In accordance with the Surveillance Frequency Control Program. <u>AND</u> ----------NOTE--------- Only required to be performed for affected accumulators --------------------------- Once within 6 hours after each solution volume increase of ≥ 101 gallons that is not the result of addition from the refueling water storage tank

SURVEILLANCE REQUIREMENTS (continued)

SR 3.5.1.5	Verify power is removed from each accumulator isolation valve operator when RCS pressure is > 1000 psig.	In accordance with the Surveillance Frequency Control Program.

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.2 ECCS -- Operating

LCO 3.5.2 Two ECCS trains shall be OPERABLE.

---NOTES---

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

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

APPLICABILITY: MODES 1, 2, and 3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One train inoperable because of the inoperability of a centrifugal charging pump.	A.1 Restore pump to OPERABLE status.	7 days <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more trains inoperable for reasons other than one inoperable centrifugal charging pump. AND At least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available.	B.1 Restore train(s) to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1	Verify the following valves are in the listed position with power to the valve operator removed. Number — Position — Function 8802 A&B — Closed — SI Pump to Hot Legs 8809 A&B — Open — RHR to Cold Legs 8835 — Open — SI Pump to Cold Legs 8840 — Closed — RHR to Hot Legs 8806 — Open — SI Pump Suction from RWST 8813 — Open — SI Pump Miniflow Valve	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SR 3.5.2.2	Verify each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program.
SR 3.5.2.3	Verify ECCS piping is full of water.	Prior to entry into MODE 3
SR 3.5.2.4	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.5.2.5	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.
SR 3.5.2.6	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.
SR 3.5.2.7	Verify, for each ECCS throttle valve listed below, each mechanical position stop is in the correct position. <u>Valve Number</u> 8810A 8816A 8822A 8810B 8816B 8822B 8810C 8816C 8822C 8810D 8816D 8822D	In accordance with the Surveillance Frequency Control Program.

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.3 ECCS -- Shutdown

LCO 3.5.3 One ECCS train shall be OPERABLE.

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

APPLICABILITY: MODE 4

ACTIONS

-----NOTE-----
LCO 3.0.4.b is not applicable to ECCS Centrifugal Pump subsystem.

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

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.5.3.1	The following SRs are applicable for all equipment required to be OPERABLE: SR 3.5.2.1 SR 3.5.2.4 SR 3.5.2.7	In accordance with applicable SRs

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.4 Refueling Water Storage Tank (RWST)

LCO 3.5.4 The RWST shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.4.1	-----NOTE----- Only required to be performed when ambient air temperature is < 40°F or > 120°F. ----- Verify RWST borated water temperature is ≥ 40°F and ≤ 120°F.	In accordance with the Surveillance Frequency Control Program.
SR 3.5.4.2	Verify RWST borated water volume is ≥ 473,731 gallons.	In accordance with the Surveillance Frequency Control Program.
SR 3.5.4.3	Verify RWST boron concentration is ≥ 2400 ppm and ≤ 2600 ppm.	In accordance with the Surveillance Frequency Control Program.

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.5 Seal Injection Flow

LCO 3.5.5 Reactor coolant pump seal injection flow shall be ≤ 40 gpm with RCS pressure ≥ 2215 psig and ≤ 2255 psig and the charging flow control valve full open.

APPLICABILITY: MODES 1, 2, and 3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Seal injection flow not within limit.	A.1 Adjust manual seal injection throttle valves to give a flow within limit with RCS pressure ≥ 2215 psig and ≤ 2255 psig and the charging flow control valve full open.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.5.5.1	-------------------------------NOTE------------------------------- Not required to be performed until 4 hours after the Reactor Coolant System pressure stabilizes at ≥ 2215 psig and ≤ 2255 psig. --	
	Verify manual seal injection throttle valves are adjusted to give a flow within limit with RCS pressure ≥ 2215 psig and ≤ 2255 psig and the charging flow control valve full open.	In accordance with the Surveillance Frequency Control Program.

3.6 CONTAINMENT SYSTEMS

3.6.1 Containment

LCO 3.6.1 Containment shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment inoperable.	A.1 Restore containment to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.1	Perform required visual examinations and leakage rate testing except for containment air lock testing, in accordance with the Containment Leakage Rate Testing Program.	In accordance with the Containment Leakage Rate Testing Program

3.6 CONTAINMENT SYSTEM

3.6.2 Containment Air Locks

LCO 3.6.2 Two containment air locks shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

--NOTES--

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment air locks with one 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
	AND	
	A.2 Lock the OPERABLE door closed in the affected air lock.	24 hours
	AND	
	A.3 --------------------NOTE--------------------- Air lock doors in high radiation areas may be verified locked closed by administrative means. --- Verify the OPERABLE door is locked closed in the affected air lock.	Once per 31 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more containment air locks with containment air lock interlock mechanism inoperable.	----------------------NOTES---------------------- 1. Required Actions B.1, B.2, and B.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered. 2. Entry and exit of containment is permissible under the control of a dedicated individual. ---	
	B.1 Verify an OPERABLE door is closed in the affected air lock.	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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more containment air locks inoperable for reasons other than Condition A or B.	C.1 Initiate action to evaluate overall containment leakage rate per LCO 3.6.1.	Immediately
	AND	
	C.2 Verify a door is closed in the affected air lock.	1 hour
	AND	
	C.3 Restore air lock to OPERABLE status.	24 hours OR In accordance with the Risk Informed Completion Time Program
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3.	6 hours
	AND	
	D.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

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

3.6 CONTAINMENT SYSTEMS

3.6.3 Containment Isolation Valves

LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

-----NOTE-----
Not applicable to Main Steam Safety Valves (MSSVs), Main Steam Isolation Valves (MSIVs), Feedwater Isolation Valves (FIVs) and Associated Bypass Valves, and Steam Generator Atmospheric Relief Valves (ARVs).

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

-----NOTES-----

1. Penetration flow path(s) except for 48 inch containment and 12 inch hydrogen purge valve flow paths may be unisolated intermittently under administrative controls.

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

3. Enter applicable Conditions and Required Actions for systems made inoperable by containment isolation valves.

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. --------------NOTE-------------- Only applicable to penetration flow paths with two containment isolation valves. ------------------------------------ One or more penetration flow paths with one containment isolation valve inoperable except for containment purge, hydrogen purge or containment pressure relief valve leakage not within limit.	A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.	4 hours OR In accordance with the Risk Informed Completion Time Program
	AND	
	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 administrative means. --- Verify the affected penetration flow path is isolated.	Once per 31 days following isolation for isolation devices outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. ---------------NOTE------------- Only applicable to penetration flow paths with two containment isolation valves. ------------------------------------- One or more penetration flow paths with two containment isolation valves inoperable except for containment purge, hydrogen purge or containment pressure relief valve leakage not within limit.	B.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. ---------------NOTE------------- Only applicable to penetration flow paths with only one containment isolation valve and a closed system. -------------------------------------	C.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
	<u>AND</u>	
One or more penetration flow paths with one containment isolation valve inoperable.	C.2 -------------------NOTES-------------------- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed or otherwise secured may be verified by administrative means. --- Verify the affected penetration flow path is isolated.	Once per 31 days following isolation
D. One or more penetration flow paths with one or more containment purge, hydrogen purge or containment pressure relief valves not within leakage limits.	D.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange. <u>AND</u>	24 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. (continued)	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 administrative means. --- Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment
	AND	
	D.3 Perform SR 3.6.3.7 for the resilient seal purge valves closed to comply with Required Action D.1.	Once per 92 days
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3.	6 hours
	AND	
	E.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.3.1	Verify each 48 inch Containment Purge and 12 inch Hydrogen Purge valve is sealed closed, except for one purge valve in a penetration flow path while in Condition D of this LCO.	In accordance with the Surveillance Frequency Control Program.
SR 3.6.3.2	Not used.	
SR 3.6.3.3	-------------------------------NOTES------------------------------- Valves and blind flanges in high radiation areas may be verified by use of administrative controls. -- Verify each containment isolation manual valve and blind flange that is located outside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	In accordance with the Surveillance Frequency Control Program.
SR 3.6.3.4	-------------------------------NOTES------------------------------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. The blind flange on the fuel transfer canal need not be verified closed except after each drainage of the canal. -- Verify each containment isolation manual valve and blind flange that is located inside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.6.3.5	Verify the isolation time of each automatic power operated containment isolation valve is within limits.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.3.6	Not used.	
SR 3.6.3.7	-------------------------------NOTE------------------------------- This surveillance is not required when the penetration flow path is isolated by a leak tested blank flange. --- Perform leakage rate testing for containment purge, hydrogen purge and containment pressure relief valves with resilient seals.	In accordance with the Surveillance Frequency Control Program.
SR 3.6.3.8	Verify each automatic containment isolation valve that is not locked, sealed or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.
SR 3.6.3.9	Not used.	
SR 3.6.3.10	Not used.	
SR 3.6.3.11	Not used.	
SR 3.6.3.12	Not used.	
SR 3.6.3.13	Not used.	

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure

LCO 3.6.4 Containment pressure shall be $\geq$ - 0.3 psig and $\leq$ + 1.3 psig.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.1	Verify containment pressure is within limits.	In accordance with the Surveillance Frequency Control Program.

3.6 CONTAINMENT SYSTEMS

3.6.5 Containment Air Temperature

LCO 3.6.5 Containment average air temperature shall be ≤ 120°F.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

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

SURVEILLANCE REQUIREMENTS

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

3.6 CONTAINMENT SYSTEMS

3.6.6 Containment Spray System

LCO 3.6.6 Two containment spray trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 84 hours
C. Two containment spray trains inoperable.	C.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.6.1	Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	In accordance with the Surveillance Frequency Control Program.
SR 3.6.6.2	Not used.	
SR 3.6.6.3	Not used.	
SR 3.6.6.4	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.6.5	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.
SR 3.6.6.6	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.
SR 3.6.6.7	Not used.	
SR 3.6.6.8	Verify each spray nozzle is unobstructed.	Following maintenance which could result in nozzle blockage

3.6 CONTAINMENT SYSTEMS

3.6.7 Spray Additive System

LCO 3.6.7 The Spray Additive System shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Spray Additive System inoperable.	A.1 Restore Spray Additive System to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 5.	84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.7.1	Verify the spray additive system ensures an equilibrium sump pH ≥ 7.1 using NaOH.	In accordance with the Technical Requirements Manual

3.6 CONTAINMENT SYSTEMS

3.6.8 Containment Sump

LCO 3.6.8 Two containment sumps shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more containment sumps inoperable for reasons other than Condition A.	B.1 --------------------NOTES------------------ 1. Enter applicable Conditions and Required Actions of LCO 3.5.2, “ECCS - Operating,” and LCO 3.5.3, “ECCS - Shutdown,” for emergency core cooling trains made inoperable by the containment sumps. 2. Enter applicable Conditions and Required Actions of LCO 3.6.6, “Containment Spray System,” for containment spray trains made inoperable by the containment sumps. --- Restore the containment sumps to OPERABLE status.	 72 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.8.1	Verify, by visual inspection, the containment sumps do not show structural damage, abnormal corrosion, or debris blockage.	In accordance with the Surveillance Frequency Control Program.

3.7 PLANT SYSTEMS

3.7.1 Main Steam Safety Valves (MSSVs)

LCO 3.7.1 Five MSSVs per steam generator shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more steam generators with one MSSV inoperable and the Moderator Temperature Coefficient (MTC) zero or negative at all power levels.	A.1 Reduce THERMAL POWER to ≤68% RTP.	4 hours

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

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

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

NUMBER OF OPERABLE MSSVs PER STEAM GENERATOR	MAXIMUM ALLOWABLE POWER (% RTP)
4	≤ 61
3	≤ 43
2	≤ 26

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

VALVE NUMBER				LIFT SETTING (psig ± 3%)
STEAM GENERATOR				
#1	#2	#3	#4	
MS-021	MS-058	MS-093	MS-129	1185
MS-022	MS-059	MS-094	MS-130	1195
MS-023	MS-060	MS-095	MS-131	1205
MS-024	MS-061	MS-096	MS-132	1215
MS-025	MS-062	MS-097	MS-133	1235

3.7 PLANT SYSTEMS

3.7.2 Main Steam Isolation Valves (MSIVs)

LCO 3.7.2 Four MSIVs shall be OPERABLE.

APPLICABILITY: MODE 1,
MODES 2 and 3 except when all MSIVs are closed and deactivated.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One MSIV inoperable in MODE 1.	A.1 Restore MSIV to OPERABLE status.	8 hours OR In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 2.	6 hours
C. --------------NOTE-------------- Separate Condition entry is allowed for each MSIV. ------------------------------------ One or more MSIV inoperable in MODE 2 or 3.	C.1 Close MSIV. AND C.2 Verify MSIV is closed.	8 hours Once per 7 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.2.1	-----------------------------------NOTE----------------------------------- Only required to be performed in MODES 1 and 2. --- Verify the isolation time of each MSIV is within limits.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.7.2.2	-----------------------------------NOTE----------------------------------- Only required to be performed in MODES 1 and 2. --- Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.

3.7 PLANT SYSTEMS

3.7.3 Feedwater Isolation Valves (FIVs) and Feedwater Control Valves (FCVs) and Associated Bypass Valves

LCO 3.7.3 Four FIVs, four FCVs, and associated bypass valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3 except when FIV, FCV or associated bypass valve is either closed and de-activated or isolated by a closed manual valve.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more FIVs inoperable.	A.1 Close or isolate FIV.	72 hours
	<u>AND</u>	
	A.2 Verify FIV is closed or isolated.	Once per 7 days
B. One or more FCVs inoperable.	B.1 Close or isolate FCV.	72 hours
	<u>AND</u>	
	B.2 Verify FCV is closed or isolated.	Once per 7 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more FIV or FCV bypass valves inoperable.	C.1 Close or isolate bypass valve.	72 hours
	AND	
	C.2 Verify bypass valve is closed or isolated.	Once per 7 days
D. Two valves in the same flowpath inoperable	D.1 Isolate affected flow path.	8 hours
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3.	6 hours
	AND	
	E.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify the isolation time of each FIV, FCV, and associated bypass valves is within limits.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.7.3.2	Verify each FIV, FCV, and associated bypass valves actuates to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.

3.7 PLANT SYSTEMS

3.7.4 Steam Generator Atmospheric Relief Valves (ARVs)

LCO 3.7.4 Four ARV lines shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required ARV line inoperable.	A.1 Restore required ARV line to OPERABLE status.	7 days <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. Two required ARV lines inoperable.	B.1 Restore at least one ARV line to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Three or more required ARV lines inoperable.	C.1 Restore at least two ARV lines to OPERABLE status.	24 hours ------------NOTE------------ RICT entry is not permitted when a loss of function occurs. -------------------------------- OR In accordance with the Risk Informed Completion Time Program
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 4	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Verify one complete cycle of each ARV.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.7.4.2	Verify one complete cycle of each ARV block valve.	In accordance with the INSERVICE TESTING PROGRAM

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

LCO 3.7.5 Three AFW trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One steam supply to turbine driven AFW pump inoperable.	A.1 Restore steam supply to OPERABLE status.	7 days <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. One AFW train inoperable for reasons other than Condition A.	B.1 Restore AFW train to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time for Condition A or B not met. OR Two AFW trains inoperable.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	6 hours 18 hours
D. Three AFW trains inoperable.	D.1 -------------------NOTE------------------- LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one AFW train is restored to OPERABLE status. -- Initiate action to restore one AFW train to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.5.1	-------------------------------NOTE------------------------------- AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation. --	
	Verify each AFW manual, power operated, and automatic valve in each water flow path, and in both steam supply flow paths to the steam turbine driven pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.5.2	-------------------------------NOTE------------------------------- Not required to be performed for the turbine driven AFW pump until 24 hours after ≥ 532 psig in the steam generator. --	
	Verify the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.7.5.3	-------------------------------NOTE------------------------------- AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation. --	
	Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.5.4	-----NOTES----- 1. Not required to be performed for the turbine driven AFW pump until 24 hours after ≥ 532 psig in the steam generator. 2. AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW operation. ----- Verify each AFW pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.

3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tank (CST)

LCO 3.7.6 The CST level shall be ≥ 53%.

APPLICABILITY: MODES 1, 2, and 3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. CST level not within limit.	A.1 Verify by administrative means OPERABILITY of backup water supply.	4 hours <u>AND</u> Once per 12 hours thereafter
	<u>AND</u>	
	A.2 Restore CST level to within limit.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	B.2 Be in MODE 4	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify the CST level is ≥ 53%.	In accordance with the Surveillance Frequency Control Program.

3.7 PLANT SYSTEMS

3.7.7 Component Cooling Water (CCW) System

LCO 3.7.7 Two CCW trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CCW train inoperable.	-----------------------NOTE------------------------ Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for residual heat removal loops made inoperable by CCW. -- A.1 Restore CCW train to OPERABLE status.	 72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.7.1	----------NOTE---------- Isolation of CCW flow to individual components does not render the CCW System inoperable. ------------------------------ Verify each CCW manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.7.2	Verify each CCW automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.7.3	Verify each CCW pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.

3.7 PLANT SYSTEMS

3.7.8 Station Service Water System (SSWS)

LCO 3.7.8 Two SSWS trains and a SSW Pump on the opposite unit with its associated cross-connects shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required SSW Pump on the opposite unit or its associated cross-connects inoperable.	A.1 Restore a SSW Pump on the opposite unit to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
	AND A.2 Restore associated cross-connects to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One SSWS train inoperable.	--------------------NOTES------------------- 1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources -- Operating," for emergency diesel generator made inoperable by SSWS. 2. Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops -- MODE 4," for residual heat removal loops made inoperable by SSWS. ---	
	B.1 Restore SSWS train to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.8.1	-----------------------------NOTE----------------------------- Isolation of SSWS flow to individual components does not render the SSWS inoperable. -- Verify each SSWS manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.8.2	Verify one complete cycle of each required cross-connect valve that is not locked open.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.8.3	Verify each SSW pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.

3.7 PLANT SYSTEMS

3.7.9 Ultimate Heat Sink (UHS)

LCO 3.7.9 The Safe Shutdown Impoundment (SSI) shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SSI level less than required.	A.1 Restore SSI level to within limits.	7 days
B. Required Action and associated Completion Time of Condition A not met. OR SSI inoperable for reasons other than Condition A.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Verify water level of SSI is ≥ 770 ft mean sea level.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.9.2	Verify station service water intake temperature is ≤ 102°F.	In accordance with the Surveillance Frequency Control Program.

3.7 PLANT SYSTEMS

3.7.10 Control Room Emergency Filtration/Pressurization System (CREFS)

LCO 3.7.10 Two CREFS trains shall be OPERABLE

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

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREFS train inoperable for reasons other than Condition B.	A.1 Restore CREFS train to OPERABLE status.	7 days
B. One or more CREFS Trains inoperable due to inoperable CRE boundary in MODES 1, 2, 3, and 4.	B.1 Initiate action to implement mitigating actions.	Immediately
	<u>AND</u>	
	B.2 Verify mitigating actions to ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours
	<u>AND</u>	
	B.3 Restore CRE boundary to OPERABLE status.	90 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 5.	6 hours 36 hours
D. Required Action and associated Completion Time of Condition A not met in MODE 5 or 6, or during movement of irradiated fuel assemblies.	D.1 Place OPERABLE CREFS train in emergency recirculation mode. <u>OR</u> D.2.1 Suspend CORE ALTERATIONS. <u>AND</u> D.2.2 Suspend movement of irradiated fuel assemblies.	Immediately Immediately Immediately
E. Two CREFS trains inoperable in MODE 5 or 6, or during movement of irradiated fuel assemblies. <u>OR</u> One or more CREFS trains inoperable due to an inoperable CRE boundary in MODE 5 or 6, or during movement of irradiated fuel assemblies.	E.1 Suspend CORE ALTERATIONS. <u>AND</u> E.2 Suspend movement of irradiated fuel assemblies.	Immediately Immediately
F. Two CREFS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Operate each CREFS trains Emergency Pressurization Unit for ≥ 10 continuous hours with the heaters operating and Emergency Filtration Unit ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.10.2	Perform required CREFS testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.10.3	Verify each CREFS train actuates on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.10.4	Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program

3.7 PLANT SYSTEMS

3.7.11 Control Room Air Conditioning System (CRACS)

LCO 3.7.11 Two CRACS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRACS train inoperable.	A.1 Restore CRACS train to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours
C. Required Action and associated Completion Time of Condition A not met in MODE 5, or 6, or during movement of irradiated fuel assemblies.	C.1 Place OPERABLE CRACS train in operation. OR C.2.1 Suspend CORE ALTERATIONS. AND C.2.2 Suspend movement of irradiated fuel assemblies.	Immediately Immediately Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two CRACS trains inoperable in MODE 5 or 6, or during movement of irradiated fuel assemblies.	D.1.1 Verify at least 100% of the required heat removal capability equivalent to a single OPERABLE train available.	Immediately
	AND	
	D.1.2 Restore the CRACS trains to OPERABLE status.	30 days
	OR	
	D.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	D.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
E. Two CRACS trains inoperable in MODE 1, 2, 3, or 4.	E.1.1 Verify at least 100% of the required heat removal capability equivalent to a single OPERABLE train available.	Immediately
	AND	
	E.1.2 Restore one CRACS train to OPERABLE status.	30 days
	OR	
	E.2 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Verify each CRACS train has the capability to remove the assumed heat load.	In accordance with the Surveillance Frequency Control Program.

3.7 PLANT SYSTEMS

3.7.12 Primary Plant Ventilation System (PPVS) - ESF Filtration Trains

LCO 3.7.12 Two PPVS trains shall be OPERABLE

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. With one or more PPVS trains unable to maintain a negative pressure envelope in the Auxiliary, Safeguards, and Fuel Buildings ≥ 0.05 inch water gauge.	A.1 Restore PPVS trains to OPERABLE status.	30 days
B. With one or more PPVS trains unable to maintain a negative pressure envelope in the Auxiliary, Safeguards, and Fuel Buildings ≥ 0.01 inch water gauge.	B.1 Restore ability of PPVS trains to maintain a negative pressure envelope of ≥ 0.01 inch water gauge pressure.	7 days
C. One PPVS train inoperable for any reason except Conditions A or B.	C.1 Restore PPVS train to OPERABLE status.	7 days
D. Required Actions and associated Completion Times not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.12.1	Operate each ESF Filtration train for ≥ 10 continuous hours with the heaters operating.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.12.2	Perform required ESF Filtration Unit filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.12.3	Verify each PPVS train actuates on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.12.4	Verify one PPVS train can maintain a pressure ≤ -0.05 inches water gauge relative to atmospheric pressure during the post accident mode of operation.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.12.5	Not used.	
SR 3.7.12.6	Verify each PPVS non-ESF fan stops on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.

3.7 PLANT SYSTEMS

3.7.13 Fuel Building Air Cleanup System (FBACS)

NOT USED

3.7 PLANT SYSTEMS

3.7.14 Penetration Room Exhaust Air Cleanup System (PREACS)

NOT USED

3.7 PLANT SYSTEMS

3.7.15 Fuel Storage Area Water Level

LCO 3.7.15 The fuel storage area water level shall be ≥ 23 ft over the top of the storage racks

APPLICABILITY: During movement of irradiated fuel assemblies in a spent fuel storage area.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.15.1	Verify the fuel storage area water level is ≥ 23 ft above the top of the storage racks.	In accordance with the Surveillance Frequency Control Program.

3.7 PLANT SYSTEMS

3.7.16 Fuel Storage Pool Boron Concentration

LCO 3.7.16 The fuel storage pool boron concentration shall be $\geq$ 2400 ppm.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.16.1	Verify the fuel storage pool boron concentration is within limit.	In accordance with the Surveillance Frequency Control Program.

3.7 PLANT SYSTEMS

3.7.17 Spent Fuel Assembly Storage

LCO 3.7.17 New or spent fuel assemblies will be stored in compliance with Figure 3.7.17-1.

APPLICABILITY: Whenever any fuel assembly is stored in Region II racks of the spent fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 ------------------NOTE------------------ LCO 3.0.3 is not applicable. -- Initiate action to move fuel as necessary to restore compliance.	 Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.17.1	Verify by administrative means the acceptability of fuel movement plans and the resulting storage configuration in accordance with Figure 3.7.17-1.	Prior to moving a fuel assembly into any Region II storage location.

Figure 3.7.17-1 (page 1 of 3)
Spent Fuel Pool Loading Restrictions

All 2x2 Region II storage cell arrays shall comply with one of the Arrays Definitions below. Each storage location is a corner location for up to 4 separate 2x2 arrays.

A. Arrays II-A through II-E designate the pattern of fuel which may be stored in any 2x2 Array, and are dependent upon Fuel Category.

B. Fuel Categories 1-6 are determined based on Fuel Burnup, Initial Enrichment, Decay Time, and Fuel Group.

C. Fuel Group F1 assemblies have a nominal rod outer diameter of 0.374 inches. Fuel Group F2 assemblies have a nominal rod outer diameter of 0.360 inches.

<table>
<tr><th>Array Definition</th><th colspan="4">Illustration</th></tr>
<tr><td rowspan="2"><u>Array II-A</u>
Category 6 assembly in every cell. Only valid for two rows adjacent to the SFP wall. The two rows adjacent to Array II-A must be Array II-B, and the empty cell in Array II-B must be adjacent to Array II-A.</td><td rowspan="2">W
A
L
L</td><td>6</td><td>6</td><td rowspan="2">Array
II-B</td></tr>
<tr><td>6</td><td>6</td></tr>
<tr><td rowspan="2"><u>Array II-B</u>
Cateory 4 fuel assembly in 3 out of 4 cells, with empty cell in the fourth cell.</td><td colspan="2"></td><td>4</td><td>4</td></tr>
<tr><td colspan="2"></td><td>X</td><td>4</td></tr>
<tr><td rowspan="2"><u>Array II-C</u>
Pattern which contains fuel in 3 out of 4 cells, including two diagonally-opposed Category 5 assemblies, one Category 3 assembly, and one empty location. Only Fuel Group F2 assemblies may be stored in Array II-C.</td><td colspan="2"></td><td>5</td><td>3</td></tr>
<tr><td colspan="2"></td><td>X</td><td>5</td></tr>
<tr><td rowspan="2"><u>Array II-D</u>
Checkerboard pattern of two diagonally-opposed Category 2 assemblies with two diagonally-opposed empty cells.</td><td colspan="2"></td><td>2</td><td>X</td></tr>
<tr><td colspan="2"></td><td>X</td><td>2</td></tr>
<tr><td rowspan="2"><u>Array II-E</u>
1 out of 4 storage array, with 3 empty cells.</td><td colspan="2"></td><td>X</td><td>X</td></tr>
<tr><td colspan="2"></td><td>X</td><td>1</td></tr>
</table>

Figure 3.7.17-1 (page 2 of 3)

Notes:

1. Fuel Categories are ranked in order of relative reactivity, from Category 1 to 6. Fuel Category 1 assemblies have the highest reactivity, and Fuel Category 6 assemblies have the lowest.

2. All Fresh Fuel Assemblies (assemblies with a burnup value of 0.0 MWD/MTU) should be considered Category 1 fuel, independent of Fuel Group or Enrichment.

    a. In Fuel Group F1, Fuel Category 1 is fresh fuel up to 3.5 weight percent U-235 Initial Enrichment.

    b. In Fuel Group F2, Fuel Category 1 is fresh fuel up to 5.0 weight percent U-235 Initial Enrichment.

3. Fuel Category 2 is any Non-Fresh fuel assembly up to 3.5 weight percent U-235 Initial Enrichment (Burnup Requirement is > 0 MWD/MTU).

4. For all other fuel, Fuel Categories are determined as follows:

    a. For Initial Enrichment values below the Minimum Applicable Initial Enrichment values of Table 3.7.17-1, the Fitting Coefficients of Tables 3.7.17-2 and 3.7.17-3 are not applicable. The Minimum Burnup Requirement for the corresponding Category is > 0 MWD/MTU.

    b. For Fuel Group F1 assemblies, determine the Fitting Coefficients A_1 - A_4 using Table 3.7.17-2. Note that Table 3.7.17-2 is only applicable to fuel with $\geq$ 10 years of decay time, and an Initial Enrichment of $\leq$ 3.5 weight percent.

    c. For Fuel Group F2 assemblies, determine the Fitting Coefficients A_1 - A_4 using Table 3.7.17-3.

    d. The required Minimum Burnup value (in MWD/MTU) for each Fuel Category is calculated based on Initial Enrichment (En) and the appropriate fitting coefficients, using the equation below. If the fuel assembly burnup is greater than or equal to the calculated Minimum Burnup value, then the fuel may be classified into this Fuel Category.

    $$\text{Minimum Burnup} = 1{,}000 \times [A_1 \times En^3 + A_2 \times En^2 + A_3 \times En + A_4]$$

    e. All relevant uncertainties are explicitly included in the criticality analysis. No additional allowance for burnup uncertainty or initial enrichment uncertainty is required.

Figure 3.7.17-1 (page 3 of 3)

Notes (continued):

f. Conservatively low values of Decay Time may be used to calculate the Minimum Burnup value, or interpolation may be used. If interpolation is used, Minimum Burnup values for tabulated Decay Time values above and below the actual value should first be determined. Next, linear interpolation between these values may be used to determine the Minimum Burnup value. No extrapolation beyond 20 years is permitted.

g. Initial Enrichment (En) is the nominal U-235 weight percent enrichment of the central zone region of fuel, excluding axial blankets, prior to fuel depletion.

h. If the computed Minimum Burnup value ≤ 0 MWD/MTU, the Minimum Burnup Requirement is > 0 MWD/MTU.

5. In all Arrays, an assembly with a higher Fuel Category number can be utilized in place of any fuel assembly with a lower Fuel Category Number, with the following exception.

   a. Fuel Group F1 assemblies are not allowed to be stored in Array II-C, regardless of Fuel Category.

6. An empty (water-filled) cell can be substituted for any fuel-containing cell in all storage arrays.

7. Any storage array location designated for a fuel assembly can be replaced with non-fissile hardware. Items other than Fuel Assemblies which contain fissile material are restricted to storage in Region I.

8. Fuel assembly inserts approved for use in the reactor core can be inserted in a stored assembly (in the Spent Fuel Pool) without affecting the fuel category.

Table 3.7.17-1

Minimum Applicable Initial Enrichment for
Table 3.7.17-2 and Table 3.7.17-3 Fitting Coefficients

FUEL CATEGORY	FUEL GROUP F1	FUEL GROUP F2
6	1.25	1.20
5	N/A	1.30
4	1.35	1.45
3	N/A	1.45
2	N/A	3.55

Table 3.7.17-2

Fuel Group F1
Nominal Fuel Rod Outer Diameter of 0.374"

Coefficients to Calculate the Minimum Required Fuel Assembly Burnup (Bu)
as a Function of Decay Time and Initial Enrichment (En)

FUEL CATEGORY	DECAY (YRS)	FITTING COEFFICIENTS			
		A_1	A_2	A_3	A_4
6	10	1.4351	-17.3247	73.3805	-67.4585
6	15	1.7078	-18.7916	74.6322	-67.2637
6	20	0.5289	-9.9969	53.7741	-52.6302
4	10	-0.0444	-1.3474	22.7039	-28.0852
4	15	0.2015	-2.6257	24.1016	-28.2473
4	20	0.4646	-4.1432	26.3891	-29.2170

Note: Fuel must have at least 10 years of decay time and less than or equal to 3.5 weight percent Initial Enrichment to utilize Table 3.7.17-2

Table 3.7.17-3

Fuel Group F2
Nominal Fuel Rod Outer Diameter of 0.360"

Coefficients to Calculate the Minimum Required Fuel Assembly Burnup (Bu)
as a Function of Decay Time and Initial Enrichment (En)

FUEL CATEGORY	DECAY (YRS)	FITTING COEFFICIENTS			
		A_1	A_2	A_3	A_4
6	0	0.5789	-7.4498	42.4056	-41.1591
6	5	0.5247	-6.8992	39.7676	-38.6927
6	10	0.2701	-4.4306	31.9841	-32.4674
6	15	0.3105	-4.5582	31.1825	-31.3916
6	20	0.2374	-3.8754	28.8900	-29.4975
5	0	0.9373	-11.2553	54.7226	-54.1769
5	5	0.6169	-8.1494	44.7801	-45.7968
5	10	0.5380	-7.1852	40.7044	-41.9545
5	15	0.5385	-7.0180	39.2299	-40.3213
5	20	0.5200	-6.7906	38.0244	-39.0979
4	0	0.2553	-3.9826	30.6152	-36.7967
4	5	0.2366	-3.6430	28.2160	-33.9749
4	10	0.4387	-5.6018	33.3609	-37.9327
4	15	0.5450	-6.6302	36.0760	-40.0315
4	20	0.6327	-7.4663	38.2724	-41.7257
3	0	0.5317	-6.1006	32.7118	-36.2263
3	5	0.5228	-5.9434	31.2846	-34.4602
3	10	0.5432	-6.1075	31.1578	-33.9933
3	15	0.5206	-5.8897	30.1768	-32.9600
3	20	0.5158	-5.7796	29.4050	-32.0577
2	0	0.0000	1.6738	-8.5396	9.2206

3.7 PLANT SYSTEMS

3.7.18 Secondary Specific Activity

LCO 3.7.18 The specific activity of the secondary coolant shall be ≤ 0.10 μCi/gm DOSE EQUIVALENT I-131

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.18.1	Verify the specific activity of the secondary coolant is ≤ 0.10 μCi/gm DOSE EQUIVALENT I-131.	In accordance with the Surveillance Frequency Control Program.

3.7 PLANT SYSTEMS

3.7.19 Safety Chilled Water

LCO 3.7.19 Two safety chilled water trains shall be OPERABLE

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One safety chilled water train inoperable.	A.1 Restore safety chilled water train to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.19.1	-----------------------------NOTE----------------------------- Isolation of safety chilled water flow to individual components does not render the safety chilled water system inoperable. --- Verify each safety chilled water manual, power operated, and automatic valve servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	 In accordance with the Surveillance Frequency Control Program.
SR 3.7.19.2	Verify each safety chilled water pump and chiller starts on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.

3.7 PLANT SYSTEMS

3.7.20 UPS HVAC System

LCO 3.7.20 Two UPS HVAC System Trains shall be OPERABLE

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One UPS HVAC System train inoperable.	A.1 Verify the affected UPS & Distribution Room is supported by an OPERABLE UPS A/C Train.	Immediately
	AND	
	A.2 Restore the inoperable UPS HVAC train to OPERABLE status.	30 days
B. Two UPS HVAC System trains inoperable. OR Required Action A.1 and associated Completion Time not met.	B.1 Verify air circulation is maintained by at least one UPS A/C Train.	Immediately
	AND	
	B.2 Verify the air temperature in the affected UPS & Distribution Room(s) does not exceed the maximum temperature limit for the room(s).	12 hours AND Once per 12 hours thereafter
	AND	
	B.3 Restore UPS HVAC System train to OPERABLE status.	72 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action B.1 and associated Completion Time not met.	C.1 Restore the required support.	1 hour
D. Required Action and associated Completion Time of Required Action A.2, B.2, B.3 or C.1 not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.20.1	Verify each required UPS & Distribution Room Fan Coil Unit operates ≥ 1 continuous hour.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.20.2	Verify each required UPS A/C train operates for ≥ 1 continuous hour.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.20.3	Verify each required UPS A/C train actuates on an actual or simulated actuation signal.	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 sources shall be OPERABLE:

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

b. Two diesel generators (DGs) capable of supplying the onsite Class 1E power distribution subsystem(s); and

c. Automatic load sequencers for Train A and Train B.

APPLICABILITY: MODES 1, 2, 3, and 4

--NOTE--
One DG may be synchronized with the offsite power source under administrative controls for the purpose of surveillance testing.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 for required OPERABLE offsite circuit.	1 hour <u>AND</u> Once per 8 hours thereafter
	<u>AND</u>	
	A.2 --------------------NOTE-------------------- In MODES 1, 2 and 3, the TDAFW pump is considered a required redundant feature. --- Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)
	<u>AND</u>	
	A.3 Restore required offsite circuit to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One DG inoperable.	B.1 Perform SR 3.8.1.1 for the required offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND	
	B.2 --------------------NOTE-------------------- In MODES 1, 2 and 3, the TDAFW pump is considered a required redundant feature. -- Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.	 4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	AND	
	B.3.1 Determine OPERABLE DG(s) is not inoperable due to common cause failure.	24 hours
	OR	
	B.3.2 -------------------NOTE------------------- The SR need not be performed if the DG is already operating and loaded. -- Perform SR 3.8.1.2 for OPERABLE DG(s).	 24 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	AND	
	B.4 Restore DG to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
C. Two required offsite circuits inoperable.	C.1 --------------------NOTE-------------------- In MODES 1, 2 and 3, the TDAFW pump is considered a required redundant feature. --- Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition C concurrent with inoperability of redundant required features
	AND	
	C.2 Restore one required offsite circuit to OPERABLE status.	24 hours OR In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One required offsite circuit inoperable. <u>AND</u> One DG inoperable.	----------------------NOTE---------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition D is entered with no AC power source to any train. --	
	D.1 Restore required 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 DG to OPERABLE status.	12 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
E. Two DGs inoperable.	E.1 Restore one DG to OPERABLE status.	2 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. One SI sequencer inoperable.	F.1 --------------------NOTE-------------------- One required SI sequencer channel may be bypassed for up to 4 hours for surveillance testing provided the other channel is operable. -- Restore SI sequencer to OPERABLE status.	24 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
G. Required Action and associated Completion Time of Condition A, B, C, D, E, or F not met.	G.1 Be in MODE 3. <u>AND</u> G.2 Be in MODE 5.	6 hours 36 hours
H. Three or more required AC sources inoperable.	H.1 Enter LCO 3.0.3.	Immediately
I. One Blackout Sequencer inoperable	I.1 Declare associated DG inoperable	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each required offsite circuit.	In accordance with the Surveillance Frequency Control Program.
SR 3.8.1.2	---------------------------------NOTES--------------------------------- 1. Performance of SR 3.8.1.7 satisfies this SR. 2. All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. 3. A modified DG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. When modified start procedures are not used, the time, voltage, and frequency tolerances of SR 3.8.1.7 must be met. --- Verify each DG starts from standby conditions and achieves steady state voltage ≥ 6480 V and ≤ 7150 V, and frequency ≥ 59.9 Hz and ≤ 60.1 Hz.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.3	----------NOTES---------- 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.2 or SR 3.8.1.7. ------------------------------- Verify each DG is synchronized and loaded and operates for ≥ 60 minutes at a load ≥ 6300 kW and ≤ 7000 kW.	In accordance with the Surveillance Frequency Control Program.
SR 3.8.1.4	Verify each day tank contains ≥ 1440 gal of fuel oil.	In accordance with the Surveillance Frequency Control Program.
SR 3.8.1.5	Check for and remove accumulated water from each day tank.	In accordance with the Surveillance Frequency Control Program.
SR 3.8.1.6	Verify the fuel oil transfer system operates to automatically transfer fuel oil from storage tank to the day tank.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
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 ≤ 10 seconds, voltage ≥ 6480 V and frequency ≥ 58.8 Hz; and b. steady state, voltage ≥ 6480 V and ≤ 7150 V, and frequency ≥ 59.9 Hz and ≤ 60.1 Hz.	In accordance with the Surveillance Frequency Control Program.
SR 3.8.1.8	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. ------------------------------ Verify automatic and manual transfer of AC power sources from the normal offsite circuit to each alternate required offsite circuit.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.9	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. ------------------------------ Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ 66.75 Hz; and b. Within 3 seconds following load rejection, the voltage is ≥ 6480 V and ≤ 7150 V.	In accordance with the Surveillance Frequency Control Program.
SR 3.8.1.10	Verify each DG does not trip and voltage is maintained ≤ 8280 V during and following a load rejection of ≥ 6300 kW and ≤ 7000 kW.	In accordance with the Surveillance Frequency Control Program.

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 normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. --	
	Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤10 seconds, 2. energizes auto-connected shutdown loads through automatic load sequencer, 3. maintains steady state voltage ≥ 6480 V and ≤ 7150 V, 4. maintains steady state frequency ≥ 59.9 Hz and ≤ 60.1 Hz, and 5. supplies permanently connected and auto-connected shutdown loads for ≥ 5 minutes.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.12	----------------------------------NOTE---------------------------------- All DG starts may be preceded by prelube period. --- Verify on an actual or simulated Safety Injection (SI) actuation signal each DG auto-starts from standby condition and; a. in ≤ 10 seconds after auto-start and during tests, achieves voltage ≥ 6480 V and frequency ≥ 58.8 Hz; b. Achieves steady state voltage ≥ 6480 V and ≤ 7150 V and frequency ≥ 59.9 Hz and ≤ 60.1 Hz; c. Operates for ≥ 5 minutes.	In accordance with the Surveillance Frequency Control Program.
SR 3.8.1.13	Verify each DG's automatic trips are bypassed on actual or simulated (i) loss of voltage signal on the emergency bus, and (ii) SI actuation signal, except: a. Engine overspeed; and b. Generator differential current.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.14	-----------------------------------NOTE----------------------------------- Momentary transients outside the load and power factor ranges do not invalidate this test. --- Verify each DG operates for ≥ 24 hours: a. For ≥ 2 hours loaded ≥ 6900 kW and ≤ 7700 kW; and b. For the remaining hours of the test loaded ≥ 6300 kW and ≤ 7000 kW.	In accordance with the Surveillance Frequency Control Program.
SR 3.8.1.15	----------------------------------NOTES---------------------------------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ 2 hours loaded ≥ 6300 kW and ≤ 7000 kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. --- Verify each DG starts and achieves: a. in ≤ 10 seconds, voltage ≥ 6480 V and frequency ≥ 58.8 Hz; and b. steady state, voltage ≥ 6480 V and ≤ 7150 V and frequency ≥ 59.9 Hz and ≤ 60.1 Hz.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.16	-----------------------------------NOTE----------------------------------- This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. --- 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----------------------------------- This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. --- Verify, with a DG operating in test mode and connected to its bus, an actual or simulated SI actuation signal overrides the test mode by: a. Returning DG to ready-to-load operation; and b. Automatically energizing the emergency load from offsite power.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.18	------------------------------NOTE------------------------------ This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. -- Verify interval between each sequenced load block is within ± 10% of design interval for each automatic load sequencer.	In accordance with the Surveillance Frequency Control Program.

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 normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. ---	
	Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated SI actuation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in $\leq$ 10 seconds, 2. energizes auto-connected emergency loads through load sequencer, 3. achieves steady state voltage $\geq$ 6480 V and $\leq$ 7150 V, 4. achieves steady state frequency $\geq$ 59.9 Hz and $\leq$ 60.1 Hz, and 5. supplies permanently connected and auto-connected emergency loads for $\geq$ 5 minutes.	In accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.20	-----------------------------------NOTE----------------------------------- All DG starts may be preceded by an engine prelube period. --- Verify when started simultaneously from standby condition, each DG achieves: a. in ≤ 10 seconds, voltage ≥ 6480 V and frequency ≥ 58.8 Hz, and b. steady state, voltage ≥ 6480 V, and ≤ 7150 V and frequency ≥ 59.9 Hz and ≤ 60.1 Hz.	In accordance with the Surveillance Frequency Control Program.
SR 3.8.1.21	Calibrate BO sequencers.	In accordance with the Surveillance Frequency Control Program.
SR 3.8.1.22	---------------------------------NOTES--------------------------------- 1. Verification of setpoint is not required. 2. Actuation of final devices is not included. --- Perform TADOT for SI and BO sequencers.	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 required by LCO 3.8.10, "Distribution Systems -- Shutdown"; and

b. One diesel generator (DG) capable of supplying one train of the onsite Class 1E AC electrical power distribution subsystems required by LCO 3.8.10.

APPLICABILITY: MODES 5 and 6

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required offsite circuit inoperable.	------------------------NOTE------------------------ Enter applicable Conditions and Required Actions of LCO 3.8.10, with the required train de-energized as a result of Condition A. --	
	A.1 Declare affected required feature(s) with no offsite power available inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	<u>AND</u>	
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	<u>AND</u>	
	A.2.4 Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One required DG inoperable.	B.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	B.2 Suspend movement of irradiated fuel assemblies.	Immediately
	AND	
	B.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	
	B.4 Initiate action to restore required DG to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
---NOTE--- The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9 through SR 3.8.1.11, SR 3.8.1.14, SR 3.8.1.15, and SR 3.8.1.16.		
SR 3.8.2.1	For AC sources required to be OPERABLE, the following SRs are applicable: SR 3.8.1.1 SR 3.8.1.5 SR 3.8.1.10 SR 3.8.1.2 SR 3.8.1.6 SR 3.8.1.11 (except c.2) SR 3.8.1.3 SR 3.8.1.7 SR 3.8.1.14 SR 3.8.1.4 SR 3.8.1.9 SR 3.8.1.15 SR 3.8.1.16	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

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

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more DGs with fuel level < a 7 day supply and > a 6 day supply in storage tank.	A.1 Restore fuel oil level to within limits.	48 hours
B. One or more DGs with lube oil inventory < a 7 day supply and > a 2 day supply.	B.1 Restore lube oil inventory to within limits.	48 hours

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains ≥ a 7 day supply of fuel.	In accordance with the Surveillance Frequency Control Program.
SR 3.8.3.2	-----------------------------------NOTE----------------------------------- Not required to be performed until the engine has been shutdown for > 10 hours. --- Verify lubricating oil inventory is ≥ a 7 day supply	 In accordance with the Surveillance Frequency Control Program.
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.4	Verify each required DG air start receiver pressure is ≥ 180 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 Train A and Train B DC electrical power subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two required battery chargers on one train inoperable.	A.1 Restore affected battery(ies) terminal voltage to greater than or equal to the minimum established float voltage.	2 hours
	AND	
	A.2 Verify affected battery(ies) float current ≤ 2 amps.	Once per 12 hours
	AND	
	A.3 Restore required battery charger(s) to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or two batteries on one train inoperable.	B.1 Restore affected battery(ies) to OPERABLE status.	2 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
C. One DC electrical power subsystem inoperable for reasons other than Condition A or B.	C.1 Restore DC electrical power subsystem to OPERABLE status.	2 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
D. Required Action and Associated Completion Time not met.	D.1 Be in MODE 3. <u>AND</u> D.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is greater than or equal to the minimum established float voltage.	In accordance with the Surveillance Frequency Control Program.
SR 3.8.4.2	Verify each battery charger supplies ≥ 300 amps at greater than or equal to the minimum established charger test voltage for ≥ 8 hours. <u>OR</u> Verify each battery charger can recharge the battery to the fully charged state within 24 hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.	In accordance with the Surveillance Frequency Control Program.
SR 3.8.4.3	-----------------------------------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. Verify requirement during MODES 3, 4, 5, 6 or with core off-loaded. --- Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	In accordance with the Surveillance Frequency Control Program.

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources -- Shutdown

LCO 3.8.5 The Train A or Train B DC electrical power subsystem shall be OPERABLE to support one train of the DC electrical power distribution subsystems required by LCO 3.8.10, "Distribution Systems -- Shutdown."

APPLICABILITY: MODES 5 and 6

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required DC electrical power subsystems inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	AND	
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	
	A.2.4 Initiate action to restore required DC electrical power subsystem 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 Train A and Train B batteries shall be within limits.

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

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two batteries on one train with one or more battery cells float voltage < 2.07 V.	A.1 Perform SR 3.8.4.1 <u>AND</u> A.2 Perform SR 3.8.6.1 <u>AND</u> A.3 Restore affected cell(s) float voltage ≥ 2.07 V.	2 hours 2 hours 24 hours
B. One or two batteries on one train with float current > 2 amps.	B.1 Perform SR 3.8.4.1 <u>AND</u> B.2 Restore affected battery(ies) float current to ≤ 2 amps.	2 hours 12 hours

ACTIONS (continued)

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met. OR One or two batteries on one train with one or more battery cells float voltage < 2.07 V and float current > 2 amps.	F.1 Declare associated battery(ies) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.6.1	-----NOTE----- Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1 ---------- Verify each battery float current is ≤ 2 amps.	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.

SURVEILLANCE REQUIREMENTS (continued)

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

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.6.6	------------------------------NOTE------------------------------ Verify requirement during MODES 3, 4, 5, 6 or with core off-loaded. --- Verify battery capacity is ≥ 80 % of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	In accordance with the Surveillance Frequency Control Program. AND 18 months when battery shows degradation or has reached 85% of expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached 85% of the expected life with capacity ≥ 100% of manufacturer's rating

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters -- Operating

LCO 3.8.7 The required Train A and Train B inverters shall be OPERABLE.

---NOTE---
Inverters may be disconnected from one DC bus for ≤ 24 hours to perform an equalizing charge on their associated common battery, provided:

a. The associated AC vital bus(es) are energized; and

b. All other AC vital buses are energized from their associated OPERABLE inverters.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required inverter inoperable.	A.1 ---------------------NOTE-------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating" with any vital bus de-energized. -- Restore inverter to OPERABLE status.	24 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

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

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Inverters Shutdown

LCO 3.8.8 The Train A or Train B inverters shall be OPERABLE to support one train of the onsite Class 1E AC vital bus electrical power distribution subsystems required by LCO 3.8.10, "Distribution Systems -- Shutdown."

APPLICABILITY: MODES 5 and 6

ACTIONS

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

SURVEILLANCE REQUIREMENTS

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

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems -- Operating

LCO 3.8.9 Train A and Train B AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One AC electrical power distribution subsystem inoperable.	A.1 Restore AC electrical power distribution subsystem to OPERABLE status.	8 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. One AC vital bus subsystem inoperable.	B.1 Restore AC vital bus subsystem to OPERABLE status.	2 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

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

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems -- Shutdown

LCO 3.8.10 The necessary portion of the Train A or Train B AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE to support one train of equipment required to be OPERABLE.

APPLICABILITY: MODES 5 and 6

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required AC, DC, or AC vital 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.	Immediately
	<u>AND</u>	
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	<u>AND</u>	

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.4 Initiate actions to restore required AC, DC, and AC vital bus electrical power distribution subsystems to OPERABLE status. AND A.2.5 Declare associated required residual heat removal subsystem(s) inoperable and not in operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

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

3.9 REFUELING OPERATIONS

3.9.1 Boron Concentration

LCO 3.9.1 Boron concentrations of all filled portions of the Reactor Coolant System, the refueling canal, and the refueling cavity, that have direct access to the reactor vessel, shall be maintained within the limit specified in the COLR.

-----NOTE-----
While this LCO is not met, entry into MODE 6 from MODE 5 is not permitted.

APPLICABILITY: MODE 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Boron concentration not within limit.	A.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2 Suspend positive reactivity additions.	Immediately
	AND	
	A.3 Initiate action to restore boron concentration to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

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

3.9 REFUELING OPERATIONS

3.9.2 Unborated Water Source Isolation Valves

LCO 3.9.2 Each valve used to isolate unborated water sources shall be secured in the closed position.

APPLICABILITY: MODE 6.

ACTIONS

---NOTE---
Separate Condition entry is allowed for each unborated water source isolation valve.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. --------------NOTE-------------- Required Action A.4 must be completed whenever Condition A is entered. ------------------------------------ One or more valves not secured in closed position.	A.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2 Suspend positive reactivity addition.	Immediately
	<u>AND</u>	
	A.3 Initiate actions to secure valve in closed position.	Immediately
	<u>AND</u>	
	A.4 Perform SR 3.9.1.1.	4 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.9.2.1	Verify each valve that isolates unborated water sources is secured in the closed position.	In accordance with the Surveillance Frequency Control Program.

3.9 REFUELING OPERATIONS

3.9.3 Nuclear Instrumentation

LCO 3.9.3 Two source range neutron flux monitors shall be OPERABLE.

APPLICABILITY: MODE 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required source range neutron flux monitor inoperable.	A.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2 Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the boron concentration of LCO 3.9.1.	Immediately
B. Two required source range neutron flux monitors inoperable.	B.1 Initiate action to restore one source range neutron flux monitor to OPERABLE status.	Immediately
	AND	
	B.2 Perform SR 3.9.1.1.	Once per 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.3.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program.
SR 3.9.3.2	------------------------------NOTE------------------------------ Neutron detectors are excluded from CHANNEL CALIBRATION. --- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program.

3.9 REFUELING OPERATIONS

3.9.4 Containment Penetrations

LCO 3.9.4 The containment penetrations shall be in the following status:

a. The equipment hatch closed and held in place by four bolts, or if open, capable of being closed;

b. One door in the emergency air lock closed and one door in the personnel airlock capable of being closed; and

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

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

2. capable of being closed by an OPERABLE containment ventilation isolation valve.

-----NOTE-----
Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment penetrations not in required status.	A.1 Suspend CORE ALTERATIONS. <u>AND</u> A.2 Suspend movement of irradiated fuel assemblies within containment.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.4.1	Verify each required containment penetration is in the required status.	In accordance with the Surveillance Frequency Control Program.
SR 3.9.4.2	-------------------------------NOTE------------------------------- Only required for an open equipment hatch --- Verify the capability to install the equipment hatch.	In accordance with the Surveillance Frequency Control Program.
SR 3.9.4.3	Verify each required containment ventilation isolation valve actuates to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program.

3.9 REFUELING OPERATIONS

3.9.5 Residual Heat Removal (RHR) and Coolant Circulation -- High Water Level

LCO 3.9.5 One RHR loop shall be OPERABLE and in operation.

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

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RHR loop requirements not met.	A.1 Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the boron concentration of LCO 3.9.1.	Immediately
	AND	
	A.2 Suspend loading irradiated fuel assemblies in the core.	Immediately
	AND	
	A.3 Initiate action to satisfy RHR loop requirements.	Immediately
	AND	
	A.4 Close all containment penetrations providing direct access from containment atmosphere to outside atmosphere.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.5.1	Verify one RHR loop is in operation and circulating reactor coolant at a flow rate of ≥ 3800 gpm.	In accordance with the Surveillance Frequency Control Program.

3.9 REFUELING OPERATIONS

3.9.6 Residual Heat Removal (RHR) and Coolant Circulation -- Low Water Level

LCO 3.9.6 Two RHR loops shall be OPERABLE, and one RHR loop shall be in operation.

--NOTE--
While this LCO is not met, entry into a MODE or other specified condition in the Applicability is not permitted.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Less than the required number of RHR loops OPERABLE.	A.1 Initiate action to restore required RHR loops to OPERABLE status.	Immediately
	<u>OR</u>	
	A.2 Initiate action to establish ≥ 23 ft of water above the top of reactor vessel flange.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. No RHR loop in operation.	B.1 Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the boron concentration of LCO 3.9.1.	Immediately
	<u>AND</u>	
	B.2 Initiate action to restore one RHR loop to operation.	Immediately
	<u>AND</u>	
	B.3 Close all containment penetrations providing direct access from containment atmosphere to outside atmosphere.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.6.1	Verify one RHR loop is in operation and circulating reactor coolant at a flow rate of ≥ 1000 gpm.	In accordance with the Surveillance Frequency Control Program.
SR 3.9.6.2	Verify correct breaker alignment and indicated power available to the required RHR pump that is not in operation.	In accordance with the Surveillance Frequency Control Program.

3.9 REFUELING OPERATIONS

3.9.7 Refueling Cavity Water Level

LCO 3.9.7 Refueling cavity water level shall be maintained ≥ 23 ft above the top of reactor vessel flange.

APPLICABILITY: During movement of irradiated fuel assemblies within containment.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.7.1	Verify refueling cavity water level is ≥ 23 ft above the top of reactor vessel flange.	In accordance with the Surveillance Frequency Control Program.

4.0 DESIGN FEATURES

4.1 Site Location

The site area is approximately 7,700 acres located in Somervell County in North Central Texas. Squaw Creek Reservoir (SCR), established for station cooling, extends into Hood County. The site is situated along Squaw Creek, a tributary of the Paluxy River, which is a tributary of the Brazos River. The site is over 30 miles southwest of the nearest portion of Fort Worth and approximately 4.5 miles north-northwest of Glen Rose, the nearest community.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 193 fuel assemblies. Each assembly shall consist of a matrix of ZIRLO clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods 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 fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in non-limiting core regions.

4.2.2 Control Rod Assemblies

The reactor core shall contain 53 control rod assemblies. The control material shall be silver-indium-cadmium as approved by the NRC.

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:

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

b. $k_{eff} < 1.0$ when fully flooded with unborated water which includes an allowance for uncertainties as described in Section 4.3 of the FSAR;

c. $k_{eff} \leq 0.95$ if fully flooded with water borated to 400 ppm, which includes an allowance for uncertainties as described in Section 4.3 of the FSAR;

d. A nominal 9 inch center to center distance between fuel storage locations in Region II fuel storage racks;

e. A nominal 10.65 inch by nominal 11.05 inch center to center distance between fuel assemblies placed in Region I fuel storage racks;

f. New or partially spent fuel assemblies may be allowed restricted storage in a 1 out of 4 configuration in Region II fuel storage racks (as shown in Figure 3.7.17-1, Array II-E) or unrestricted storage in Region I fuel storage racks;

g. Storage of new or spent fuel assemblies in Region II storage racks must comply with 3.7.17 Spent Fuel Assembly Storage.

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

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

b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 4.3 of the FSAR;

c. $k_{eff} \leq 0.98$ if moderated by aqueous foam, which includes an allowance for uncertainties as described in Section 4.3 of the FSAR; and

4.0 DESIGN FEATURES

4.3 Fuel Storage (continued)

d. A nominal 21 inch center to center distance between fuel assemblies placed in the storage racks.

4.3.2 Drainage

The spent fuel storage pools are designed and shall be maintained to prevent inadvertent draining of the pool below elevation 854 ft.

4.3.3 Capacity

The spent fuel storage pools are designed and shall be maintained with a storage capacity limited to no more than 3373 fuel assemblies.

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

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

The Plant Manager or his designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affect nuclear safety.

5.1.2 The Shift Manager shall be responsible for the control room command function. During any absence of the Shift Manager from the control room while the unit is in MODE 1, 2, 3, or 4, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the Shift Manager from the control room while the unit is in MODE 5 or 6, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant.

a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements including the plant-specific titles of those personnel fulfilling the responsibilities of the positions delineated in these Technical Specifications shall be documented in the FSAR;

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

c. A specified corporate officer shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety; and

d. The individuals who train the operating staff, carry out health physics, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures.

5.2.2 Unit Staff

The unit staff organization shall include the following:

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

   With both units shutdown or defueled, a total of three non-licensed operators for the two units is required.

5.2 Organization

5.2.2 Unit Staff (continued)

b. Shift crew composition may be one less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.e for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

c. -- NOTE --
A single Radiation Protection Technician and a single Chemistry Technician may fulfill the requirements for both units.

A Radiation Protection Technician and Chemistry Technician shall be on site when fuel is in the reactor. The positions 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 positions.

d. The Shift Operations Manager shall hold an SRO license.

e. An individual shall provide advisory technical support to the unit operations shift crew in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. This shall be assigned to both units when either unit is in MODE 1, 2, 3, or 4. The STA position may be filled by the shift manager or an on-shift SRO providing the individuals meet the dual role qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.

5.0 ADMINISTRATIVE CONTROLS

5.3 Unit Staff Qualifications

5.3.1 Each member of the unit staff, with the exception of licensed Senior Reactor Operators (SRO) and licensed Reactor Operators (RO), shall meet or exceed the minimum qualifications of Regulatory Guide 1.8, Revision 2, 1987.

5.3.2 Licensed Senior Reactor Operators (SRO) and licensed Reactor Operators (RO) shall meet or exceed the minimum qualifications of Regulatory Guide 1.8, Revision 3, May 2000.

5.3.3 For the purposes of 10CFR55.4, a licensed Senior Reactor Operator (SRO) and a licensed reactor operator (RO) are those individuals who, in addition to meeting the requirements of TS 5.3.2, perform the functions described in 10CFR50.54(m).

5.0 ADMINISTRATIVE CONTROLS

5.4 Procedures

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

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

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

c. Quality assurance for effluent and environmental monitoring;

d. Fire Protection Program implementation; and

e. All programs specified in Specification 5.5.

5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

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

5.5.1 Offsite Dose Calculation Manual (ODCM)

a. The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program; and

b. The ODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities, and descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release Report required by Specification 5.6.2 and Specification 5.6.3.

c. Licensee initiated changes to the ODCM:

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

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

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

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

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

5.5 Programs and Manuals (continued)

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 post accident recirculation portion of the Containment Spray System, Safety Injection System, Chemical and Volume Control System, RHR System and RCS Sampling System (Post Accident Sampling System portion only 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; and

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

5.5.3 Not Used

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

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

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

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

5.5.4 Radioactive Effluent Controls Program (continued)

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

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

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

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

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

i. Limitations on the annual and quarterly doses to a member of the public, beyond the site boundary, from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half lives > 8 days in gaseous effluents released from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I; and

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

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

5.5.5 Component Cyclic or Transient Limit

This program provides controls to track the FSAR, Section 3.9N, cyclic and transient occurrences to ensure that components are maintained within the design limits.

5.5.6 Not used

5.5 Programs and Manuals

5.5.7 Reactor Coolant Pump Flywheel Inspection Program

This program shall provide for the inspection of each reactor coolant pump flywheel per the recommendations of Regulatory Position C.4.b of Regulatory Guide 1.14, Revision 1, August 1975. In lieu of Position C.4.b(1) and C.4.b(2), a qualified in-place UT examination over the volume from the inner bore of the flywheel to the circle one-half of the outer radius or a surface examination (MT and/or PT) of exposed surfaces of the removed flywheels may be conducted at 20 year intervals.

5.5.8 Deleted

5.5.9 Steam Generator (SG) Program

An SG Program shall be established and implemented to ensure that SG tube integrity is maintained. In addition, the SG Program shall include the following:

a. Provisions for condition monitoring assessments. Condition monitoring assessment means an evaluation of the “as found” condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The “as found” condition refers to the condition of the tubing during an SG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging of tubes. Condition monitoring assessments shall be conducted during each outage during which the SG tubes are inspected or plugged to confirm that the performance criteria are being met.

b. Performance criteria for SG tube integrity. SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational LEAKAGE.

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

5.5 Programs and Manuals

5.5.9 Steam Generator (SG) Program (continued)

with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

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

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

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

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

a. For Unit 2 only, tubes with service-induced flaws located greater than 14.01 inches below the top of the tubesheet do not require plugging. Tubes with service-induced flaws located in the portion of the tube from the top of the tubesheet to 14.01 inches below the top of the tubesheet shall be plugged upon detection.

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

5.5 Programs and Manuals

5.5.9 Steam Generator (SG) Program (continued)

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

2. For the Unit 1 model Delta-76 SGs (Alloy 690 thermally treated) after the first refueling outage following SG installation, inspect 100% of the tubes in each SG at least every 96 effective full power months, which defines the inspection period.

   For the Unit 2 model D5 SGs (Alloy 600 thermally treated) after the first refueling outage following SG installation, inspect 100% of the tubes in each SG at least every 54 effective full power months, which defines the inspection period. If none of the SG tubes have ever experienced cracking other than in regions that are exempt from inspection by alternate repair criteria and the SG inspection was performed with enhanced probes, the inspection period may be extended to 72 effective full power months. Enhanced probes have a capability to detect flaws of any type equivalent to or better than array probe technology. The enhanced probes shall be used from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet except any portions of the tube that are exempt from inspection by alternate repair criteria. If there are regions where enhanced probes cannot be used, the tube inspection techniques shall be capable of detecting all forms of existing and potential degradation in that region.

3. If crack indications are found in any SG tube excluding any region that is exempt from inspection by alternate repair criteria, then the next inspection for each affected and potentially affected SG for the degradation mechanism that caused the crack indications shall be at the next refueling outage, but for Unit 2, the next inspection may be deferred to the following refueling outage if the 100% inspection of all SGs was performed with enhanced probes as described in paragraph d.2. If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

e. Provisions for monitoring operational primary to secondary LEAKAGE.

5.5 Programs and Manuals

5.5.10 Secondary Water Chemistry Program

This program provides controls for monitoring secondary water chemistry to inhibit SG tube degradation and low pressure turbine disc stress corrosion cracking. The program shall include:

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

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

c. Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser in leakage;

d. Procedures for the recording and management of data;

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

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

5.5.11 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 and in accordance with Regulatory Guide 1.52, Revision 2, ANSI/ASME N509-1980, ANSI/ASME N510-1980, and ASTM D3803-1989.

--NOTE--
ANSI/ASME N510-1980, ANSI/ASME N509-1980, and ASTM D3803-1989 shall be used in place of ANSI 510-1975, ANSI/ASME N509-1976, and ASTM D3803-1979 respectively in complying with Regulatory Guide 1.52, Revision 2.
----

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 < 1.0% for Primary Plant Ventilation System - ESF Filtration units and < 0.05% for all other units when tested in accordance with Regulatory

5.5 Programs and Manuals

5.5.11 Ventilation Filter Testing Program (VFTP) (continued)

Guide 1.52, Revision 2, and ANSI/ASME N510-1980 at the system flowrate specified below ± 10%.

ESF Ventilation System	Flowrate
Control Room Emergency filtration unit	8,000 CFM
Control Room Emergency pressurization unit	800 CFM
Primary Plant Ventilation System – ESF filtration unit	15,000 CFM

b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass < 1.0% for Primary Plant Ventilation System - ESF Filtration units and < 0.05% for all other units when tested in accordance with Regulatory Guide 1.52, Revision 2, and ANSI/ASME N510-1980 at the system flowrate specified below ± 10%.

ESF Ventilation System	Flowrate
Control Room Emergency filtration unit	8,000 CFM
Control Room Emergency pressurization unit	800 CFM
Primary Plant Ventilation System - ESF filtration unit	15,000 CFM

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 greater than or equal to the relative humidity specified below.

ESF Ventilation Systems	Penetration	RH
Control Room Emergency filtration unit	0.5%	70%
Control Room Emergency pressurization unit	0.5%	70%
Primary Plant Ventilation System – ESF filtration unit	2.5%	70%

5.5 Programs and Manuals

5.5.11 Ventilation Filter Testing Program (VFTP) (continued)

d. Demonstrate at least once per 18 months for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below when tested in accordance with Regulatory Guide 1.52, Revision 2, and ANSI/ASME N510-1980 at the system flowrate specified below ± 10%

ESF Ventilation System	Delta P	Flowrate
Control Room Emergency filtration unit	8.0 in WG	8000 CFM
Control Room Emergency pressurization unit	9.5 in WG	800 CFM
Primary Plant Ventilation System – ESF filtration unit.	8.5 in WG	15000 CFM

e. Demonstrate at least once per 18 months that the heaters for each of the ESF systems dissipate the value specified below when tested in accordance with ANSI/ASME N510-1980.

ESF Ventilation System	Wattage
Control Room Emergency pressurization unit	10 ± 1 kW
Primary Plant Ventilation System - ESF filtration unit	100 ± 5 kW

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

5.5.12 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the Gaseous Waste Processing System, the quantity of radioactivity contained in each Gas Decay Tank, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks.

The gaseous radioactivity quantities shall be determined following the methodology in Branch Technical Position (BTP) ETSB 11-5, "Postulated Radioactive Release due to Waste Gas System Leak or Failure," Revision 0, July 1981. The liquid radwaste quantities shall be determined in accordance with Standard Review Plan, Section 15.7.3, "Postulated Radioactive Release due to Tank Failures," Revision 2, July 1981.

5.5 Programs and Manuals

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

The program shall include:

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

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

c. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System is less than the amount that would result in concentrations less than the limits of 10 CFR 20, Appendix B, Table 2, Column 2 to 10 CFR 20.1001 - 20.2402, at the nearest potable water supply and the nearest surface water supply in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

d. 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.

5.5.13 Diesel Fuel Oil Testing Program

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

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

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

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

3. a clear and bright appearance with proper color or a water and sediment content within limits.

5.5 Programs and Manuals

5.5.13 Diesel Fuel Oil Testing Program (continued)

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

c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days.

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

5.5.14 Technical Specifications (TS) Bases Control Program

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

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

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

2. a change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

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

d. Proposed changes that meet the criteria of Specification 5.5.14b 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) and exemptions thereto.

5.5.15 Safety Function Determination Program (SFDP)

a. This program ensures loss of safety function is detected and appropriate actions taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate actions may be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6. The SFDP shall contain the following:

5.5 Programs and Manuals

5.5.15 Safety Function Determination Program (SFDP) (continued)

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

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

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

4. Other appropriate limitations and remedial or compensatory actions.

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

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

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

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

c. The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. When a loss of safety function is caused by the inoperability of a single Technical Specification support system, the appropriate Conditions and Required Actions to enter are those of the support system.

5.5 Programs and Manuals

5.5.16 Containment Leakage Rate Testing Program

a. A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," Revision 3-A, dated July 2012, and the conditions and limitations specified in NEI 94-01, Revision 2A, dated October 2008, as modified by the following exceptions:

   1. The visual examination of containment concrete surfaces intended to fulfill the requirements of 10 CFR 50, Appendix J, Option B testing, will be performed in accordance with the requirements of and frequency specified by the ASME Section XI Code, Subsection IWL, except where relief has been authorized by the NRC.

   2. The visual examination of the steel liner plate inside containment intended to fulfill the requirements of 10 CFR 50, Appendix J, Option B, will be performed in accordance with the requirements of and frequency specified by the ASME Section XI Code, Subsection IWE, except where relief has been authorized by the NRC.

b. The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 48.3 psig.

c. The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.10% of containment air weight per day.

d. Leakage rate acceptance criteria are:

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

   2. Air lock testing acceptance criteria are:

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

      ii. For each door, leakage rate is $\leq 0.01\ L_a$ when pressurized to $\geq P_a$.

5.5 Programs and Manuals

5.5.16 Containment Leakage Rate Testing Program (continued)

e. The provision of SR 3.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program, with the exception of the containment ventilation isolation valves.

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

5.5.17 Technical Requirements Manual (TRM)

The TRM contains selected requirements which do not meet the criteria for inclusion in the Technical Specification but are important to the operation of CPNPP. Much of the information in the TRM was relocated from the TS.

Changes to the TRM shall be made under appropriate administrative controls and reviews. Changes may be made to the TRM without prior NRC approval provided the changes do not require either a change to the TS or NRC approval pursuant to 10 CFR 50.59. TRM changes require approval of the Plant Manager.

5.5.18 Configuration Risk Management Program (CRMP)

The Configuration Risk Management Program (CRMP) provides a proceduralized risk-informed assessment to manage the risk associated with equipment inoperability. The program applies to technical specification structures, systems, or components for which a risk-informed Completion Time has been granted. The program shall include the following elements:

a. Provisions for the control and implementation of a Level 1, at-power, internal events PRA-informed methodology. The assessment shall be capable of evaluating the applicable plant configuration.

b. Provisions for performing an assessment prior to entering the LCO Action for preplanned activities.

c. Provisions for performing an assessment after entering the LCO Action for unplanned entry into the LCO Action.

d. Provisions for assessing the need for additional actions after the discovery of additional equipment out of service conditions while in the LCO Action.

e. Provisions for considering other applicable risk significant contributors such as Level 2 issues, and external events, qualitatively or quantitatively.

5.5 Programs and Manuals

5.5.19 Battery Monitoring and Maintenance Program

This Program provides for restoration and maintenance, based on the recommendations of IEEE Standard 450, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," or of the battery manufacturer for 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 top of the plates.

5.5.20 Control Room Envelope Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Control Room Emergency Filtration System (CREFS), CRE occupants can control the reactor safety 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 whole body or its equivalent to any part of the body for the duration of the accident. The program shall include the following elements:

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

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

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

   The following are exceptions to Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0:

   1. C. - Section 4.3.2 "Periodic CRH Assessment" from NEI 99-03 Revision 1 will be used as input to a site specific Self Assessment procedure.

   2. C.1.2 - No peer reviews are required to be performed.

5.5 Programs and Manuals

5.5.20 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 train of the CREFS, operating at the flow rate required by the VFTP, at a Frequency of 18 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the 18 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 paragraphs c and d, respectively.

5.5.21 Surveillance Frequency Control Program

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

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

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

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

5.5 Programs and Manuals

5.5.22 Spent Fuel Storage Rack Neutron Absorber Monitoring Program

The Region I storage cells in the CPNPP Spent Fuel Pool utilize the neutron absorbing material BORAL, which is credited in the Safety Analysis to ensure the limitations of Technical Specification 4.3.1.1 are maintained.

In order to ensure the reliability of the Neutron Poison material, a monitoring program is required to routinely confirm that the assumptions utilized in the criticality analysis remain valid and bounding. The Neutron Absorber Monitoring Program is established to monitor the integrity of neutron absorber test coupons periodically as described below.

A test coupon "tree" shall be maintained in each SFP. Each coupon tree originally contained 8 neutron absorber surveillance coupons. Detailed measurements were taken on each of these 16 coupons prior to installation, including weight, length, width, thickness at several measurement locations, and B-10 content (g/cm^2). These coupons shall be maintained in the SFP to ensure they are exposed to the same environmental conditions as the neutron absorbers installed in the Region I storage cells, until they are removed for analysis.

One test coupon from each SFP shall be periodically removed and analyzed for potential degradation, per the following schedule. The schedule is established to ensure adequate coupons are available for the planned life of the storage racks.

Year	Coupon Number	Year	Coupon Number
2013	1	2028	5
2015	2	2033	6
2018	3	2043	7
2023	4	2053	8

Further evaluation of the absorber materials, including an investigation into the degradation and potential impacts on the Criticality Safety Analysis, is required if:

- A decrease of more than 5% in B-10 content from the initial value is observed in any test coupon as determined by neutron attenuation.

- An increase in thickness at any point is greater than 25% of the initial thickness at that point.

5.5 Programs and Manuals

5.5.23 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.

5.5 Programs and Manuals

5.5.23 Risk Informed Completion Time Program (continued)

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

5.0 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

-----NOTE-----
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

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 a format similar to 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

-----NOTE-----
A single submittal may be made for a multiple unit station. The submittal shall combine sections common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

The Radioactive Effluent Release Report covering the operation of the unit during the previous year shall be submitted prior to May 1 of each year in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR Part 50, Appendix I, Section IV.B.1.

5.6.4 Deleted

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. Moderator temperature coefficient limits for Specification 3.1.3.

2. Shutdown Rod Insertion Limit for Specification 3.1.5.

3. Control Rod Insertion Limits for Specification 3.1.6.

4. AXIAL FLUX DIFFERENCE Limits and target band for Specification 3.2.3.

5. Heat Flux Hot Channel Factor, K(Z), W(Z), F_Q^{RTP}, and the $F_Q^C(Z)$ allowances for Specification 3.2.1.

6. Nuclear Enthalpy Rise Hot Channel Factor Limit and the Power Factor Multiplier for Specification 3.2.2.

7. SHUTDOWN MARGIN values in Specifications 3.1.1, 3.1.4, 3.1.5, 3.1.6 and 3.1.8.

8. Refueling Boron Concentration limits in Specification 3.9.1.

9. Overtemperature N-16 Trip Setpoint in Specification 3.3.1.

10. Reactor Coolant System pressure, temperature, and flow in Specification 3.4.1.

11. Reactor Core Safety Limit (Safety Limit 2.1.1).

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC. When an initial assumed power level of 102 percent of rated power is specified in a previously approved method, 100.6 percent of rated power may be used only when feedwater flow measurement (used as input for reactor thermal power measurement) is provided by the leading edge flowmeter (LEFM√) as described in document number 3 listed below. When feedwater flow measurements from the LEFM√ are not available, the originally approved initial power level of 102 percent of rated thermal power shall be used.

5.6 Reporting Requirements

5.6.5 Core Operating Limits Report (COLR) (continued)

Future revisions of approved analytical methods listed in this technical specification that currently assume 102 percent of rated power shall include the condition given above allowing use of 100.6 percent of rated power in safety analysis methodology when the LEFM√ is used for feedwater flow measurement.

The approved analytical methods are described in the following documents:

1. WCAP-9272-P-A, "WESTINGHOUSE RELOAD SAFETY EVALUATION METHODOLOGY," July 1985 (W Proprietary).

2. WCAP-10216-P-A, Revision 1A, "RELAXATION OF CONSTANT AXIAL OFFSET CONTROL F_Q SURVEILLANCE TECHNICAL SPECIFICATION," February 1994 (W Proprietary).

3. Caldon, Inc. Engineering Report-80P, "Improving Thermal Power Accuracy and Plant Safety While Increasing Operating Power level Using the LEFM√ System," Revision 0, March 1997 and Caldon Engineering Report – 160P, "Supplement to Topical Report ER-80P; Basis for a Power Uprate With the LEFM√tm System," Revision 0, May 2000.

4. WCAP-10444-P-A, "Reference Core Report VANTAGE 5 Fuel Assembly," September 1985.

5. WCAP-15025-P-A, "Modified WRB-2 Correlation, WRB-2M, for Predicting Critical Heat Flux in 17x17 Rod Bundles for Modified LPD Mixing Vane Grids," April 1999.

6. WCAP-10360-P-A, "Westinghouse Fuel Assembly Reconstitution Evaluation Methodology," July, 1993.

7. WCAP-11397-P-A, "Revised Thermal Design Procedure," April 1989.

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

9. WCAP-14565-P-A, "VIPRE-01 Modeling and Qualification for Pressurized Water Reactor Non-LOCA Thermal-Hydraulic Safety Analysis," October 1999.

10. WCAP-14882-P-A, "RETRAN-02 Modeling and Qualification for Westinghouse Pressurized Water Reactor Non-LOCA Safety Analyses," April 1999.

5.6 Reporting Requirements

5.6.5 Core Operating Limits Report (COLR) (continued)

11. WCAP-16996-P-A, Revision 1, "Realistic LOCA Evaluation Methodology Applied to the Full Spectrum of Break Sizes (FULL SPECTRUM LOCA Methodology)," November 2016.

12. Not used.

13. Not used.

14. Not used.

15. WCAP-12472-P-A, "BEACON Core Monitoring and Operations Support System," August 1994.

16. WCAP-17661-P-A, Revision 1, "Improved RAOC and CAOC F_Q Surveillance Technical Specifications," February 2019.

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

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

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

1. Specification 3.4.3, "RCS Pressure and Temperature (P/T) Limits," and

2. Specification 3.4.12, "Low Temperature Overpressure Protection (LTOP) System."

b. The analytical methods used to determine the RCS pressure and temperature limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

5.6 Reporting Requirements

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

1. WCAP-14040-NP-A; “Methodology used to Develop Cold Overpressure Mitigating System Setpoints and RCS Heatup and Cooldown Limit Curves.”

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

5.6.7 Not used

5.6.8 PAM Report

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

5.6.9 Steam Generator Tube Inspection Report

A report shall be submitted within 180 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification 5.5.9, “Steam Generator (SG) Program.” The report shall include:

a. The scope of inspections performed on each SG;

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

c. For each degradation mechanism found:

1. The nondestructive examination techniques utilized;

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

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

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

5.6 Reporting Requirements

5.6.9 Steam Generator Tube Inspection Report (continued)

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

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

f. The results of any SG secondary side inspections;

g. For Unit 2, the primary to secondary leakage rate observed in each SG (if it is not practical to assign the leakage to an individual SG, the entire primary to secondary leakage should be conservatively assumed to be from one SG) during the cycle preceding the inspection which is the subject of the report;

h. For Unit 2, the calculated accident induced leakage rate from the portion of the tubes below 14.01 inches from the top of the tubesheet for the most limiting accident in the most limiting SG. In addition, if the calculated accident induced leakage rate from the most limiting accident is less than 3.16 times the maximum operational primary to secondary leakage rate, the report should describe how it was determined; and

i. For Unit 2, the results of monitoring for tube axial displacement (slippage). If slippage is discovered, the implications of the discovery and corrective action shall be provided.

5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

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

5.7.1 High Radiation Areas with Dose Rates not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation:

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

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

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

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

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

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

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

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

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

5.7 High Radiation Area

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

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

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

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

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

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

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

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

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

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

5.7 High Radiation Area

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

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

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

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

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

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

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

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

f. Such individual areas that are within a larger area , such as PWR containment, where no enclosure exists for the purpose of locking and where

5.7 High Radiation Area

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

no enclosure can reasonably be constructed around the individual area need not be controlled by a locked door or gate nor continuously guarded, but shall be barricaded, conspicuously posted, and a clearly visible flashing light shall be activated at the area as a warning device.

APPENDIX B
TO FACILITY OPERATING LICENSE NOS. NPF-87 & NPF-89

COMANCHE PEAK POWER COMPANY LLC
AND VISTRA OPERATIONS COMPANY LLC
COMANCHE PEAK NUCLEAR POWER PLANT UNITS 1 & 2
DOCKET NOS. 50-445 & 50-446

ENVIRONMENTAL PROTECTION PLAN
(NON RADIOLOGICAL)

COMANCHE PEAK NUCLEAR POWER PLANT
UNITS 1 & 2

ENVIRONMENTAL PROTECTION PLAN
(NON RADIOLOGICAL)

TABLE OF CONTENTS

Section — Page

1.0 Objectives of the Environmental Protection Plan 1-1

2.0 Environmental Protection Issues 2-1

2.1 Aquatic Issues 2-1

2.2 Terrestrial Issues 2-1

3.0 Consistency Requirements 3-1

3.1 Plant Design and Operation 3-1

3.2 Reporting Related to the TPDES Permit 3-1

3.3 Changes Required for Compliance with Other Environmental Regulations 3-2

4.0 Environmental Conditions 4-1

4.1 Unusual or Important Environmental Events 4-1

4.2 Environmental Monitoring 4-1

5.0 Administrative Procedures 5-1

5.1 Review and Audit 5-1

5.2 Records Retention 5-1

5.3 Changes in Environmental Protection Plan 5-1

5.4 Plant Reporting Requirements 5-1

1.0 Objectives of the Environmental Protection Plan

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

(1) Verify that the facility 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.

(2) Coordinate NRC requirements and maintain consistency with other Federal, State, and local requirements for environmental protection.

(3) Keep NRC informed of the environmental effects of facility construction and operation and of actions 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 TPDES permit.

2.0 Environmental Protection Issues

In the FES-OL, dated September 1981, the staff considered the environmental impacts associated with the operation of the two-unit Comanche Peak Nuclear Power Plant (CPNPP). 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

The aquatic issues identified by the State in the FES-OL were as follows:

(1) Effects of the intake structure on aquatic biota during operation (FES-OL Section 5.5.2.3).

(2) Effects of the circulating water chlorination system on aquatic biota during operation (FES-OL Sections 4.2.4.1, 5.3.4.1, and 5.11.3.1).

The second issue above, "Effects of the circulating water chlorination system on aquatic biota during operation (FES-OL Sections 4.2.4.1, 5.3.4.1, and 5.11.3.1)," no longer applies because the TPDES permit no longer requires that such a study be performed.

Aquatic matters are addressed by the effluent limitations and monitoring requirements contained in the effective TPDES permit issued by the Texas Commission on Environmental Quality. The NRC will rely on this agency for regulation of matters involving water quality and aquatic biota.

2.2 Terrestrial Issues

The terrestrial issue identified by the staff in the FES-OL was as follows:

(1) Potential impacts resulting from the use of groundwater by the station during operation (FES-OL Section 5.3.1.2).

NRC requirements with regard to the terrestrial issue are specified in Subsection 4.2 of this EPP.

3.0 Consistency Requirements

3.1 Plant Design and Operation

The licensee may make changes in station design or operation or perform tests or experiments affecting the environment provided such activities do not involve an unreviewed environmental question and do not involve a change in the EPP*. Changes in station design or operation or performance of tests or experiments which do not affect the environment are not subject to the requirements of this EPP. Activities governed by Subsection 3.3 are not subject to the requirements of this Section.

Before engaging in additional construction or operational activities which may significantly affect the environment, the licensee shall prepare and record an environmental evaluation of such activity. Activities are excluded from this requirement if all measurable nonradiological environmental effects are confined to the 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 activity and obtain prior NRC approval. 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 Subsection 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, in 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 facility 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 or constitute a decrease in the effectiveness of this EPP to meet the objectives specified in Section 1.0. The licensee shall include as part of the Annual Environmental Operating Report (per Subsection 5.4.1) brief descriptions, analyses, interpretations, and evaluations of such changes, tests, and experiments.

3.2 Reporting Related to the TPDES Permit

Changes to, or renewals of, the TPDES permit shall be reported to the NRC within 30 days following the date the change or renewal is approved. If a permit, in part or in its entirety, is appealed and stayed, the NRC shall be notified within 30 days following the date the stay is granted.

*This provision does not relieve the licensee of the requirements of 10 CFR 50.59.

The licensee shall notify the NRC of changes to the effective TPDES permit that are proposed by the licensee by providing NRC with a copy of the proposed change at the same time it is submitted to the permitting agency. The licensee shall provide the NRC with a copy of the application for renewal of the TPDES permit at the same time the application is submitted to the permitting agency.

3.3 Changes Required for Compliance with Other Environmental Regulations

Changes in plant design or operation and performance of tests or experiments which are required to achieve compliance with other Federal, State, and local environmental regulations are not subject to the requirements of Subsection 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 plant operation shall be recorded and reported to the NRC within 24 hours, followed by a written report per Subsection 5.4.2. The following are examples of such events: excessive bird impaction events, onsite plant or animal disease outbreaks, mortality or unusual occurrence of any species protected by the Endangered Species Act of 1973, fish kills, increase in nuisance organisms or conditions, and unanticipated or emergency discharge of waste water or chemical substances.

No routine monitoring programs are required to implement this condition.

4.2 Environmental Monitoring

4.2.1 Groundwater Levels and Station Water Use Monitoring

Groundwater levels in the onsite observation wells identified as OB-3 and OB-4 in the FES-OL (Figure 4-3) shall be monitored and recorded monthly when the groundwater pumpage rate by CPNPP is less than or equal to 30 gallons per minute (gpm) and weekly when the CPNPP average monthly rate exceeds 30 gpm for the previous month. Water levels shall be read and recorded on approximately the same day of the month when monitoring monthly and on the same day of the week when monitoring weekly (an aid in interpreting the results by minimizing the influence of cyclic water use patterns of the aquifer by others on the observed water levels).

A monthly record of the total number of gallons pumped from each of the onsite production wells shall be maintained, including an average monthly pumpage rate in gpm.

A monthly record showing the rate and total amount of surface water processed by the onsite water treatment facility shall be maintained by the licensee on a monthly basis. This record shall include the process rate in gallons per minute and the total amount in gallons.

The licensee shall include the results of this monitoring program as part of the Annual Operating Report (see Subsection 5.4.1).

4.2.2 Water Treatment Facility Outages Impact Assessment and Reporting

The following outage of the onsite water treatment facility shall be reported to the NRC if groundwater is used to supplement the supply of treated surface water during the outage:

(1) Routine or unplanned outages that exceed 30 consecutive days.

(2) Any outage of at least 24 hours duration, beginning with the third such outage in a calendar year, if these outages are accompanied by an increase in the monthly average groundwater pumpage to a rate exceeding 30 gpm. When it is determined that either

routine or unplanned outages will exceed 30 consecutive days and when the groundwater pumpage rate will be greater than 30 gpm when averaged over the outage period, the licensee will prepare and submit a report to the NRC within 15 days after a determination of the extended outage is made. This report shall include (1) a discussion of the reason for the extended outage, (2) the expected duration of the outage, (3) an estimate of the date or the time required to return the onsite water treatment facility to operation, (4) a determination of the potential for lowering the groundwater levels in offsite wells, (5) an assessment of the impact of the projected groundwater level decline, and (6) a proposed course of action to mitigate any adverse effects.

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 the results of audit activities shall be maintained and made available for inspection.

5.2 Records Retention

Records and logs relative to the environmental aspects of station operation shall be made and retained in a manner convenient for review and inspection. These records and logs shall be made available to NRC on request.

Records of modifications to station structures, systems, and components determined to potentially affect the continued protection of the environment shall be retained for the life of the station. All other records, data and logs relating to this EPP shall be retained for 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 license amendment incorporating the appropriate revision to the EPP.

5.4 Plant Reporting Requirements

5.4.1 Routine Reports

An Annual Environmental Operating Report describing implementation of this EPP for the previous year shall be submitted to the NRC prior to May 1 of each year. The initial report shall be submitted prior to May 1 of the year following issuance of the operating license. The period of the first report shall begin with the date of issuance of the operating license.

The report shall include summaries and analyses of the results of the environmental protection activities required by Subsection 4.2 of this EPP for the report period, including a comparison with related preoperational studies, operational controls (as appropriate), and previous nonradiological environmental monitoring reports, and an assessment of the observed impacts of plant operation on the environment. If harmful effects or evidence of trends toward irreversible damage to the environment are observed, the licensee shall provide a detailed analysis of the data and a proposed course of mitigating action.

The Annual Environmental Operating Report shall also include:

(1) A list of EPP noncompliances and the corrective actions taken to remedy them.

(2) A list of all changes in station design or operation, tests, and experiments made in accordance with Subsection 3.1 which involved a potentially significant unreviewed environmental question.

(3) A list of nonroutine reports submitted in accordance with Subsection 5.4.2.

(4) A summary list of TPDES permit-related reports relative to matters identified in Subsection 2.1 which were sent to the Texas Commission on Environmental Quality during the report period.

In the event that some results are not available by the report due date, the report shall be submitted noting and explaining the missing results. The missing results shall be submitted as soon as possible in a supplementary report.

5.4.2 Nonroutine Reports

A written report shall be submitted to the NRC within 30 days of occurrence of a nonroutine 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 require reports to other Federal, State or local agencies shall be reported in accordance with those reporting requirements in lieu of the requirements of this subsection. The NRC shall be provided with a copy of such a report at the same time it is submitted to the other agency.

APPENDIX "C"
deleted by
Amendment No. 94
dated
March 22, 2002

APPENDIX D

ADDITIONAL CONDITIONS

FACILITY OPERATING LICENSE NOS. NPF-87 AND NPF-89

TU Electric shall comply with the following conditions on the schedules noted below:

Amendment Number	Additional Conditions	Implementation Date
64 (Unit 1) 64 (Unit 2)	This amendment authorizes the relocation of certain Technical Specification requirements to licensee-controlled documents. Implementation of this amendment shall include the relocation of these technical specification requirements to the appropriate documents, as described in Table LG of Details Relocated from Current Technical Specifications, Table R of Relocated Current Technical Specifications, and Table LS of Less Restrictive Changes to Current Technical Specifications that are attached to the NRC staff's Safety Evaluation enclosed with this amendment.	The amendment shall be implemented within 180 days of its date of Issuance.
64 (Unit 1) 64 (Unit 2)	The schedule for the performance of new and revised Surveillance Requirements (SRs) shall be as follows: For SRs that are new in this amendment, the first performance is due at the end of the first surveillance interval that begins on the date of implementation of this amendment.	This condition shall be implemented within 180 days of its date of issuance.

Amendment Number	Additional Conditions	Implementation Date
64 (Unit 1) 64 (Unit 2)	For SRs that existed prior to this amendment whose intervals of performance are being reduced, the first reduced surveillance interval begins upon completion of the first surveillance performed after implementation of this amendment.	This condition shall be implemented within 180 days of its issuance.
	For SRs that existed prior to this amendment that have modified acceptance criteria, the first performance is due at the end of the first surveillance interval that began on the date the surveillance was last performed prior to the implementation of this amendment.	
	For SRs that existed prior to this amendment whose intervals of performance are being extended, the first extended surveillance interval begins upon completion of the last surveillance performed prior to implementation of this amendment.	