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

SOUTHERN CALIFORNIA EDISON COMPANY
SAN DIEGO GAS & ELECTRIC COMPANY
THE CITY OF RIVERSIDE, CALIFORNIA
THE CITY OF ANAHEIM, CALIFORNIA

DOCKET NO. 50-362

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 3

FACILITY OPERATING LICENSE

License No. NPF-15

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

   A. The application for licenses filed by the Southern California Edison Company, San Diego Gas and Electric Company, the City of Riverside, California add the City of Anaheim, California (the licensees), as amended, 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 San Onofre Nuclear Generating Station, Unit 3 (the facility), has been substantially completed in conformity with Construction Permit No. CPPR-98 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;

   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 regulations of the Commission set forth in 10 CFR Chapter I;

   E. The Southern California Edison Company* 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;

*The Southern California Edison Company is authorized to act as agent for the other co-owners and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

Correction letter of 5-8-2002

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

G. The issuance of this 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-15, subject to the condition 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.

2. Based on the foregoing findings, the Partial Initial Decision issued by the Atomic Safety and Licensing Board on January 11, 1982, and the Initial Decision issued by the Atomic Safety and Licensing Board on May 14, 1982 regarding this facility, Facility Operating License No. NPF-15 is hereby issued to the Southern California Edison Company, the San Diego Gas and Electric Company, the City of Riverside, California, and the City of Anaheim, California[1] to read as follows:

A. This license applies to the San Onofre Nuclear Generating Station, Unit 3, a pressurized water nuclear reactor and associated equipment (the facility), owned by the licensees. The facility is located in San Diego County, California, and is described in the Final Safety Analysis Report, as amended, through Amendment 30, and the Environmental Report, as amended, through Amendment 6.

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

(1). Southern California Edison Company, San Diego Gas and Electric Company, the City of Riverside, California, and the City of Anaheim, California[1] to possess the facility at the designated location in San Diego County, California, in accordance with the procedures and limitations set forth in this license;

(2) Southern California Edison Company (SCE), pursuant to Section 103 of the Act and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," to possess, use, and operate the facility at the designated location in San Diego County, California in accordance with the procedures and limitations set forth in this license.

Amendment No. ~~176~~,201

[1]The City of Anaheim has transferred its ownership interests in the facility, and entitlement to facility output, to Southern California Edison Company, except that it retains its ownership interests in its spent nuclear fuel and the facility's independent spent fuel storage installation located on the facility's site. In addition, the City of Anaheim retains financial responsibility for its spent fuel and for a portion of the facility's decommissioning costs. The City of Anaheim remains a licensee for purposes of its retained interests and liabilities.

(3) SCE, 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, as described in the Final Safety Analysis Report, as supplemented and amended;

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

(6) SCE, 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 San Onofre Nuclear Generating Station, Units 1 and 3 and by the decommissioning of San Onofre Nuclear Generating Station Unit 1.

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

(1) Maximum Power Level

Southern California Edison Company (SCE) is authorized to operate the facility at reactor core power levels not in excess of full power (3438 megawatts thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 219, are hereby incorporated in the license. Southern California Edison Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Antitrust Conditions

SCE shall comply with the antitrust conditions delineated in Appendix C to this license.

(4) Containment Tendon Surveillance (Section *3.8.1, SER, SSER #5)

Deleted by Amendment No. 26

(5) Environmental Qualification (Section 3.11, SER, SSER #3, SSER #4)

Deleted by Amendment No. 49

(6) High Burnup Fission Gas Release (Section 4.2.2.2, SER)

Deleted by Amendment No. 176

(7) Low Temperature Overpressurization Protection (Section 5.2.2.2, SER)

Deleted by Amendment No. 176

(8) Volume Control Tank Control Logic (Section 7.3.5, SSER #4)

Deleted by Amendment No. 176

(9) Compliance with Regulatory Guide 1.97 (Section 7.5.1, SER, SSER #5)

Deleted by Amendment No. 176

(10) Control System Failures (Section 7.7, SER, SSER #4)

Deleted by Amendment No. 176

(11) Diesel Generator Modifications (Section 8.3.1, SER)

Deleted by Amendment No. 176

(12) Fire Protection (Section 9.5.1, SER, SSER #4, SSER #5, Section 1.12, SSER #5; SE dated November 15, 1982; Revision 1 to Updated Fire Hazards Analysis Evaluation dated June 29, 1988)

SCE shall implement and maintain in effect all provisions of the approved fire protection program. This program shall be (1) as described in the Updated Fire Hazards Analysis through Revision 3 as revised by letters to the NRC dated May 31, July 22, and November 20, 1987 and January 21, February 22, and April 21, 1988; and (2) as approved in the NRC staff's Safety Evaluation Report (SER) (NUREG-0712) dated February 1981; Supplements 4 and 5 to the SER, dated January 1982 and February 1982, respectively; and the safety evaluation dated November 15, 1982; as supplemented and amended by the Updated Fire Hazards Analysis Evaluation for San Onofre 2 and 3, Revision 1 dated June 29, 1988. SCE may make

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

Correction letter of 5-8-2002

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.

(13) Turbine Disc Inspection (Section 10.2.2, SER)

Deleted by Amendment No. 176

(14) Radioactive Waste System (Section 11.1, SER, SSER #5)

Deleted by Amendment No. 176

(15) Purge System Monitors (Section 11.3, SER, SSER #5)

Deleted by Amendment No. 176

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

Deleted by Amendment No. 176

(17) NUREG-0737 Conditions (Section 22)

Deleted by Amendment No. 176

a. Procedures for Transients and Accidents (I.C.1, SSER #1, SSER #2, SSER #5)

Deleted by Amendment No. 176

b. Procedures for Verifying Correct Performance of Operating Activities (I.C.6, SSER #1)

Deleted by Amendment No. 176

c. Control Room Design Review (I.D.1, SSER #1)

Deleted by Amendment No. 176

d. Post Accident Sampling System (NUREG-0737 Item II.B.3)

Deleted by Amendment No. 169

e. Direct Indication of Safety Valve Position (II.D.3, SSER #1)

Deleted by Amendment No. 176

f. AFW Pump 48-hour Endurance Test (II.E.1.1, SSER #11)

Deleted by Amendment No. 176

g. Emergency Power Supply for Pressurizer Heaters (II.E.3.1, SSER #1, SSER #5)

Deleted by Amendment No. 176

h. ICC Instrumentation (II.F.2, SSER #1, SSER #2, SSER #4)

Deleted by Amendment No. 176

Correction letter 5-8-2002

i. Plant-Specific Calculations for Compliance with 10 CFR Section 50.46 (II.K.3.31, SSER #1)

Deleted by Amendment No. 176

j. Improving Licensee Emergency Preparedness (III.A.2, SSER #1, SSER #5)

Deleted by Amendment No. 176

(18) Emergency Preparedness Conditions

Deleted by Amendment Nos. 8 and 176

(19) RCS Depressurization System (PORV's)

Deleted by Amendment No. 176

(20) Qualification of Auxiliary Feedwater (AFW) Pump Motor Bearings

Deleted by Amendment No. 176

(21) Surveillance Program (Section 1.12, SSER #5)

Deleted by Amendment No. 176

(22) Auxiliary Building Ventilation System.

Deleted by Amendment No. 176

(23) Fuel Assembly Shoulder Gap Clearance (SCE letter of July 25, 1983)

Deleted by Amendment No. 176

(24) Isolation Capability for Primary EOF

Deleted by Amendment No. 176

(25) Correction of CPC Software Error

Deleted by Amendment No. 176

(26) Reporting of AFWS Failures

Deleted by Amendment No. 176

(27) Mitigation Strategy License Condition

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

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

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

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

(28) Upon implementation of Amendment No. 206 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 3.7.11.4, in accordance with TS 5.5.2.16.c.(i), the assessment of CRE habitability as required by Specification 5.5.2.16.c.(ii), and the measurement of CRE pressure as required by Specification 5.5.2.16.d, shall be considered met. Following implementation:

(a) The first performance of SR 3.7.11.4, in accordance with Specification 5.5.2.16.c.(i), shall be within the specified frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from May 18, 2004, the date of the most recent successful tracer gas test, as stated in the September 17, 2004 letter response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.

(b) The first performance of the periodic assessment of CRE habitability, Specification 5.5.2.16.c.(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from May 18, 2004, the date of the most recent successful tracer gas test, as stated in the September 17, 2004, letter response to Generic Letter 2003-01, or within the next 9 months if the time period since the most recent successful tracer gas is greater than 3 years.

(c) The first performance of the periodic measurement of CRE pressure, Specification 5.5.2.16.d, shall be within 6 months.

D. Exemptions to certain requirements of Appendices G, H and J to 10 CFR Part 50 are described in the Office of Nuclear Reactor Regulation's Safety Evaluation

Report. These exemptions are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. Therefore, these exemptions are hereby granted. The facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission.

E. SCE shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contain Safeguards Information protected under 10 CFR 73.21 is entitled: "San Onofre Nuclear Generating Station Security, Training and Qualification, and Safeguards Contingency Plan, Revision 2" submitted by letter dated May 15, 2006. SCE shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The SONGS CSP was approved by License Amendment No. 218.

F. This license is subject to the following additional condition for the protection of the environment:

Before engaging in activities that may result in a significant adverse environmental impact that was not evaluated or that is significantly greater than that evaluated in the Final Environmental Statement, SCE shall provide a written notification of such activities to the NRC Office of Nuclear Reactor Regulation and receive written approval from that office before proceeding with such activities.

G. DELETED

H. SCE shall notify the Commission, as soon as possible but not later than one hour, of any accident at this facility which could result in an unplanned release of quantities of fission products in excess of allowable limits for normal operation established by the Commission.

I. SCE 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.

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*On September 29, 1983, the Safeguards Contingency Plan was made a separate, companion document to the Physical Security Plan pursuant to the authority of 10 CFR 50.54.

J. This license is effective as of the date of issuance and shall expire at midnight on November 15, 2022.

K. Deleted by Amendment No. 176

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed by
Harold R. Denton

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Attachments:
1. Attachment 1 - Deleted by Amendment No. 176
2. Appendix A (Technical Specifications)
3. Appendix B (Environmental Protection Plan)
4. Appendix C (Antitrust Conditions)

Date of Issuance: NOV 15 1982

50- 362

SAN ONOFRE

NUCLEAR GENERATING STATION,

UNIT 3

Improved Technical Specifications based on NUREG-1432, "Standard Technical Specifications - Combustion Engineering Reactors"

(continued)

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(continued)

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(continued)

(continued)

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.
AXIAL SHAPE INDEX (ASI)	ASI shall be the power generated in the lower half of the core less the power generated in the upper half of the core, divided by the sum of the power generated in the lower and upper halves of the core. $$ASI = \frac{\text{lower} - \text{upper}}{\text{lower} + \text{upper}}$$
AZIMUTHAL POWER TILT (T_q)	AZIMUTHAL POWER TILT shall be the power asymmetry between azimuthally symmetric fuel assemblies.
CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel, including the required sensor, alarm, display, and trip functions, and shall include the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an inplace cross calibration of the sensing elements and normal calibration of the remaining adjustable devices in the channel. Whenever a sensing element is replaced, the next required inplace cross calibration consists of comparing the other sensing elements with the recently installed sensing element.

(continued)

1.1 Definitions

CHANNEL CALIBRATION (continued)	The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps so that the entire channel is calibrated.
CHANNEL CHECK	A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.
CHANNEL FUNCTIONAL TEST	A CHANNEL FUNCTIONAL TEST shall be: a. Analog channels—the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY, including required alarms, interlocks, display and trip functions; b. Bistable channels (e.g., pressure switches and switch contacts)—the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY, including required alarm and trip functions; or c. Digital computer channels—the use of diagnostic programs to test digital computer hardware and the injection of simulated process data into the channel to verify OPERABILITY, including alarm and trip functions. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps so that the entire channel is tested.
CORE ALTERATION	CORE ALTERATION shall be the movement or manipulation of any fuel, sources, reactivity control components, or other components, excluding control element assemblies (CEAs) withdrawn into the upper guide structure, affecting reactivity,

(continued)

1.1 Definitions

CORE ALTERATION (continued)	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 5.7.1.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in ICRP-30, Supplement to Part 1, pages 192-212, Tables titled, "Committed Dose Equivalent in Target Organs or Tissues per Intake of Unit Activity."
$\bar{E}$ – AVERAGE DISINTEGRATION ENERGY	$\bar{E}$ shall be the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives > 15 minutes, making up at least 95% of the total noniodine activity in the coolant.
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

(continued)

1.1 Definitions

ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME (Continued)	measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.

LEAKAGE

LEAKAGE shall be:

a. Identified LEAKAGE

1. LEAKAGE, such as that from pump seals or valve packing (except reactor coolant pump (RCP) 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 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.

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.

(continued)

1.1 Definitions

OPERABLE – OPERABILITY	A system, subsystem, train, component, or device shall be OPERABLE when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).
PHYSICS TESTS	PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are: a. Described in Chapter 14, Initial Test Program of the SONGS Units 2 and 3 UFSAR; b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
RCS PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)	The PTLR is the unit specific document that provides the reactor vessel pressure and temperature limits, including heatup and cooldown rates, for the current reactor vessel fluence period. These pressure and temperature limits shall be determined for each fluence period in accordance with Specification 5.7.1.6.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 3438 MWt.

(continued)

1.1 Definitions

REACTOR PROTECTIVE SYSTEM (RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until electrical power to the CEAs drive mechanism is interrupted. 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.
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:

(continued)

1.1 Definitions

SHUTDOWN MARGIN (SDM) (continued)	a. All full length CEAs (shutdown and regulating) are fully inserted except for the single CEA of highest reactivity worth, which is assumed to be fully withdrawn. However, with all CEAs verified fully inserted by two independent means, it is not necessary to account for a stuck CEA in the SDM calculation. With any CEAs not capable of being fully inserted, the reactivity worth of these CEAs must be accounted for in the determination of SDM, and b. There is no change in part length CEA position.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

Table 1.1-1 (page 1 of 1)
MODES

MODE	TITLE	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	< 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 indentions of the logical connectors.

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

EXAMPLES

The following examples illustrate the use of logical connectors.

(continued)

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-1

ACTIONS

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

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

(continued)

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-2

ACTIONS

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

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

1.0 USE AND APPLICATION

1.3 Completion Times

PURPOSE

The purpose of this section is to establish the Completion Time convention and to provide guidance for its use.

BACKGROUND

Limiting Condition 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.

(continued)

1.3 Completion Times

DESCRIPTION (continued)

However, when a <u>subsequent</u> 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 <u>first</u> inoperability; and

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

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

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

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

The above Completion Time 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 . . ." Example 1.3-3 illustrates one use of this type of Completion Time. The 10 day Completion Time specified for Conditions A and B in Example 1.3-3 may not be extended.

(continued)

1.3 Completion Times (continued)

EXAMPLES

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

EXAMPLE 1.3-1

ACTIONS

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

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.

(continued)

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-2

ACTIONS

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

(continued)

1.3 Completion Times

EXAMPLES

<u>EXAMPLE 1.3-2</u> (continued)

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

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

(continued)

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Function X train inoperable.	A.1 Restore Function X train to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the LCO
B. One Function Y train inoperable.	B.1 Restore Function Y train to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet the LCO
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

(continued)

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).

The Completion Times of Conditions A and B are modified by a logical connector, with a separate 10 day Completion Time measured from the time it was discovered the LCO was not met. In this example, without the separate Completion Time, it would be 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. The separate Completion Time modified by the phrase "from discovery of failure to meet the LCO" is designed to prevent indefinite continued operation while not meeting the LCO. This Completion Time allows for an exception to the normal "time zero" for beginning the Completion Time "clock." In this instance, the Completion Time "time zero" is specified as commencing at the time the LCO was initially not met, instead of at the time the associated Condition was entered.

(continued)

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-4

ACTIONS

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

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

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

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

(continued)

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-5

ACTIONS

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

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

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

The Note allows Condition A to be entered separately for each inoperable valve, and Completion Times tracked on a per valve basis. When a valve is declared inoperable, Condition A is entered and its Completion Time starts. If subsequent valves are declared inoperable, Condition A is entered for each valve and separate Completion Times start and are tracked for each valve.

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-5 (continued)

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

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

EXAMPLE 1.3-6

ACTIONS

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

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-6 (continued)

Entry into Condition A offers a choice between Required Action A.1 or A.2. Required Action A.1 has a "Once per" Completion Time, which qualifies for the 25% extension, per SR 3.0.2, to each performance after the initial performance. If Required Action A.1 is followed and the Required Action is not met within the Completion Time (including the 25% extension allowed by SR 3.0.2), Condition B is entered. If Required Action A.2 is followed and the Completion Time of 8 hours is not met, Condition B is entered.

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

(continued)

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-7

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Verify affected subsystem isolated.	1 hour AND Once per 8 hours thereafter
	AND	
	A.2 Restore subsystem to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	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 (including the 25% extension allowed by SR 3.0.2), Condition B is entered.

(continued)

1.3 Completion Times

EXAMPLES	EXAMPLE 1.3-7 (continued) 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.
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.

(continued)

1.4 Frequency

EXAMPLES (continued)

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 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.

(continued)

1.4 Frequency

EXAMPLES (continued)

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.

(continued)

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-3

SURVEILLANCE REQUIREMENTS

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

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

As the Note modifies the required performance of the Surveillance, it is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is < 25% RTP, this Note allows 12 hours after power reaches ≥ 25% RTP to perform the Surveillance. The Surveillance is still considered to be performed within the "specified Frequency." Therefore, if the Surveillance were not performed within the 7 day (plus 25% per SR 3.0.2) interval, but operation was < 25% RTP, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not exceed 12 hours with power ≥ 25% RTP.

Once the 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; MODE changes then would be restricted in accordance with SR 3.0.4 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, departure from nucleate boiling ratio (DNBR) shall be maintained at ≥ 1.31.

2.1.1.2 In MODES 1 and 2, peak fuel centerline temperature shall be maintained at < 5080°F, decreasing by 58°F per 10,000 MWD/MTU and adjusted for burnable poison per CENPD-382-P-A.

2.1.2 Reactor Coolant System (RCS) Pressure SL

In MODES 1, 2, 3, 4, and 5, the RCS pressure shall be maintained at ≤ 2750 psia.

2.2 SL Violations

2.2.1 If SL 2.1.1.1 or SL 2.1.1.2 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 or an associated ACTION is not provided, 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 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 not be made except 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. This

(continued)

3.0 LCO APPLICABILITY

LCO 3.0.4 (continued)	Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS. Exceptions to this Specification are stated in the individual Specifications. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.
LCO 3.0.5	Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.
LCO 3.0.6	When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, additional evaluations and limitations may be required in accordance with Specification 5.6, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

(continued)

3.0 LCO APPLICABILITY (continued)

LCO 3.0.7 Special test exception (STE) LCOs in each applicable LCO section allow specified Technical Specifications (TS) LCO 3.0.7 requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. Compliance with STE LCOs is optional. When an STE LCO is desired to be met but is not met, the ACTIONS of the STE LCO shall be met. When an STE LCO is not desired to be met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with the other applicable Specifications.

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

If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered. The Completion Times of the Required Actions begin immediately upon expiration of the delay period.

(continued)

3.0 SR APPLICABILITY

SR 3.0.3 (continued)	When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered. The Completion Times of the Required Actions begin immediately upon failure to meet the Surveillance.
SR 3.0.4	Entry into a MODE or other specified condition in the Applicability of an LCO shall not be made unless the LCO's Surveillances have been met within their specified Frequency. This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with Actions.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.1 SHUTDOWN MARGIN (SDM) – T_{avg} > 200°F

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

APPLICABILITY: MODES 3 and 4.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.1.1 Verify SDM is acceptable with increased allowance for the withdrawn worth of inoperable CEAs.	1 hour after detection of inoperable CEA(s) and every 12 hours thereafter
SR 3.1.1.2 Verify SDM to be within the limits specified in the COLR.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 SHUTDOWN MARGIN (SDM) – T_{avg} ≤ 200°F

LCO 3.1.2 SDM shall be within the limits specified in the COLR.

APPLICABILITY: MODE 5.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.2.1 Verify SDM to be within the limits specified in the COLR.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Reactivity Balance

LCO 3.1.3 The core reactivity balance shall be within ± 1% Δk/k of predicted values.

APPLICABILITY: MODES 1 and 2.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.3.1	-------------------NOTES------------------- 1. 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. 2. This Surveillance is not required to be performed prior to entering MODES 1 or 2. --- Verify overall core reactivity balance is within ± 1.0% Δk/k of predicted values.	-----NOTE----- Only required after 60 EFPD -------------- 31 EFPD

3.1 REACTIVITY CONTROL SYSTEMS

3.1.4 Moderator Temperature Coefficient (MTC)

LCO 3.1.4 The MTC shall be maintained within the limits specified in the COLR, and a maximum positive limit as specified below:

a. 0.5 E-4 $\Delta k/k/°F$ when THERMAL POWER is ≤ 70% RTP; and

b. 0.0 $\Delta k/k/°F$ when THERMAL POWER is > 70% RTP.

APPLICABILITY: MODES 1 and 2 with $K_{eff} \geq 1.0$

ACTION

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. MTC not within limits.	A.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
	------------------NOTE------------------ SR 3.1.4.1 is not required to be performed prior to entry into MODE 2. --	
SR 3.1.4.1	Verify MTC within the upper limit.	Prior to entering MODE 1 after each fuel loading

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
	------------------NOTES------------------ 1. SR 3.1.4.2 is not required to be performed prior to entry into MODE 1 or 2. 2. Measured MTC values shall be extrapolated and compensated to RTP to permit direct comparison with the negative limit. If the MTC is more negative than the COLR limit when extrapolated to the end of cycle, SR 3.1.4.2 may be repeated. 3. Shutdown must occur prior to reducing the boron concentration below the minimum allowable boron concentration at which MTC is projected to exceed the lower limit. ---	
SR 3.1.4.2	Verify MTC is within the lower limit specified in the COLR.	Each fuel cycle within ±14 effective full power days (EFPD) of peak predicted boron concentration at rated thermal power AND Each fuel cycle within ±30 EFPD of $\frac{2}{3}$ of expected core burnup

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Control Element Assembly (CEA) Alignment

LCO 3.1.5 All full length CEAs shall be OPERABLE and all full and part length CEAs shall be aligned to within 7 inches of all other CEAs in its group.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One regulating CEA trippable and misaligned from its group by > 7 inches.	A.1 Initiate THERMAL POWER reduction in accordance with COLR requirements.	15 minutes
	AND	
	A.2.1 Restore the misaligned CEA(s) to within 7 inches of its group.	2 hours
	OR	
		(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.2 Align the remainder of the CEAs in the group to within 7 inches of the misaligned CEA(s) while maintaining the insertion limit of LCO 3.1.7, "Regulating Control Element Assembly (CEA) Insertion Limits."	2 hours
B. One shutdown CEA trippable and misaligned from its group by > 7 inches.	B.1 Initiate THERMAL POWER reduction in accordance with COLR requirements.	15 minutes
	<u>AND</u>	
	B.2 Restore the misaligned CEA(s) to within 7 inches of its group.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One part length CEA misaligned from its group by > 7 inches.	C.1 Initiate THERMAL POWER reduction in accordance with COLR requirements.	15 minutes
	AND	
	C.2.1 Restore the misaligned CEA(s) to within 7 inches of its group.	2 hours
	OR	
	C.2.2 Align the remainder of the CEAs in the group to within 7 inches of the misaligned CEA(s), while maintaining the insertion limit of LCO 3.1.8, "Part Length Regulating Control Element Assembly (CEA) Insertion Limits."	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A, B, or C not met. OR One full length CEA untrippable. OR More than one full length CEA trippable, but misaligned from any other CEA in its group by > 7 inches. OR More than one part length CEA misaligned from any other CEA in its group by > 7 inches.	D.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.5.1	Verify the position of each full and part length CEA is within 7 inches of all other CEAs in its group.	12 hours

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.5.2	Verify that, for each CEA, its OPERABLE CEA position indicator channels indicate within 5 inches of each other.	12 hours
SR 3.1.5.3	Verify full length CEA freedom of movement (trippability) by moving each individual full length CEA that is not fully inserted in the core at least 5 inches.	92 days
SR 3.1.5.4*	Perform a CHANNEL FUNCTIONAL TEST of each reed switch position transmitter channel.	24 months
SR 3.1.5.5	Verify each full length CEA drop time and the arithmetic average of all full length CEA drop times is within at least one of the limit sets: Set / Average (sec) / Individual (sec) I / ≤ 3.0 / ≤ 3.2 II / ≤ 3.2 / ≤ 3.4 III / ≤ 3.4 / ≤ 3.6	Prior to the first reactor criticality, after each removal of the reactor head
SR 3.1.5.6	For each CEA drop time measurement performed under SR 3.1.5.5, verify that the appropriate CPC and COLSS addressable constant adjustments have been made.	Prior to reactor criticality

*This SR is not applicable until return to Mode 2 from the Unit 3 Cycle 9 refueling outage with the additional commitments made in Edison letter dated February 6, 1997. The safety justification for not complying with this SR is included in the February 6, 1997 letter.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Shutdown Control Element Assembly (CEA) Insertion Limits

LCO 3.1.6 All shutdown CEAs shall be withdrawn to ≥ 145 inches.

APPLICABILITY: MODE 1,
MODE 2 with any regulating CEA not fully inserted.

---------------------------NOTE---------------------------
This LCO is not applicable while performing SR 3.1.5.3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more shutdown CEA(s) not within limit.	A.1	Restore shutdown CEA(s) to within limit.	2 hours
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.6.1	Verify each shutdown CEA is withdrawn $\geq$ 145 inches.	12 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Regulating CEA Insertion Limits

LCO 3.1.7 The power dependent insertion limit (PDIL) alarm circuit shall be OPERABLE, and

a. With the Core Operating Limit Supervisory System (COLSS) in service, the regulating CEA groups shall be limited to the withdrawal sequence, insertion limits, and associated time restraints specified in the COLR.

b. With COLSS out of service, the regulating CEA groups shall be limited to the short term steady state insertion limit and associated time restraints specified in the COLR.

APPLICABILITY: MODES 1 and 2.

-----------------------------NOTE-----------------------------
This LCO is not applicable while conducting SR 3.1.5.3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Regulating CEA groups inserted beyond the transient insertion limit with COLSS in service.	A.1 Restore regulating CEA groups to within limits. <u>OR</u>	2 hours (continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2	Reduce THERMAL POWER to less than or equal to the fraction of RTP allowed by the CEA group position and insertion limits specified in the COLR.	2 hours
B. Regulating CEA groups inserted between the long term steady state insertion limit and the transient insertion limit for > 4 hours per 24 hour interval with COLSS in service.	B.1	Verify short term steady state insertion limits are not exceeded.	15 minutes
	<u>OR</u>		
	B.2	Restrict increases in THERMAL POWER to ≤ 5% RTP per hour.	15 minutes
C. Regulating CEA groups inserted between the long term steady state insertion limit and the transient insertion limit for intervals > 5 effective full power days (EFPD) per 30 EFPD interval or > 14 EFPD per 365 EFPD interval with COLSS in service.	C.1	Restore regulating CEA groups to within limits.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Regulating CEA groups inserted beyond the short term steady state insertion limit with COLSS out of service.	D.1	Restore regulating CEA groups to within limits.	2 hours
	<u>OR</u>		
	D.2	Reduce THERMAL POWER to less than or equal to the fraction of RTP allowed by CEA group position and short term steady state insertion limit specified in the COLR.	2 hours
E. PDIL alarm circuit inoperable.	E.1	Perform SR 3.1.7.1.	1 hour <u>AND</u> Once per 4 hours thereafter
F. Required Actions and associated Completion Times not met.	F.1	Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.7.1	-------------------NOTE------------------- This Surveillance is not required to be performed prior to entry into MODE 2. -- Verify each regulating CEA group position is within its insertion limits.	 12 hours
SR 3.1.7.2	Verify the accumulated times during which the regulating CEA groups are inserted beyond the steady state insertion limits but within the transient insertion limits.	24 hours
SR 3.1.7.3	Verify PDIL alarm circuit is OPERABLE.	31 days

3.1 REACTIVITY CONTROL SYSTEMS

3.1.8 Part Length Control Element Assembly (CEA) Insertion Limits

LCO 3.1.8 The part length CEA groups shall be limited to the insertion limits specified in the COLR.

APPLICABILITY: MODE 1 > 20% RTP.

-----------------------------NOTE-----------------------------
This LCO not applicable while exercising part length CEAs.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Part length CEA groups inserted beyond the transient insertion limit.	A.1 Restore part length CEA groups to within the limit. <u>OR</u> A.2 Reduce THERMAL POWER to less than or equal to that fraction of RTP specified in the COLR.	2 hours 2 hours
B. Part length CEA groups inserted between the long term steady state insertion limit and the transient insertion limit for intervals > 7 effective full power days (EFPD) per 30 EFPD or > 14 EFPD per 365 EFPD interval.	B.1 Restore part length CEA groups to within the long term steady state insertion limit.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition B not met.	C.1 Reduce THERMAL POWER to ≤ 20% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.8.1	Verify part length CEA group position.	12 hours
SR 3.1.8.2	Verify the accumulated time during which the part length CEA groups are inserted beyond the long term steady state insertion limit but within the transient insertion limit.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.9 Boration Systems - Operating

LCO 3.1.9 Two RCS boron injection flow paths shall be OPERABLE with the contents of the Boric Acid Makeup (BAMU) tanks in accordance with the LCS.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One boron injection flow path INOPERABLE.	A.1 Restore boron injection flow path to OPERABLE.	72 hours
B. Required Action and associated completion time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Restore boron injection flow path to OPERABLE.	6 hours 7 days
C. Required Action and associated completion time of Condition B not met.	C.1 Be in MODE 5.	30 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.9.1	Verify the boron concentration in the BAMU tank(s) is within limits.	7 days
SR 3.1.9.2	Verify the volume of borated water contained in the BAMU tank(s) is within limits.	7 days
SR 3.1.9.3	Verify that each flow path is operable and that each valve (manual, power operated or automatic, that is not locked, sealed, or otherwise secured) in the above required flow paths is in its correct position.	31 days
SR 3.1.9.4	Verify that each automatic valve in the above required flow paths actuates to its correct position on an SIAS test signal.	24 months
SR 3.1.9.5	Verify each charging pump is OPERABLE.	In accordance with the Inservice Testing Program

(continued)

3.1 REACTIVITY CONTROL SYSTEMS

3.1.10 Boration Systems - Shutdown

LCO 3.1.10 One RCS boron injection flow path shall be OPERABLE.

APPLICABILITY: MODES 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. No boron injection flow path OPERABLE.	A.1	--------NOTE-------- Plant temperature changes are allowed provided the temperature change is accounted for in the calculated SDM. --------------------- Suspend all operations involving CORE ALTERATIONS or positive reactivity changes.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
	------------------NOTE-------------------- Only required when the Refueling Water Storage Tank (RWST) is the source of borated water and the outside temperature is < 40°F or > 100°F. --	
SR 3.1.10.1	Verify RWST temperature is within limits.	24 hours
SR 3.1.10.2	Verify volume of available borated water is within limits.	7 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.10.3	Verify boron concentration is within limits.	7 days
SR 3.1.10.4	Verify one required flow path is OPERABLE and that each valve (manual, power operated or automatic, that is not locked, sealed or otherwise secured) in the required flow path is in its correct position.	31 days

3.1 REACTIVITY CONTROL SYSTEMS

3.1.12 Special Test Exception (STE) — Low Power Physics Testing

LCO 3.1.12 During performance of PHYSICS TESTS the following LCOs may be suspended:

LCO 3.1.1, "SHUTDOWN MARGIN (SDM) — T_{avg} > 200°F;"
LCO 3.1.4, "Moderator Temperature Coefficient (MTC);"
LCO 3.1.5, "Control Element Assembly (CEA) Alignment;"
LCO 3.1.6, "Shutdown Control Element Assembly (CEA) Insertion Limits;"
LCO 3.1.7, "Regulating Control Element Assembly (CEA) Insertion Limits;"
LCO 3.1.8, "Part Length CEA Insertion Limits;" and
LCO 3.3.1, "RPS Instrumentation - Operating," Table 3.3.1-1, ALLOWABLE VALUE for FUNCTION 2 and footnote (d) for FUNCTIONS 11 and 12;
LCO 3.3.3, "Control Element Assembly Calculators (CEACs)."

provided, the shutdown reactivity available for trip insertion is equivalent to at least the highest CEA worth.

APPLICABILITY: MODES 2 and 3 during PHYSICS TESTS.

-----NOTE-----
Operation in MODE 3 shall be limited to 6 consecutive hours.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Less than the required shutdown reactivity is available.	A.1 Initiate boration to restore required shutdown reactivity.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.12.1	Verify each full length CEA not fully inserted is capable of full insertion when tripped from at least the 50% withdrawn position.	Within 7 days prior to reducing SDM to less than the limits of LCO 3.1.1
SR 3.1.12.2	Verify that the required shutdown reactivity is available.	2 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.13 Special Test Exceptions (STE)—At Power Physics Testing

LCO 3.1.13 During performance of PHYSICS TESTS the following LCOs may be suspended:

LCO 3.1.7, "Regulating Control Element Assembly (CEA) Insertion Limits;"
LCO 3.1.8, "Part Length CEA Insertion Limits;"
LCO 3.2.2, "Planar Radial Peaking Factors;"
LCO 3.2.3, "AZIMUTHAL POWER TILT (Tq);" and
LCO 3.2.5, "Axial Shape Index";

provided:

a. THERMAL POWER less than or equal to 85% RTP; and

b. LHR does not exceed the limit specified in the COLR.

APPLICABILITY: MODE 1 during PHYSICS TESTS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. THERMAL POWER greater than 85% RTP.	A.1 Reduce THERMAL POWER to less than or equal to 85% RTP.	15 minutes
B. LHR exceeds the limit specified in the COLR.	B.1 Reduce THERMAL POWER to satisfy the LHR limit specified in the COLR.	15 minutes

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Suspend PHYSICS TESTS.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.13.1	Verify THERMAL POWER less than or equal to 85% RTP.	1 hour
SR 3.1.13.2	-------------------NOTE------------------- SR 3.1.13.2 is only applicable in MODE 1 with THERMAL POWER > 20% RTP. -- Verify LHR does not exceed the limits specified in the COLR using COLSS or any OPERABLE CPC LPD channel.	Continuously

3.1 REACTIVITY CONTROL SYSTEMS

3.1.14 Special Test Exceptions (STE) - Reactivity Coefficient Testing

LCO 3.1.14 During performance of PHYSICS TESTS the following LCOs may be suspended:

LCO 3.1.5, "Control Element Assembly (CEA) Alignment;" and
LCO 3.1.7, "Regulating CEA Insertion Limits;"

provided that:

a. Only the center CEA (CEA #1) is misaligned, or only regulating CEA Group 6 is inserted beyond the transient insertion Limit of LCO 3.1.7; and

b. The LHR and DNBR do not exceed the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LHR or DNBR outside the limits specified in the COLR.	A.1 Reduce THERMAL POWER to restore LHR and DNBR to within limits.	15 minutes
B Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
	-------------------NOTE------------------- Only required with THERMAL POWER < 20% RTP. --	
SR 3.1.14.1	Verify LHR and DNBR do not exceed the limits specified in the COLR using any OPERABLE CPC channel.	Continuously
	-------------------NOTE------------------- Only required with THERMAL POWER ≥ 20% RTP. --	
SR 3.1.14.2	Verify LHR and DNBR do not exceed limits specified in the COLR using the COLSS or, if COLSS is out of service, using any OPERABLE CPC channel.	Continuously

3.2 POWER DISTRIBUTION LIMITS

3.2.1 Linear Heat Rate (LHR)

LCO 3.2.1 LHR shall not exceed the limits specified in the COLR.

APPLICABILITY: MODE 1 with THERMAL POWER > 20% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Core operating limit supervisory system (COLSS) calculated core power exceeds the COLSS calculated core power operating limit based on LHR.	A.1 Restore LHR to within limits.	1 hour
B. With COLSS not in service and any OPERABLE CPC local power density channel exceeding the LHR limit.	B.1 Initiate SR 3.2.1.2 AND B.2 Restore LHR to within limits.	15 minutes 4 hours
C. Required Action and associated Completion Time not met.	C.1 Reduce THERMAL POWER to $\leq$ 20% RTP.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.1.1	-------------------NOTE------------------- 1. Only applicable when COLSS is out of service. With COLSS in service, LHR is continuously monitored. 2. SR 3.0.4 is not applicable. -- Verify LHR, as indicated on all OPERABLE CPC local power density channels, is within COLR limits.	2 hours
SR 3.2.1.2	-------------------NOTE------------------- Only applicable with LHR outside limit, as indicated by any OPERABLE CPC local power density channel exceeding the LHR limit. -- Verify no adverse trend in LHR.	15 minutes
SR 3.2.1.3	Verify the COLSS margin alarm actuates at a THERMAL POWER equal to or less than the core power operating limit based on LHR.	31 days

3.2 POWER DISTRIBUTION LIMITS

3.2.2 Planar Radial Peaking Factors (F_{xy})

LCO 3.2.2 The measured Planar Radial Peaking Factors (F^M_{xy}) shall be less than or equal to the Planar Radial Peaking Factors (F^C_{xy}) used in the Core Operating Limit Supervisory System (COLSS) and in the Core Protection Calculators (CPCs).

APPLICABILITY: MODE 1 with THERMAL POWER > 20% RTP.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. $F^M_{xy} > F^C_{xy}$.	A.1	Adjust the CPC addressable constants to increase the multiplier applied to planar radial peaking by a factor $\geq F^M_{xy}/F^C_{xy}$.	6 hours
		AND	
	A.1.1	Adjust the affected F^C_{xy} used in the COLSS to a value greater than or equal to the measured F^M_{xy}.	6 hours
		OR	
	A.1.2	Maintain a margin to the COLSS operating limits of $[(F^M_{xy}/F^C_{xy})-1.0] \times 100\%$.	6 hours
	OR		
	A.2	Reduce THERMAL POWER to $\leq$ 20% RTP.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
	--------------------NOTE------------------- SR 3.0.4 is not applicable. ---	
SR 3.2.2.1	Verify measured F_{xy}^{M} obtained using the Incore Detector System is less than or equal to the value of F_{xy}^{C} used in the COLSS and CPCs.	Once after each fuel loading with THERMAL POWER > 40% RTP but prior to Thermal POWER >85% RTP <u>AND</u> 31 EFPD thereafter

3.2 POWER DISTRIBUTION LIMITS

3.2.3 AZIMUTHAL POWER TILT (T_q)

LCO 3.2.3 The measured T_q shall be less than or equal to the T_q allowance used in the core protection calculators (CPCs).

APPLICABILITY: MODE 1 with THERMAL POWER > 20% RTP.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Measured T_q greater than the allowance used in the CPCs .	A.1	Restore measured T_q to less than or equal to the allowance used in the CPCs.	2 hours
	<u>OR</u>		
	A.2	Adjust the T_q allowance in the CPCs to greater than or equal to the measured T_q.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Measured $T_q > 0.03$ and ≤ 0.10.	B.1	Adjust the T_q allowance in the CPCs to greater than or equal to the measured T_q.	2 hours
	<u>AND</u>		
	B.2	Evaluate core design and safety analysis and determine that the core is acceptable for continued operation.	72 hours
	<u>AND</u>		
	B.3	Establish appropriate operating restrictions and SRs.	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Measured $T_q > 0.10$.	------------NOTE------------ Action C.5 must be completed if power reduction commences prior to restoring T_q to ≤ 0.10. ----------------------------	
	C.1 Adjust the T_q allowance in the CPCs to greater than or equal to the measured T_q.	2 hours
	AND	
	C.2 Reduce THERMAL POWER to $\leq$ 50% RTP.	4 hours
	AND	
	C.3 Reduce Linear Power Level—High trip setpoints to $\leq$ 55% RTP.	16 hours
	AND	
	C.4 Correct the cause for measured $T_q > 0.10$.	Prior to increasing THERMAL POWER > 50%
	AND	
	C.5 Verify measured T_q is ≤ 0.10 at least once per hour for 12 hours, or until verified at $\geq$ 95% RTP.	Subsequent to power operation > 50% RTP
D. Required Actions and associated Completion Times not met.	D.1 Reduce THERMAL POWER to $\leq$ 20%.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.3.1	-------------------NOTES------------------- Only applicable when COLSS is out of service. With COLSS in service, this parameter is continuously monitored. --- Calculate T_q and verify it is less than or equal to the T_q allowance used in the CPCs.	12 hours
SR 3.2.3.2	Verify COLSS azimuthal tilt alarm is actuated at a T_q value less than or equal to the T_q value used in the CPCs.	31 days
SR 3.2.3.3	Independently confirm the validity of the COLSS calculated T_q by use of the incore detectors.	31 EFPD

3.2 POWER DISTRIBUTION LIMITS

3.2.4 Departure From Nucleate Boiling Ratio (DNBR)

LCO 3.2.4 The DNBR shall be maintained by one of the following methods:

a. Maintaining Core Operating Limit Supervisory System (COLSS) calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR (when COLSS is in service, and either one or both control element assembly calculators (CEACs) are OPERABLE);

b. Maintaining COLSS calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR decreased by the allowance specified in the COLR (when COLSS is in service and neither CEAC is OPERABLE);

c. Operating within limits as specified in the COLR using any operable core protection calculator (CPC) channel (when COLSS is out of service and either one or both CEACs are OPERABLE); or

d. Operating within limits as specified in the COLR using any operable CPC channel (when COLSS is out of service and neither CEAC is OPERABLE).

APPLICABILITY: MODE 1 with THERMAL POWER > 20% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. With COLSS in service and the COLSS calculated core power exceeding the COLSS calculated core power operating limit.	A.1 Restore the DNBR to within limit.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. With COLSS not in service and DNBR outside the COLR specified limits using any OPERABLE CPC channel.	B.1 Initiate SR 3.2.4.1. AND B.2 Restore DNBR to within limit.	15 minutes 4 hours
C. Required Action and associated Completion Time not met.	C.1 Reduce THERMAL POWER to ≤ 20% RTP.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.4.1	------------------NOTE-------------------- Only required with COLSS not in service and DNBR not within specified limits using any CPC channel. -- Verify no adverse trend in DNBR.	 15 minutes

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.2.4.2	-------------------NOTES-------------------- 1. Only applicable when COLSS is out of service. With COLSS in service, this parameter is continuously monitored. 2. SR 3.0.4 is not applicable. --- Verify DNBR, as indicated on any OPERABLE DNBR channel, is within the limit specified in the COLR.	2 hours
SR 3.2.4.3	Verify COLSS margin alarm actuates at a THERMAL POWER level equal to or less than the core power operating limit based on DNBR.	31 days

3.2 POWER DISTRIBUTION LIMITS

3.2.5 AXIAL SHAPE INDEX (ASI)

LCO 3.2.5 Core average ASI shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1 with THERMAL POWER > 20% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Core average ASI not within limits.	A.1 Restore ASI to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to ≤ 20% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.5.1	--------------------NOTE-------------------- Only applicable when COLSS is out of service. With COLSS in service, this parameter is continuously monitored. --- Verify core average ASI is within limits using any OPERABLE CPC channel.	12 hours

3.3 INSTRUMENTATION

3.3.1 Reactor Protective System (RPS) Instrumentation—Operating

LCO 3.3.1 Four RPS trip and operating bypass removal channels for each Function in Table 3.3.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1-1.

ACTIONS

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

1. Separate Condition entry is allowed for each RPS Function.
2. If a channel is placed in bypass, continued operation with the channel in the bypassed condition for the Completion Time specified by Required Action A.2 or C.2.2 shall be reviewed by the Onsite Review Committee.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one automatic RPS trip channel inoperable.	A.1 Place Channel in bypass or trip.	1 hour
	<u>AND</u>	
	A.2 Restore channel to OPERABLE status.	Prior to entering MODE 2 following next MODE 5 entry

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One or more Functions with two automatic RPS trip channels inoperable.	B.1	--------NOTE--------- LCO 3.0.4 is not applicable. ---------------------	
		Place one Functional Unit in bypass and the other in trip.	1 hour
C. One or more Functions with one operating bypass removal channel inoperable.	C.1	Disable bypass channel.	1 hour
	<u>OR</u>		
	C.2.1	Place affected automatic trip channel in bypass or trip.	1 hour
	<u>AND</u>		
	C.2.2	Restore bypass removal channel and associated automatic trip channel to OPERABLE status.	Prior to entering MODE 2 following next MODE 5 entry

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more Functions with two operating bypass removal channels inoperable.	------------NOTE------------ LCO 3.0.4 is not applicable. ---------------------------- D.1 Disable bypass channels. OR D.2 Place one affected automatic trip channel in bypass and place the other in trip.	 1 hour 1 hour
E. One or more core protection calculator (CPC) channels with a cabinet high temperature alarm.	E.1 Perform CHANNEL FUNCTIONAL TEST on affected CPC.	12 hours
F. One or more CPC channels with three or more autorestarts during a 12 hour period.	F.1 Perform CHANNEL FUNCTIONAL TEST on affected CPC.	24 hours
G. Required Action and associated Completion Time not met.	G.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

---NOTE---
Refer to Table 3.3.1-1 to determine which SR shall be performed for each RPS Function.

SURVEILLANCE		FREQUENCY
SR 3.3.1.1	Perform a CHANNEL CHECK of each RPS instrument channel.	12 hours
SR 3.3.1.2	---NOTE--- Not required to be performed until 12 hours after THERMAL POWER ≥ 85% RTP. --- Verify total Reactor Coolant System (RCS) flow rate as indicated by each CPC is less than or equal to the RCS total flow rate. If necessary, adjust the CPC addressable constant flow coefficients such that each CPC indicated flow is less than or equal to the RCS flow rate.	12 hours
SR 3.3.1.3	Check the CPC autorestart count.	12 hours

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.4	------------------NOTES------------------ 1. Not required to be performed until 12 hours after THERMAL POWER ≥ 20% RTP. 2. The daily calibration may be suspended during PHYSICS TESTS, provided the calibration is performed upon reaching each major test power plateau and prior to proceeding to the next major test power plateau. --- Perform calibration (heat balance only) and compare the indicated linear power level, the CPC ΔT power, and CPC nuclear power with the calorimetric calculation and if any are less than the calorimetric calculation by more than 1.0% or any greater than 5.0% RTP, adjust the indication to be within these limits (-1.0% to +5.0%).	24 hours
SR 3.3.1.5	------------------NOTE------------------ Not required to be performed until 12 hours after THERMAL POWER ≥ 85% RTP. --- Verify total RCS flow rate indicated by each CPC is less than or equal to the RCS flow determined by calorimetric calculations.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.6	-----NOTE----- Not required to be performed until 12 hours after THERMAL POWER ≥ 15% RTP. ----- Verify linear power subchannel gains of the excore detectors are consistent with the values used to establish the shape annealing matrix elements in the CPCs.	120 days
SR 3.3.1.7	-----NOTES----- 1. The CPC CHANNEL FUNCTIONAL TEST shall include verification that the correct values of addressable constants are installed in each OPERABLE CPC. 2. Not required to be performed for logarithmic power level channels until 2 hours after reducing THERMAL POWER below 1E-4% RTP and only if reactor trip circuit breakers (RTCBs) are closed. ----- Perform CHANNEL FUNCTIONAL TEST on each channel.	30 days on a STAGGERED TEST BASIS
SR 3.3.1.8	-----NOTE----- Neutron detectors are excluded from the CHANNEL CALIBRATION. ----- Perform CHANNEL CALIBRATION of the power range neutron flux channels.	120 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.9	-------------------NOTE------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. -- Perform CHANNEL CALIBRATION on each channel, including bypass removal functions.	24 months
SR 3.3.1.10	Perform a CHANNEL FUNCTIONAL TEST on each CPC channel.	24 months
SR 3.3.1.11	Using the incore detectors, verify the shape annealing matrix elements to be used by the CPCs.	Once after each refueling prior to exceeding 85% RTP
SR 3.3.1.12	Perform a CHANNEL FUNCTIONAL TEST on each operating bypass removal function.	Once within 120 days prior to each reactor startup
SR 3.3.1.13	-------------------NOTE------------------- Neutron detectors are excluded. -- Verify RPS RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Linear Power Level — High	1,2	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.6 SR 3.3.1.7 SR 3.3.1.8 SR 3.3.1.9 SR 3.3.1.13	≤ 111.0% RTP
2. Logarithmic Power Level — High[(a)]	2[(b)]	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.12 SR 3.3.1.13	≤ .93% RTP
3. Pressurizer Pressure — High	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	≤ 2385 psia
4. Pressurizer Pressure — Low[(c)]	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.12 SR 3.3.1.13	≥ 1700 psia
5. Containment Pressure — High	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	≤ 3.4 psig
6. Steam Generator 1 Pressure-Low	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	≥ 729 psia
7. Steam Generator 2 Pressure-Low	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	≥ 729 psia

(continued)

(a) Trip must be enabled when logarithmic power is * < 4E-5% RTP. Trip may be manually bypassed during physics testing pursuant to LCO 3.1.12.

(b) When any RTCB is closed.

(c) The setpoint may be decreased to a minimum value of 300 psia, as pressurizer pressure is reduced, provided the margin between pressurizer pressure and the setpoint is maintained ≤ 400 psia. Trips may be bypassed when pressurizer pressure is < 400 psia. Bypass shall be automatically removed before pressurizer pressure exceeds 500 psia (the corresponding bistable allowable value is ≤ 472 psia).

• PCN 500

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
8. Steam Generator 1 Level — Low	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	≥ 20%
9. Steam Generator 2 Level — Low	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	≥ 20%
10. Reactor Coolant Flow — Low[(d)]	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.12 SR 3.3.1.13	Ramp: ≤ 0.231 psid/sec. Floor: ≥ 12.1 psid Step: ≤ 7.25 psid
11. Local Power Density — High[(d)]	1,2	SR 3.3.1.1 SR 3.3.1.3 SR 3.3.1.4 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.11 SR 3.3.1.12 SR 3.3.1.13	≤ 21.0 kW/ft
12. Departure From Nucleate Boiling Ratio (DNBR) — Low[(d)]	1,2	SR 3.3.1.1 SR 3.3.1.2 SR 3.3.1.3 SR 3.3.1.4 SR 3.3.1.5 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.11 SR 3.3.1.12 SR 3.3.1.13	≥ 1.31

(d) Trip must be enabled when logarithmic power is * > 1.5E-4% RTP. During testing pursuant to LCO 3.1.12, trip may be bypassed below 5% RTP. Bypass shall be removed when logarithmic power is * ≥ 5% RTP.

- PCN 500

3.3 INSTRUMENTATION

3.3.2 Reactor Protective System (RPS) Instrumentation—Shutdown

LCO 3.3.2 Four RPS Logarithmic Power Level—High trip channels and associated instrument and operating bypass removal channels shall be OPERABLE. Trip channels shall have an Allowable Value of ≤ .93% RTP.

APPLICABILITY: MODES 3, 4, and 5, with any reactor trip circuit breakers (RTCBs) closed and any control element assembly capable of being withdrawn.

ACTIONS

-----------------------------------NOTE-----------------------------------
If a channel is placed in bypass, continued operation with the channel in the bypassed condition for the Completion Time specified by Required Action A.2 or C.2.2 shall be reviewed by the Onsite Review Committee.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RPS logarithmic power level trip channel inoperable.	A.1 Place channel in bypass or trip.	1 hour
	AND	
	A.2 Restore channel to OPERABLE status.	Prior to entering MODE 2 following next MODE 5 entry

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Two RPS logarithmic power level trip channels inoperable.	B.1 ---------NOTE--------- LCO 3.0.4 is not applicable. --------------------- Place one channel in bypass and place the other in trip.	1 hour
C. One operating bypass removal channel inoperable.	C.1 Disable bypass channel.	1 hour
	OR	
	C.2.1 Place affected automatic trip channel in bypass or trip.	1 hour
	AND	
	C.2.2 Restore bypass removal channel and associated automatic trip channel to OPERABLE status.	Prior to entering MODE 2 following next MODE 5 entry
D. Two operating bypass removal channels inoperable.	------------NOTE------------- LCO 3.0.4 is not applicable. -----------------------------	
	D.1 Disable bypass channels.	1 hour
	OR	

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. (continued)	D.2	Place one affected automatic trip channel in bypass and place the other in trip.	1 hour
E. Required Action and associated Completion Time not met.	E.1	Open all RTCBs.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.2.1	Perform a CHANNEL CHECK of each logarithmic power channel.	12 hours
SR 3.3.2.2	Perform a CHANNEL FUNCTIONAL TEST on each logarithmic power channel.	30 days on a STAGGERED TEST BASIS
SR 3.3.2.3	Perform a CHANNEL FUNCTIONAL TEST on each operating bypass removal function.	Once within 120 days prior to each reactor startup

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.4	-----------------NOTE------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. -- Perform a CHANNEL CALIBRATION on each logarithmic power channel, including bypass removal function.	24 months
SR 3.3.2.5	-----------------NOTE------------------- Neutron detectors are excluded. -- Verify RPS RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS

3.3 INSTRUMENTATION

3.3.3 Control Element Assembly Calculators (CEACs)

LCO 3.3.3 Two CEACs shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CEAC inoperable.	A.1 Perform SR 3.1.5.1. AND A.2 Restore CEAC to OPERABLE status.	Once per 4 hours 7 days
B. Required Action and associated Completion Time of Condition A not met. OR Both CEACs inoperable.	B.1 Verify the departure from nucleate boiling ratio requirement of LCO 3.2.4, "Departure from Nucleate Boiling Ratio (DNBR)," is met. AND	4 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	B.2	Verify all full length and part length control element assembly (CEA) groups are fully withdrawn and maintained fully withdrawn, except during Surveillance testing pursuant to SR 3.1.5.3 and SR 3.1.5.4 or for control, when CEA group #6 may be inserted to a maximum of 127.5 inches.	4 hours
	<u>AND</u>		
	B.3	Verify the "RSPT/CEAC Inoperable" addressable constant in each core protection calculator (CPC) is set to indicate that the applicable CEAC(s) is (are) inoperable.	4 hours
	<u>AND</u>		
	B.4	Verify the Control Element Drive Mechanism Control System is placed in "OFF" and maintained in "OFF," except during CEA motion permitted by Required Action B.2.	4 hours
	<u>AND</u>		
	B.5	Perform SR 3.1.5.1.	Once per 4 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Receipt of a CPC channel B or C cabinet high temperature alarm.	C.1 Perform CHANNEL FUNCTIONAL TEST on affected CEAC(s).	12 hours AND Once per 12 hours until high temperature alarm is cleared
D. One or two CEACs with three or more autorestarts during a 12 hour period.	D.1 Perform CHANNEL FUNCTIONAL TEST on affected CEAC.	24 hours
E. Required Action and associated Completion Time of Condition B, C, or D not met.	E.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.3.1	Perform a CHANNEL CHECK.	12 hours
SR 3.3.3.2	Check the CEAC autorestart count.	12 hours
SR 3.3.3.3	Perform a CHANNEL FUNCTIONAL TEST.	60 days on a STAGGERED TEST BASIS

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.3.4	Perform a CHANNEL CALIBRATION.	24 months
SR 3.3.3.5	Perform a CHANNEL FUNCTIONAL TEST.	24 months
SR 3.3.3.6	Verify the isolation characteristics of each CEAC isolation amplifier and each optical isolator for CEAC to CPC data transfer.	24 months

3.3 INSTRUMENTATION

3.3.4 Reactor Protective System (RPS) Logic and Trip Initiation

LCO 3.3.4 Six channels of RPS Matrix Logic, four channels of RPS Initiation Logic, four channels of reactor trip circuit breakers (RTCBs), and four channels of Manual Trip shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODES 3, 4, and 5, with any RTCBs closed and any control element assemblies capable of being withdrawn.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ----------NOTE--------- This action also applies when three Matrix Logic channels are inoperable due to a common power source failure de-energizing three matrix power supplies. ---------------------- One Matrix Logic channel inoperable.	A.1 Restore channel to OPERABLE status.	48 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. ---------NOTE--------- RTCBs associated with one inoperable channel may be closed for up to 1 hour for the performance of an RPS CHANNEL FUNCTIONAL TEST. --------------------- One channel of Manual Trip, RTCBs, or Initiation Logic inoperable in MODE 1 or 2.	B.1	Open the affected RTCBs.	1 hour
C. ---------NOTE--------- RTCBs associated with one inoperable channel may be closed for up to 1 hour for the performance of an RPS CHANNEL FUNCTIONAL TEST. --------------------- One channel of Manual Trip, RTCBs, or Initiation Logic inoperable in MODE 3, 4, or 5.	C.1	Open all RTCBs.	48 hours
D. Two channels of RTCBs or Initiation Logic affecting the same trip leg inoperable.	D.1	Open the affected RTCBs.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time of Condition A, B, or D not met. OR One or more Functions with more than one Manual Trip, Matrix Logic, Initiation Logic, or RTCB channel inoperable for reasons other than Condition A or D.	E.1 Be in MODE 3. AND E.2 Open all RTCBs.	6 hours 6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.4.1	Perform a CHANNEL FUNCTIONAL TEST on each RTCB channel.	31 days
SR 3.3.4.2	Perform a CHANNEL FUNCTIONAL TEST on each RPS Logic Channel.	120 days
SR 3.3.4.3	Perform a CHANNEL FUNCTIONAL TEST, including separate verification of the undervoltage and shunt trips, on each RTCB.	18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.4	Perform a CHANNEL FUNCTIONAL TEST on each RPS Manual Trip channel.	Once within 7 days prior to each reactor startup

3.3 INSTRUMENTATION

3.3.5 Engineered Safety Features Actuation System (ESFAS) Instrumentation

LCO 3.3.5 Four ESFAS trip and bypass removal channels for each Function in Table 3.3.5-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.5-1.

ACTIONS

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

1. Separate Condition entry is allowed for each ESFAS Function.

2. If a channel is placed in bypass, continued operation with the channel in the bypassed condition for the Completion Time specified by Required Action A.2, B.2, or E.2.2 shall be reviewed by the Onsite Review Committee.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one automatic ESFAS trip channel inoperable (other than RWST Level-Low for the RAS function or SG Pressure-Low or SG Pressure Difference-High for the EFAS function).	A.1 Place Functional Unit in bypass or trip. AND A.2 Restore channel to OPERABLE status.	1 hour Prior to entering MODE 2 following next MODE 5 entry
B. One automatic trip channel inoperable for RWST Level-Low for the RAS function or SG Pressure-Low or SG Pressure Difference-High for the EFAS function.	B.1 Place Functional Unit in bypass. AND B.2 Restore channel to OPERABLE status.	1 hour Prior to entering MODE 2 following next MODE 5 entry

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One or more Functions with two automatic ESFAS trip channels inoperable (other than RWST Level-Low for the RAS function or SG Pressure-Low or SG Pressure Difference-High for the EFAS Function).	C.1	--------NOTE--------- LCO 3.0.4 is not applicable. --------------------- Place one Functional Unit in bypass and the other in trip.	1 hour
D. Two automatic ESFAS trip channels inoperable for RWST Level-Low for the RAS function or SG Pressure-Low or SG Pressure Difference-High for the EFAS function.	D.1	--------NOTE--------- LCO 3.0.4 is not applicable. --------------------- Place one Functional Unit in bypass and the other in trip.	1 hour
	AND		
	D.2	Restore one affected automatic trip channel to OPERABLE status.	7 days
E. One or more Functions with one automatic bypass removal channel inoperable.	E.1	Disable bypass channel.	1 hour
	OR		
	E.2.1	Place affected automatic trip channel in bypass or trip.	1 hour
	AND		
	E.2.2	Restore bypass removal channel and associated automatic trip channel to OPERABLE status.	Prior to entering MODE 2 following next MODE 5 entry
			(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. One or more Functions with two automatic bypass removal channels inoperable.	------------NOTE------------ LCO 3.0.4 is not applicable. ----------------------------	
	F.1 Disable bypass channels.	1 hour
	<u>OR</u>	
	F.2 Place one affected automatic trip channel in bypass and place the other in trip.	1 hour
G. Required Action and associated Completion Time for Safety Injection Actuation Signal, Containment Spray Actuation Signal, Containment Isolation Actuation Signal, Main Steam Isolation Signal, or Emergency Feedwater Actuation Signal not met.	G.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	G.2 Be in MODE 4.	12 hours
H. Required Action and associated Completion Time for Recirculation Actuation Signal not met.	H.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	H.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.5.1	Perform a CHANNEL CHECK of each ESFAS channel.	12 hours
SR 3.3.5.2	Perform a CHANNEL FUNCTIONAL TEST of each ESFAS channel.	30 days on a STAGGERED TEST BASIS
SR 3.3.5.3	Perform a CHANNEL FUNCTIONAL TEST of each ESFAS channel bypass removal function.	120 days
SR 3.3.5.4	Perform a CHANNEL CALIBRATION of Function 5, Recirculation Actuation Signal.	18 months
SR 3.3.5.5	Perform a CHANNEL CALIBRATION of each ESFAS channel, with the exception of Function 5, including bypass removal functions.	24 months
SR 3.3.5.6	Verify ESF RESPONSE TIME is within limits.*	24 months on a STAGGERED TEST BASIS
SR 3.3.5.7	Perform a CHANNEL FUNCTIONAL TEST on each automatic bypass removal channel.	Once within 120 days prior to each reactor startup

*Verification of the RESPONSE TIME of the 30 subgroup relays identified in the February 18, 1997 Edison letter is not applicable until return to Mode 4 from the Unit 3 Cycle 9 refueling outage, with the additional commitments made in the February 18, 1997 letter. The safety justification for not performing this testing is also included in the February 18, 1997 letter.

Table 3.3.5-1 (page 1 of 1)
Engineered Safety Features Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	ALLOWABLE VALUE
1. Safety Injection Actuation Signal(a)		
a. Containment Pressure — High	1,2,3	≤ 3.7 psig
b. Pressurizer Pressure — Low(b)		≥ 1700 psia
2. Containment Spray Actuation Signal(e)		
a. Containment Pressure — High-High	1,2,3	≤ 15.0 psig
3. Containment Isolation Actuation Signal		
a. Containment Pressure — High	1,2,3	≤ 3.7 psig
4. Main Steam Isolation Signal		
a. Steam Generator Pressure — Low(c)	1,2(d),3(d)	≥ 729 psia
5. Recirculation Actuation Signal		
a. Refueling Water Storage Tank Level — Low	1,2,3,4	19.27% ≥ tap span ≥ 17.73%
6. Emergency Feedwater Actuation Signal SG #1 (EFAS-1)		
a. Steam Generator Level — Low	1,2,3	≥ 20%
b. SG Pressure Difference — High		≤ 140 psid
c. Steam Generator Pressure — Low(c)		≥ 729 psia
7. Emergency Feedwater Actuation Signal SG #2 (EFAS-2)		
a. Steam Generator Level — Low	1,2,3	≥ 20%
b. SG Pressure Difference — High		≤ 140 psid
c. Steam Generator Pressure — Low (c)		≥ 729 psia

(a) Automatic SIAS also initiates a Containment Cooling Actuation Signal (CCAS).

(b) The setpoint may be decreased to a minimum value of 300 psia, as pressurizer pressure is reduced, provided the margin between pressurizer pressure and the setpoint is maintained ≤ 400 psia. Trips may be bypassed when pressurizer pressure is < 400 psia decreasing. Bypass shall be automatically removed before pressurizer exceeds 500 psia (the corresponding bistable allowable value is ≤ 472 psia).

(c) The setpoint may be decreased as steam pressure is reduced, provided the margin between steam pressure and the setpoint is maintained ≤ 200 psi. The setpoint shall be automatically increased to the normal setpoint as steam pressure is increased.

(d) The Main Steam Isolation Signal Function (Steam Generator Pressure — Low) is not required to be OPERABLE when all associated valves isolated by the MSIS Function are closed and de-activated.

(e) Automatic SIAS is required for Containment Spray Actuation Signal (CSAS).

3.3 INSTRUMENTATION

3.3.6 Engineered Safety Features Actuation System (ESFAS) Logic and Manual Trip

LCO 3.3.6 Six channels of ESFAS Matrix Logic, four channels of ESFAS Initiation Logic, two channels of Actuation Logic, and two channels of Manual Trip shall be OPERABLE for each Function according to Table 3.3.6-1.

APPLICABILITY: According to Table 3.3.6-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ---------NOTE--------- This action also applies when three Matrix Logic channels are inoperable due to a common power source failure de-energizing three matrix power supplies. --------------------- One or more Functions with one Matrix Logic channel inoperable.	A.1 Restore channel to OPERABLE status.	48 hours
B. One or more Functions with one Manual Trip or Initiation Logic channel inoperable.	B.1 Restore channel to OPERABLE status.	48 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One or more Functions with two Initiation Logic channels affecting the same trip leg inoperable.	C.1	Initiate action to open at least one contact in the affected trip leg of both ESFAS Actuation Logic.	Immediately
	<u>AND</u>		
	C.2	Restore channels to OPERABLE status.	48 hours
D. One or more Functions with one Actuation Logic channel inoperable.	D.1	--------NOTE--------- One channel of Actuation Logic may be bypassed for up to 1 hour for Surveillances, provided the other channel is OPERABLE. ---------------------	
		Restore inoperable channel to OPERABLE status.	48 hours
E. Required Action and associated Completion Time of Conditions for Main Steam Isolation Signal, Containment Spray Actuation Signal, or Emergency Feedwater Actuation Signal not met.	E.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	E.2	Be in MODE 4.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
F. Required Action and associated Completion Time of Conditions for Safety Injection Actuation Signal, Containment Isolation Actuation Signal, Recirculation Actuation Signal, or Containment Cooling Actuation Signal not met.	F.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	F.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.6.1	-------------------NOTE------------------- Testing of Actuation Logic shall include the verification of the proper operation of each initiation relay. -- Perform a CHANNEL FUNCTIONAL TEST on each ESFAS logic channel.	120 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.2	-------------------NOTE-------------------- Relays exempt from testing during operation shall be tested during each MODE 5 entry exceeding 24 hours unless tested during the previous 6 months. --- Perform a subgroup relay test of each Actuation Logic channel, which includes the de-energization of each subgroup relay and verification of the OPERABILITY of each subgroup relay.	184 days
SR 3.3.6.3	Perform a CHANNEL FUNCTIONAL TEST on each ESFAS Manual Trip channel.	24 months

Table 3.3.6-1 (page 1 of 1)
Engineered Safety Features Actuation System Logic and Manual Trip Applicability

FUNCTION	APPLICABLE MODES
1. Safety Injection Actuation Signal	
a. Matrix Logic	1,2,3
b. Initiation Logic	1,2,3,4[c]
c. Actuation Logic	1,2,3,4
d. Manual Trip	1,2,3,4
2. Containment Isolation Actuation Signal	
a. Matrix Logic	1,2,3
b. Initiation Logic	1,2,3,4[c]
c. Actuation Logic	1,2,3,4
d. Manual Trip	1,2,3,4
3. Containment Cooling Actuation Signal[a]	
a. Initiation Logic	1,2,3,4[c]
b. Actuation Logic	1,2,3,4
c. Manual Trip	1,2,3,4
4. Recirculation Actuation Signal	
a. Matrix Logic	1,2,3,4
b. Initiation Logic	1,2,3,4
c. Actuation Logic	1,2,3,4
5. Containment Spray Actuation Signal[b]	
a. Matrix Logic	1,2,3
b. Initiation Logic	1,2,3
c. Actuation Logic	1,2,3
d. Manual Trip	1,2,3
6. Main Steam Isolation Signal	
a. Matrix Logic	1,2,3
b. Initiation Logic	1,2,3
c. Actuation Logic	1,2,3
d. Manual Trip	1,2,3
7. Emergency Feedwater Actuation Signal SG #1 (EFAS-1)	
a. Matrix Logic	1,2,3
b. Initiation Logic	1,2,3
c. Actuation Logic	1,2,3
d. Manual Trip	1,2,3
8. Emergency Feedwater Actuation Signal SG #2 (EFAS-2)	
a. Matrix Logic	1,2,3
b. Initiation Logic	1,2,3
c. Actuation Logic	1,2,3
d. Manual Trip	1,2,3

(a) Automatic SIAS also initiates CCAS.

(b) Automatic SIAS also required for automatic CSAS initiation.

(c) Only the portions of initiation Logic necessary for manual trip are required in MODE 4.

3.3 INSTRUMENTATION

3.3.7 Diesel Generator (DG) — Undervoltage Start

LCO 3.3.7 Four channels of Loss of Voltage Function and four channels of Degraded Voltage Function auto-initiation instrumentation per DG shall be OPERABLE.

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

ACTIONS

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

1. Separate Condition entry is allowed for each Function.

2. If a channel is placed in bypass, continued operation with the channel in the bypassed condition for the Completion Time specified by Required Action A.2 shall be reviewed by the Onsite Review Committee.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one channel per DG inoperable.	A.1 Place channel in bypass or trip.	1 hour
	AND	
	A.2 Restore channel to OPERABLE status.	Prior to entering MODE 2 following next MODE 5 entry

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One or more Functions with two channels per DG inoperable.	B.1	Enter applicable Conditions and Required Actions for the associated DG made inoperable by DG—Undervoltage Start instrumentation.	1 hour
	<u>OR</u>		
	B.2	--------NOTE--------- LCO 3.0.4 is not applicable. --------------------- Place one channel in bypass and the other channel in trip.	1 hour
C. One or more Functions with more than two channels inoperable.	C.1	Restore at least two channels to OPERABLE status.	1 hour
D. Required Action and associated Completion Time not met.	D.1	Enter applicable Conditions and Required Actions for the associated DG made inoperable by DG—Undervoltage Start instrumentation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.7.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.7.2	Perform CHANNEL FUNCTIONAL TEST.	24 months
SR 3.3.7.3	Perform CHANNEL CALIBRATION with setpoint Allowable Values as follows: a. Degraded Voltage Function: i. Dropout ≥ 4109.0 V ii. Pickup ≤ 4153.1 V SDVS (Sustained Degraded Grid Voltage Signal): Time delay: i. 127D ≤ 2.17 seconds. ii. 162D ≥ 78 seconds and ≤ 128 seconds. DGVSS (Degraded Grid Voltage with SIAS Signal): Time delay: i. 127D ≥ 1.83 seconds and ≤ 2.17 seconds. ii. 162S ≥ 4.16 seconds and ≤ 4.44 seconds. iii. 162T ≥ 0.88 seconds and ≤ 1.62 seconds. b. Loss of Voltage Function ≥ 3644.89 V and ≤ 3694.52 V. Time delay: ≥ 0.69 seconds and ≤ 1.0 seconds (voltage change from 115.5 V to 57.0 V).	24 months

3.3 INSTRUMENTATION

3.3.8 Containment Purge Isolation Signal (CPIS)

LCO 3.3.8 One CPIS channel shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4,
During CORE ALTERATIONS,
During movement of fuel assemblies within containment.

---------------------------NOTE---------------------------
Only required when the penetration is not isolated by appropriate closed and de-activated automatic valve(s), closed manual valve(s), or blind flange(s).

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. CPIS Actuation Logic, or one or more required channels of containment airborne radiation monitors inoperable in MODES 1, 2, 3, and 4.	A.1	Enter applicable Conditions and Required Actions for affected valves of LCO 3.6.3, "Containment Isolation Valves," made inoperable by CPIS instrumentation.	Immediately
B. Required Action and associated Completion Time not met in MODES 1, 2, 3, or 4.	B.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	B.2	Be in MODE 5.	36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One or more required channels of containment airborne radiation monitors inoperable in MODES 1, 2, 3, and 4.	C.1	Enter applicable conditions and required actions of LCO 3.4.15, "RCS Leak Detection."	Immediately
D. CPIS Manual Trip, Actuation Logic, or one or more required channels of containment airborne radiation monitors inoperable during CORE ALTERATIONS or movement of fuel assemblies within containment.	-------------NOTE------------ The provisions of LCO 3.0.3 are not applicable. -----------------------------		
	D.1	Place and maintain containment purge supply and exhaust valves in closed position.	Immediately
	<u>OR</u>		
	D.2.1	Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>		
	D.2.2	Suspend movement of fuel assemblies in containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.8.1	Perform a CHANNEL CHECK on required containment airborne radiation monitor channel.	12 hours

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.8.2	Perform a CHANNEL FUNCTIONAL TEST on each required containment airborne radiation monitor channel. Verify trip setpoint is in accordance with the following: Containment Airborne Radiation Monitor: set sufficiently high to prevent spurious alarms/trips yet sufficiently low to assure an alarm/trip should an inadvertent release occur.	92 days
SR 3.3.8.3	-------------------NOTE------------------- Surveillance of Actuation Logic shall include the actuation of each initiation relay and verification of the proper operation of each initiation relay. -- Perform a CHANNEL FUNCTIONAL TEST on required CPIS Actuation Logic channel.	24 months
SR 3.3.8.4	Perform a CHANNEL CALIBRATION on required containment airborne radiation monitor channel.	24 months
SR 3.3.8.5	Verify that response time of required CPIS channel is within limits.	24 months
SR 3.3.8.6	Perform CHANNEL FUNCTIONAL TEST on required CPIS Manual Trip channel.	24 months

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3.3 INSTRUMENTATION

3.3.9 Control Room Isolation Signal (CRIS)

LCO 3.3.9 One CRIS channel shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of fuel assemblies within containment,
During movement of fuel assemblies in the fuel storage pool.

ACTIONS

---------------------------NOTES---------------------------
1. The provisions of LCO 3.0.3 are not applicable.
2. The provisions of LCO 3.0.4 are not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. CRIS Manual Trip, Actuation Logic, or one required channel of control room airborne radiation monitors inoperable in MODES 1, 2, 3, or 4.	A.1 --------NOTE--------- Place Control Room Emergency Air Cleanup System (CREACUS) in isolation mode if automatic transfer to isolation mode inoperable. --------------------- Place one CREACUS train in emergency mode.	 1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. CRIS Manual Trip, Actuation Logic, or required control room airborne radiation monitors inoperable in MODE 5 or 6, or during movement of fuel assemblies within containment, or during the movement of fuel assemblies in the fuel storage pool.	B.1	---------NOTE--------- Place CREACUS in isolation mode if automatic transfer to isolation mode inoperable. --------------------- Place one CREACUS train in emergency mode.	Immediately
	<u>OR</u>		
	B.2.1	Suspend movement of fuel assemblies within containment.	Immediately
	<u>AND</u>		
	B.2.2	Suspend movement of fuel assemblies in the fuel storage pool.	Immediately
	<u>AND</u>		
	B.2.3	---------NOTE--------- Limited plant control operations are allowed provided the changes are accounted for in the calculated SDM. --------------------- Suspend positive reactivity additions.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.9.1	Perform a CHANNEL CHECK on the required control room airborne radiation monitor channel.	12 hours

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.9.2	Perform a CHANNEL FUNCTIONAL TEST on required CRIS airborne radiation monitor channel. Verify CRIS high radiation setpoint is ≤ 4E2 cpm above normal background.	92 days
SR 3.3.9.3	------------------NOTE------------------ Surveillance of Actuation Logic shall include the verification of the proper operation of each initiation relay. -- Perform a CHANNEL FUNCTIONAL TEST on required CRIS Actuation Logic channel.	18 months
SR 3.3.9.4	Perform a CHANNEL CALIBRATION on required CRIS airborne radiation monitor channel.	18 months
SR 3.3.9.5	Perform a CHANNEL FUNCTIONAL TEST on required CRIS Manual Trip channel.	18 months
SR 3.3.9.6	Verify that response time of required CRIS channel is within limits.	18 months

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3.3 INSTRUMENTATION

3.3.11 Post Accident Monitoring Instrumentation (PAMI)

LCO 3.3.11 The PAMI for each Function in Table 3.3.11-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

1. LCO 3.0.4 not applicable.

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. ---------NOTE--------- Not applicable to Functions 18, 21, 24, or 25. --------------------- 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	Prepare and submit a Special Report to the NRC in accordance with Specification 5.7.2.	30 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One or more Functions with two required channels inoperable.	C.1	Restore one channel to OPERABLE status.	7 days
D. Required channel of Functions 18, 21, 24, or 25 inoperable.	D.1	Restore required channel to OPERABLE status.	7 days
E. Required Action and associated Completion Time of Condition C or D not met.	E.1	Enter the Condition referenced in Table 3.3.11-1 for the channel.	Immediately
F. As required by Required Action E.1 and referenced in Table 3.3.11-1.	F.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	F.2	Be in MODE 4.	12 hours
G. As required by Required Action E.1 and referenced in Table 3.3.11-1.	G.1	Prepare and submit a Special Report to the NRC in accordance with Specification 5.7.2.	30 days

SURVEILLANCE REQUIREMENTS

-----NOTE-----
These SRs apply to each PAMI Function in Table 3.3.11-1, with exceptions noted.

SURVEILLANCE		FREQUENCY
SR 3.3.11.1	Perform CHANNEL CHECK for Function 9.	12 hours
SR 3.3.11.2	Perform CHANNEL CHECK for each required instrumentation channel, except Function 9, that is normally energized.	31 days
SR 3.3.11.3	Perform CHANNEL FUNCTIONAL TEST for function 9.	31 days
SR 3.3.11.4	Perform CHANNEL CALIBRATION, for functions 2,3,14,15,16,17, and 20.	18 months
SR 3.3.11.5	Perform CHANNEL CALIBRATION for functions 1,4,5,6,7,8,9,11,12,13,18, 19,21,22,23,24,25,26, and 27.	24 months

Table 3.3.11-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

	FUNCTION	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTION F.1
1.	Excore Neutron Flux	2	F
2.	Reactor Coolant System Hot Leg Temperature	2 (1 per steam generator)	F
3.	Reactor Coolant System Cold Leg Temperature	2 (1 per steam generator)	F
4.	Reactor Coolant System Pressure (wide range)	2	F
5.	Reactor Vessel Water Level	2[d]	G
6.	Containment Water Level (wide range)	2	F
7.	Containment Pressure (wide range)	2	F
8.	Containment Isolation Valve Position	2 per penetration flow path[a][b]	F
9.	Containment Area Radiation (high range)	2	G
10.	Deleted		
11.	Pressurizer Level	2	F
12.	Steam Generator Water Level (wide range)	2 per steam generator	F
13.	Condensate Storage Tank Level	2	F
14.	Core Exit Temperature – Quadrant 1	2[c]	F
15.	Core Exit Temperature – Quadrant 2	2[c]	F
16.	Core Exit Temperature – Quadrant 3	2[c]	F
17.	Core Exit Temperature – Quadrant 4	2[c]	F
18.	Auxiliary Feedwater Flow	1 per steam generator	F
19.	Containment Pressure (narrow range)	2	F
20.	Reactor Coolant System Subcooling Margin Monitor	2	F
21.	Pressurizer Safety Valve Position Indication	1 per valve	F
22.	Containment Temperature	2	F
23.	Containment Water Level (narrow range)	2	F
24.	HPSI Flow Cold Leg	1 per cold leg	F
25.	HPSI Flow Hot Leg	1 per hot leg	F
26.	Steam Line Pressure	2 per steam generator	F
27.	Refueling Water Storage Tank Level	2	F

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

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

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

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

3.3 INSTRUMENTATION

3.3.12 Remote Shutdown System

LCO 3.3.12 The Remote Shutdown System Functions in Table 3.3.12-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

1. LCO 3.0.4 is not applicable.
2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions inoperable.	A.1 Restore required Functions to OPERABLE status.	30 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 3.3.12.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days
SR 3.3.12.2	-------------------NOTE------------------- Neutron detectors are excluded from the CHANNEL CALIBRATION. -- Perform CHANNEL CALIBRATION for each required instrumentation channel.	24 months

Table 3.3.12-1 (page 1 of 1)
Remote Shutdown System Instrumentation and Controls

FUNCTION/INSTRUMENT OR CONTROL PARAMETER	REQUIRED NUMBER OF CHANNELS
1. Reactivity Control	
a. Source Range Neutron Flux	1
b. Boric Acid Makeup Tank Level	1
2. Vital Auxiliaries	
a. Diesel Generator Voltage	1
b. Diesel Generator Frequency	1
3. Reactor Coolant System Inventory Control	
a. Pressurizer Level	1
4. Reactor Coolant System Pressure Control	
a. Pressurizer Pressure	1
5. Decay Heat Removal (via Steam Generators)	
a. Reactor Coolant Hot Leg Temperature	1 per loop
b. Reactor Coolant Cold Leg Temperature	1 per loop
c. Steam Generator Pressure	1 per steam generator
d. Steam Generator Level Narrow Range	1 per steam generator
e. Condensate Storage Tank Level	1

3.3 INSTRUMENTATION

3.3.13 Source Range Monitoring Channels

LCO 3.3.13 Two channels of source range monitoring instrumentation shall be OPERABLE.

APPLICABILITY: MODES 3, 4, and 5, with the reactor trip circuit breakers open or Control Element Assembly (CEA) Drive System not capable of CEA withdrawal.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more required channels inoperable.	A.1	---------NOTE--------- Limited plant control operations are allowed provided the changes are accounted for in the calculated SDM. ---------------------	
		Suspend all operations involving positive reactivity additions.	Immediately
	<u>AND</u>		
	A.2	Perform SDM verification in accordance with SR 3.1.1.2, if $T_{avg} > 200°F$, or SR 3.1.2.1, if $T_{avg} \le 200°F$.	4 hours <u>AND</u> Once per 12 hours thereafter

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.13.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.13.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.13.3	-------------------NOTE------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. -- Perform CHANNEL CALIBRATION.	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.1 RCS DNB (Pressure, Temperature, and Flow) Limits

LCO 3.4.1 RCS parameters for pressurizer pressure, cold leg temperature, and RCS total flow rate shall be within the limits 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. Pressurizer pressure or RCS flow rate not within limits.	A.1 Restore parameter(s) to within limit.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 2.	6 hours
C. RCS cold leg temperature not within limits.	C.1 Restore cold leg temperature to within limits.	2 hours
D. Required Action and associated Completion Time of Condition C not met.	D.1 Reduce THERMAL POWER to ≤ 30% RTP.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.1.1	Verify pressurizer pressure is within the limits specified in the COLR.	12 hours
SR 3.4.1.2	Verify RCS cold leg temperature is within the limits specified in the COLR.	12 hours

(continued)

ACTIONS (continued)

SURVEILLANCE		FREQUENCY
-----------------NOTE----------------- Required to be met in MODE 1 with all RCPs running.		
SR 3.4.1.3	Verify RCS total flow rate is greater than or equal to the limits specified in the COLR.	12 hours

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.2 RCS Minimum Temperature for Criticality

LCO 3.4.2 Each RCS loop cold leg temperature (T_c) shall be $\geq$ 522°F.

APPLICABILITY: MODE 1, THERMAL POWER $\leq$ 30% RTP and T_c < 535°F, and
MODE 2, $K_{eff} \geq 1.0$ and T_c < 535°F.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. T_c in one or more RCS loops not within limit.	A.1 Be in MODE 3.	30 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.2.1 Verify RCS T_c in each loop $\geq$ 522°F.	30 minutes

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 RCS Pressure and Temperature (P/T) Limits

LCO 3.4.3 The combination of RCS pressure, RCS temperature and RCS heatup and cooldown rates shall be maintained within the limits as specified in the RCS PRESSURE-TEMPERATURE LIMITS REPORT (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. AND A.2 Determine RCS is acceptable for continued operation.	30 minutes 72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5 with RCS pressure < 500 psia.	6 hours 36 hours
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. AND C.2 Determine RCS is acceptable for continued operation.	Immediately 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 within limits specified in the PTLR.	30 minutes
SR 3.4.3.2	The reactor vessel material irradiation surveillance specimens shall be removed and examined, to determine changes in material properties, as required by 10 CFR 50 Appendix H. The results of these examinations shall be used to update the PTLR.	In accordance with requirements of 10CFR 50 Appendix H

FIGURE 3.4.3-1
DELETED

FIGURE 3.4.3-2
DELETED

FIGURE 3.4.3-3
DELETED

FIGURE 3.4.3-4
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FIGURE 3.4.3-5
DELETED

TABLE 3.4.3-1
DELETED

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3.1 Pressurizer Heatup and Cooldown Limits

LCO 3.4.3.1 Pressurizer heatup and cooldown rates shall be maintained within the following limits:

a. A maximum heatup of 200°F in any 1 hour period,

b. A maximum cooldown of 200°F in any 1 hour period.

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. <u>AND</u> A.2 Determine Pressurizer is acceptable for continued operation.	30 minutes 72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 5 with RCS pressure < 500 psia.	6 hours 36 hours

(continued)

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 Pressurizer is acceptable for continued operation.	Prior to entering MODE 4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.3.1.1	-------------------NOTE-------------------- Only required to be performed during Pressurizer heatup and cooldown operations. -- Verify Pressurizer heatup and cooldown rates within the following limits: a. A maximum heatup of 200°F in any 1 hour period, b. A maximum cooldown of 200°F in any 1 hour period.	30 minutes
SR 3.4.3.1.2	The spray water temperature differential shall be determined for use in the UFSAR.	For each cycle of auxiliary spray operation and for each cycle of main spray operation when the RCS cold leg temperature is < 500°F.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.4 RCS Loops—MODES 1 and 2

LCO 3.4.4 Two 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.	12 hours

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.5 RCS Loops — MODE 3

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

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

All reactor coolant pumps may be de-energized for ≤ 1 hour per 8 hour period, provided:

a. No operations are permitted that would cause introduction into the RCS, coolant 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

(continued)

Correction letter of 2-6-2001

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.5.1	Verify required RCS loop is in operation.	12 hours
SR 3.4.5.2	Verify secondary side water level in each steam generator ≥ 50% (wide range).	12 hours
SR 3.4.5.3	Verify correct breaker alignment and indicated power available to the required pump that is not in operation.	7 days

Correction letter of 2-6-2001

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.6 RCS Loops – MODE 4

LCO 3.4.6 Two loops or trains consisting of any combination of RCS loops and shutdown cooling (SDC) trains shall be OPERABLE and at least one loop or train shall be in operation.

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

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

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

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

2. No RCP shall be started with any RCS cold leg temperature less than or equal to the LTOP enable temperature specified in the PTLR unless:

   a. Pressurizer water volume is < 900 ft^3, or

   b. Secondary side water temperature in each steam generator (SG) is < 100°F above each of the RCS cold leg temperatures.

APPLICABILITY: MODE 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required RCS loop inoperable. AND Two SDC trains inoperable.	A.1 Initiate action to restore a second loop or train to OPERABLE status.	Immediately
B. One required SDC train inoperable. AND Two required RCS loops inoperable.	B.1 Be in MODE 5.	24 hours
C. Required RCS loop(s) or SDC train(s) inoperable. OR No RCS loop or SDC train in operation.	C.1 Suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet SDM of LCO 3.1.1. AND C.2 Initiate action to restore one loop or train to OPERABLE status and operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	Verify at least one RCS loop or SDC train is in operation.	12 hours
SR 3.4.6.2	Verify secondary side water level in required SG(s) is ≥ 50% (wide range).	12 hours
SR 3.4.6.3	Verify the second required RCS Loop or SDC train is OPERABLE.	7 days

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.7 RCS Loops – MODE 5, Loops Filled

LCO 3.4.7 At least one of the following loop(s)/trains listed below shall be OPERABLE and in operation:

a. Reactor Coolant Loop 1 and its associated steam generator and at least one associated Reactor Coolant Pump;

b. Reactor Coolant Loop 2 and its associated steam generator and at least one associated Reactor Coolant Pump;

c. Shutdown Cooling Train A; or

d. Shutdown Cooling Train B

One additional Reactor Coolant Loop/shutdown cooling train shall be OPERABLE, or

The secondary side water level of each steam generator shall be greater than 50% (wide range).

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

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

   a. No operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SDM of LCO 3.1.2; and

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

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

3. One required RCS loop may be inoperable for up to 2 hours for surveillance testing provided that the other RCS loop or SDC train is OPERABLE and in operation.

(continued)

---------------------NOTES (continued)---------------------

4. No reactor coolant pump (RCP) shall be started with one or more of the RCS cold leg temperatures ≤ the temperature in the PTLR unless:

   a. The pressurizer water volume is < 900 ft^3 or

   b. The secondary side water temperature in each steam generator (SG) is < 100°F above each of the RCS cold leg temperatures.

5. A containment spray pump may be used in place of a low pressure safety injection pump in either or both shutdown cooling trains to provide shutdown cooling flow provided the reactor has been subcritical for a period > 24 hours and the RCS is fully depressurized and vented in accordance with LCO 3.4.12.1.

6. All SDC trains 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. Less than the required SDC trains/RCS loops OPERABLE. <u>AND</u> Any SG with secondary side water level not within limit.	A.1 Initiate action to restore the required SDC trains/RCS loops to OPERABLE status. <u>OR</u> A.2 Initiate action to restore SG secondary side water levels to within limits.	Immediately Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. No SDC train/RCS loop in operation.	B.1	Suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet SDM of LCO 3.1.2.	Immediately
	<u>AND</u>		
	B.2	Initiate action to restore required SDC train/RCS loop to operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.7.1	Verify at least one RCS loop or SDC train is in operation.	12 hours
SR 3.4.7.2	Verify required SG secondary side water level is > 50% (wide range).	12 hours
SR 3.4.7.3	Verify the second required RCS loop, SDC train or steam generator secondary is OPERABLE.	7 days

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.8 RCS Loops – MODE 5, Loops Not Filled

LCO 3.4.8 Two shutdown cooling (SDC) trains shall be OPERABLE and at least one SDC train shall be in operation.

---NOTES---

1. All SDC pumps may be de-energized for ≤ 15 minutes when switching from one train to another provided:
   a. The core outlet temperature is maintained > 10°F below saturation temperature;
   b. No operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SDM of LCO 3.1.2; and
   c. No draining operations to further reduce the RCS water volume are permitted.
2. The pump providing shutdown cooling may be de-energized for ≤ 1 hour per 8 hour period provided:
   a. The core outlet temperature is maintained > 10°F below saturation temperature; and
   b. No operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SDM of LCO 3.1.2.
3. One SDC train may be inoperable for ≤ 2 hours for surveillance testing provided the other SDC train is OPERABLE and in operation.
4. A containment spray pump may be used in place of a low pressure safety injection pump in either or both shutdown cooling trains to provide shutdown cooling flow provided the reactor has been sub-critical for a period > 24 hours and the RCS is fully depressurized and vented in accordance with LCO 3.4.12.1.

APPLICABILITY: MODE 5 with RCS loops not filled.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One SDC train inoperable.	A.1	Initiate action to restore SDC train to OPERABLE status.	Immediately
B. Both SDC trains inoperable. <u>OR</u> No SDC train in operation.	B.1	Suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet SDM of LCO 3.1.2.	Immediately
	<u>AND</u>		
	B.2	Initiate action to restore one SDC train to OPERABLE status and operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.8.1	Verify at least one SDC train is in operation.	12 hours
SR 3.4.8.2	Verify correct breaker alignment and indicated power available to the required SDC pump that is not in operation.	7 days

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 Pressurizer

LCO 3.4.9 The pressurizer shall be OPERABLE with:

a. Pressurizer water level ≤ 57%; 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 with reactor trip breakers open. AND A.2 Be in MODE 4.	6 hours 12 hours
B. One required group of pressurizer heaters inoperable.	B.1 Restore required group of pressurizer heaters to OPERABLE status.	72 hours
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

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	Verify pressurizer water level ≤ 57%.	12 hours
SR 3.4.9.2	Verify capacity of each required group of pressurizer heaters ≥ 150 kW.	92 days

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Pressurizer Safety Valves

LCO 3.4.10 Two pressurizer safety valves shall be OPERABLE with as found lift settings of 2500 psia, +3% or -2%.

APPLICABILITY: MODES 1, 2, and 3.

---NOTE---
The lift settings are not required to be within LCO limits during MODE 3 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. This exception is allowed for 36 hours following entry into MODE 3 provided a preliminary cold setting was made prior to heatup.

Each pressurizer safety valve has an as-found tolerance of +3% or -2%. Following testing in accordance with TS 5.5.2.10, pressurizer safety valves shall be set within ±1% of the specified setpoint.

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.	B.1	Be in MODE 3.	6 hours
	<u>AND</u>		
<u>OR</u>	B.2	Be in MODE 4.	12 hours
Two pressurizer safety valves inoperable.			

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.10.1	Verify each pressurizer safety valve is OPERABLE in accordance with inservice testing program. Following testing as-found lift settings shall be within +3% or -2%. However, pressurizer safety valves shall be set to within ±1% of the specified setpoint.	In accordance with the Inservice Testing Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.12.1 Low Temperature Overpressure Protection (LTOP) System

RCS Temperature ≤ PTLR Limit

LCO 3.4.12.1 No more than two high pressure safety injection pumps shall be OPERABLE, the safety injection tanks shall be isolated or depressurized to less than the limit specified in the PTLR and at least one of the following overpressure protection systems shall be OPERABLE:

a. The Shutdown Cooling System Relief Valve (PSV9349) with:

1) A lift setting of 406 ± 10 psig,

2) Relief Valve isolation valves 3HV9337, 3HV9339, 3HV9377, and 3HV9378 open,

or,

b. The Reactor Coolant System depressurized with an RCS vent of greater than or equal to 5.6 square inches.

APPLICABILITY: MODE 4 when the temperature of any one RCS cold leg is less than or equal to the enable temperatures specified in the PTLR,

MODE 5, and

MODE 6 when the head is on the reactor vessel and the RCS is not vented.

---------------------------NOTE---------------------------
SIT isolation or depressurization to less than the limits in the PTLR is only required when SIT pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed by the PTLR.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. With more than two HPSI pumps capable of injecting into the RCS.	A.1 Initiate action to verify a maximum of two HPSI pumps capable of injecting into the RCS.	Immediately
B. SIT pressure is greater than or equal to the maximum RCS pressure for existing cold leg temperature allowed in the PTLR.	B.1 Isolate affected SIT.	1 hour
C. Required Action and associated Completion Time of Condition B not met.	C.1 Depressurize affected SIT to less than the maximum RCS pressure for existing cold leg temperature allowed in the PTLR.	12 hours
D. With one or both SDCS Relief Valve isolation valves in a single SDCS Relief Valve isolation valve pair (valve pair 3HV9337 and 3HV9339 or valve pair 3HV9377 and 3HV9378) closed.	D.1 Open the closed valve(s). OR D.2 Power-lock open the OPERABLE SDCS Relief Valve isolation valve pair.	24 hours 24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. SDCS Relief Valve inoperable. OR Required Action and associated Completion Time of Condition A, C, or D not met. OR LTOP System inoperable for any reason other than Condition A, C, or D.	E.1 Reduce T_{avg} to less than 200°F, depressurize RCS and establish RCS vent of ≥ 5.6 square inches.	8 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.12.1.1	------------------NOTE------------------ A HPSI pump is secured by verifying that its motor circuit breaker is not racked-in, or its discharge valve is locked closed. The requirement to rack out the HPSI pump breaker is satisfied with the pump breaker racked out to its disconnected or test position. -- Verify a maximum of two HPSI pumps are capable of injecting into the RCS.	12 hours
SR 3.4.12.1.2	------------------NOTE------------------ Required to be performed when complying with the LCO 3.4.12.1 Note. -- Verify each SIT is isolated or depressurized less than the limit specified in the PTLR.	12 hours
SR 3.4.12.1.3	Verify RCS vent ≥ 5.6 square inches is open when in use for overpressure protection.	12 hours for unlocked open vent valve(s) <u>AND</u> 31 days for locked, sealed, or otherwise secured open vent valve(s), or open flanged RCS penetrations

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
	------------------NOTES--------------- 1. Only required to be performed when the SDCS Relief Valve isolation valve pair is inoperable. 2 The power-lock open requirement is satisfied either with the AC breakers open for valve pair 3HV9337 and 3HV9339 or the regulating transformer output breakers open for valve pair 3HV9377 and 3HV9378, whichever valve pair is OPERABLE. --	
SR 3.4.12.1.4	Verify the OPERABLE SDCS Relief Valve isolation valve pair (valve pair 3HV9337 and 3HV9339, or valve pair 3HV9377 and 3HV9378) is in the power-lock open condition.	12 hours
SR 3.4.12.1.5	Verify that SDCS Relief Valve isolation valves 3HV9337, 3HV9339, 3HV9377, and 3HV9378 are open when the SDCS Relief Valve is used for overpressure protection.	72 hours
SR 3.4.12.1.6	Verify SDCS Relief Valve Setpoint.	In accordance with the Inservice Testing Program

– effective as of the date of removal of the shutdown cooling system inverters (correction letter of 11-19-98)

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.12.2 Low Temperature Overpressure Protection (LTOP) System

RCS Temperature > PTLR Limit

LCO 3.4.12.2 At least one of the following overpressure protection systems shall be OPERABLE:

a. The Shutdown Cooling System Relief Valve (PSV9349) with:

   1) A lift setting of 406 ± 10 psig,

   2) Relief Valve isolation valves 3HV9337, 3HV9339, 3HV9377, and 3HV9378 open,

or,

b. A minimum of one pressurizer code safety valve with a lift setting of 2500 psia ± 1%.

APPLICABILITY: MODE 4 when the temperature of all RCS cold legs are greater than the enable temperatures specified in the PTLR.

---NOTES---

1. The lift setting pressure of the pressurizer code safety valve shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

2. The SDCS Relief Valve lift setting assumes valve temperatures less than or equal to 130°F.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. No pressurizer code safety valves OPERABLE. AND The SDCS Relief Valve INOPERABLE.	A.1	Be in MODE 5 and vent the RCS through a greater than or equal to 5.6 square inch vent.	8 hours
B. With one or both SDCS Relief Valve isolation valves in a single SDCS Relief Valve isolation valve pair (valve pair 3HV9337 and 3HV9339 or valve pair 3HV9377 and 3HV9378) closed.	B.1	Open the closed valve(s).	24 hours
	OR		
	B.2	Power-Lock open the OPERABLE SDCS Relief Valve isolation valve pair.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
	--------------------Note-------------------- Only required when the SDCS Relief Valve is being used for overpressure protection. --	
SR 3.4.12.2.1	Verify that the SDCS Relief Valve isolation valves 3HV9337, 3HV9339, 3HV9377, and 3HV9378 are open.	72 hours
SR 3.4.12.2.2	Verify relief valve setpoint.	In accordance with the Inservice Testing 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 limit.	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 in MODE 3 or 4 until 12 hours of steady state operation. 2. Not applicable to primary to secondary LEAKAGE. ---------- Perform RCS water inventory balance.	-----NOTE----- Only required to be performed during steady state operation. If a transient evolution is occurring 72 hours from the last water inventory balance, then a water inventory balance shall be performed within 120 hours of the last water inventory balance ---------- 72 hours
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 $\leq$ 150 gallons per day through any one SG.	72 hours

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 limits.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4, except valves in the shutdown cooling (SDC) flow path are not required to meet the requirements of this LCO when in the SDC mode of operation.

ACTIONS

-------------------------------------NOTE-------------------------------------
Separate Condition entry is allowed for each flow path.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. 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. ---------------------------	
	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	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2	Isolate the high pressure portion of the affected system from the low pressure portion by use of a second closed manual, deactivated automatic, or check valve.	72 hours
B. Required Action and associated Completion Time for Condition A not met.	B.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	B.2	Be in MODE 5.	36 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 SDC 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 specified in Table 3.4.14-1 is equivalent to $\leq$ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm at an RCS pressure $\geq$ 2215 psia and $\leq$ 2255 psia.	In accordance with the Inservice Testing Program or 24 months <u>AND</u> Prior to entering MODE 2 whenever the unit has been in MODE 5 for 7 days or more, if leakage testing has not been performed in the previous 9 months <u>AND</u> (continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.14.1 (continued)	Within 48 hours following valve actuation due to automatic or manual action or flow through the valve (for valves in Section B of Table 3.4.14-1)

Table 3.4.14-1
REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVES

SECTION A

VALVE NUMBER	VALVE DESCRIPTION
S31204MU018	HPSI Check to Loop #1A
S31204MU019	HPSI Check to Loop #1B
S31204MU020	HPSI Check to Loop #2A
S31204MU021	HPSI Check to Loop #2B
S31204MU152	Hot leg injection to loop #1
S31204MU156	Hot leg injection to loop #2
S31204MU157	Hot leg injection check
S31204MU158	Hot leg injection check
3HV-9337	SDC Suction Isolation
3HV-9339	SDC Suction Isolation
3HV-9377	SDC Suction Isolation
3HV-9378	SDC Suction Isolation

SECTION B

VALVE NUMBER	VALVE DESCRIPTION
S31204MU072	LPSI Check to Loop #1A
S31204MU073	LPSI Check to Loop #1B
S31204MU074	LPSI Check to Loop #2A
S31204MU075	LPSI Check to Loop #2B
S31204MU027*	Cold leg injection to loop #1A
S31204MU029*	Cold leg injection to loop #1B
S31204MU031*	Cold leg injection to loop #2A
S31204MU033*	Cold leg injection to loop #2B
S31204MU040	SIT T008 Check
S31204MU041	SIT T007 Check
S31204MU042	SIT T009 Check
S31204MU043	SIT T010 Check

*Redundant to LPSI and SIT checks

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 inlet flow monitoring system; and

b. One containment atmosphere gaseous radioactivity monitoring system; or one containment atmosphere particulate radioactivity monitoring system.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required containment sump inlet flow monitor inoperable.	------------NOTE------------ LCO 3.0.4 is not applicable. ----------------------------	
	A.1 Perform SR 3.4.13.1.	Once per 24 hours
	AND	
	A.2 Restore containment sump inlet flow monitoring system to OPERABLE status.	30 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required containment atmosphere radioactivity monitoring system inoperable.	------------NOTE------------ LCO 3.0.4 is not applicable. ----------------------------	
	B.1.1 Analyze grab samples of the containment atmosphere.	Once per 24 hours
	OR	
	B.1.2 Perform SR 3.4.13.1.	Once per 24 hours
	AND	
	B.2 Restore required containment atmosphere radioactivity monitoring system to OPERABLE status.	30 days
C. All required monitoring systems inoperable.	C.1 Perform SR 3.4.13.1.	Once per 12 hours
	AND	
	C.2 Restore at least one Leak Detection Instrument to OPERABLE status.	24 hours
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Be in MODE 3.	6 hours
	AND	
	D.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.15.1	Perform CHANNEL CHECK of the required containment atmosphere gaseous radioactivity monitor.	12 hours
SR 3.4.15.2	Perform CHANNEL CHECK of the required containment atmosphere particulate radioactivity monitor.	12 hours
SR 3.4.15.3	Perform CHANNEL FUNCTIONAL TEST of the required containment atmosphere gaseous radioactivity monitor.	92 days
SR 3.4.15.4	Perform CHANNEL FUNCTIONAL TEST of the required containment atmosphere particulate radioactivity monitor.	92 days
SR 3.4.15.5	Perform CHANNEL CALIBRATION of the required containment sump monitor.	24 months
SR 3.4.15.6	Perform CHANNEL CALIBRATION of the required containment atmosphere gaseous radioactivity monitor.	24 months
SR 3.4.15.7	Perform CHANNEL CALIBRATION of the required containment atmosphere particulate radioactivity monitor.	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 RCS Specific Activity

LCO 3.4.16 The specific activity of the reactor coolant shall be limited to:

a. DOSE EQUIVALENT I-131 specific activity ≤ 1.0 μCi/gm; and

b. Gross specific activity ≤ 100/$\bar{E}$ μCi/gm.

APPLICABILITY: MODES 1 and 2,
MODE 3 with RCS average temperature (T_{avg}) ≥ 500°F.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DOSE EQUIVALENT I-131 > 1.0 μCi/gm.	------- NOTE ------ The provisions of Specification 3.0.4 are not applicable. --------------	
	A.1 Verify DOSE EQUIVALENT I-131 within the acceptable region of Figure 3.4.16-1.	Once per 4 hours
	<u>AND</u>	
	A.2 Restore DOSE EQUIVALENT I-131 to within limit.	48 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. OR DOSE EQUIVALENT I-131 in the unacceptable region of Figure 3.4.16-1.	B.1 Be in MODE 3 with T_{avg} < 500°F.	6 hours
C. Gross specific activity of the reactor coolant not within limit.	C.1 Perform SR 3.4.16.2. AND C.2 Be in MODE 3 with T_{avg} < 500°F.	4 hours 6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.16.1 Verify reactor coolant gross specific activity ≤ 100/$\bar{E}$ μCi/gm.	7 days

(continued)

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 $\leq$ 1.0 μCi/gm.	14 days AND Between 2 and 6 hours after THERMAL POWER change of $\geq$ 15% RTP within a 1 hour period
SR 3.4.16.3	-------------------NOTE------------------- Not required to be performed until 31 days after a minimum of 2 EFPD and 20 days of MODE 1 operation have elapsed since the reactor was last subcritical for $\geq$ 48 hours. -- Determine $\bar{E}$ from a sample taken in MODE 1 after a minimum of 2 EFPD and 20 days of MODE 1 operation have elapsed since the reactor was last subcritical for $\geq$ 48 hours.	184 days

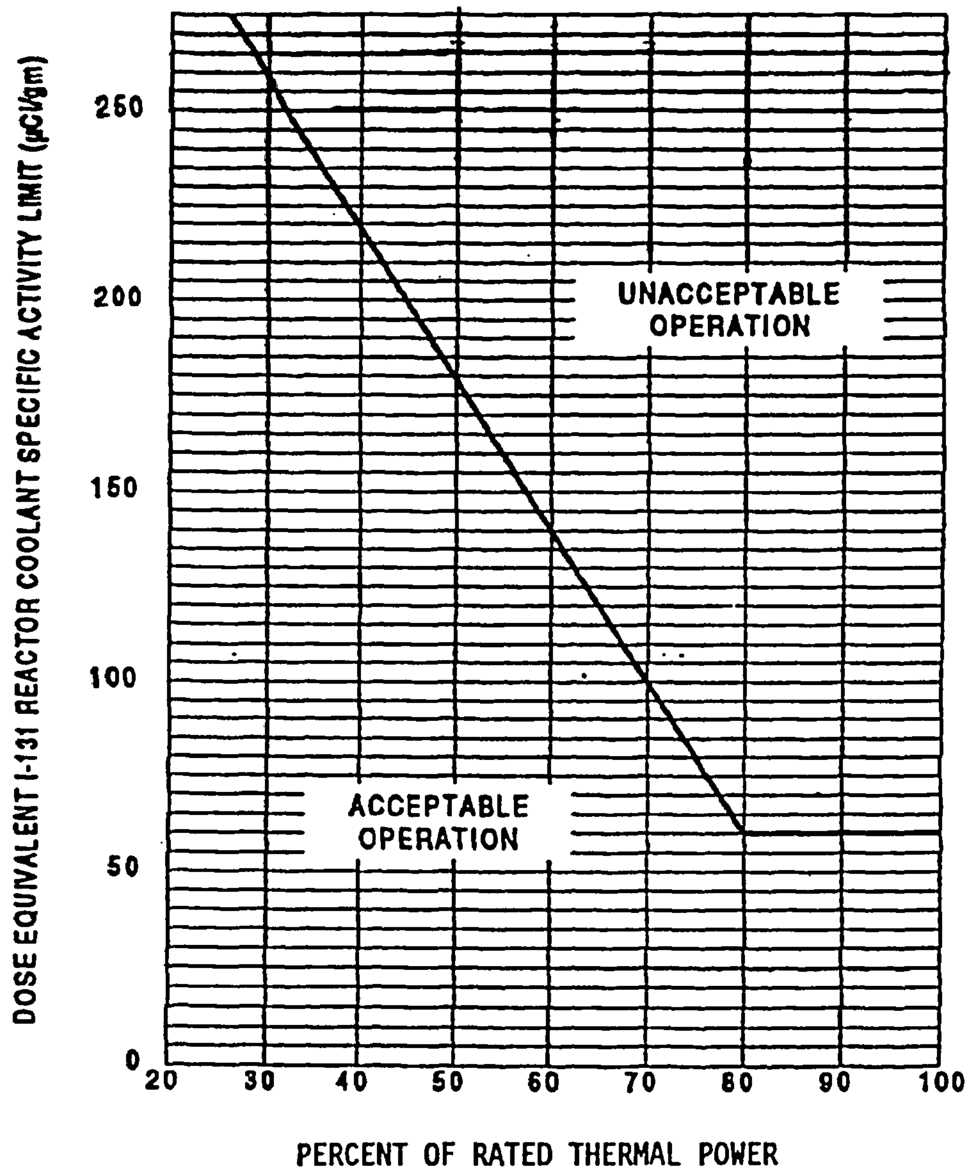

Figure 3.4.16-1 (page 1 of 1)
Reactor Coolant DOSE EQUIVALENT I-131 Specific Activity Limit Versus Percent of RATED THERMAL POWER With Reactor Coolant Specific Activity >1.0 μCi/gm DOSE EQUIVALENT I-131

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 repair-criteria shall be plugged in accordance with the Steam Generator Program.

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

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more SG tubes satisfying the tube repair criteria and not plugged in accordance with the Steam Generator Program.	A.1 Verify tube integrity of the affected tube(s) is maintained until the next refueling outage or SG tube inspection.	7 days
	AND	
	A.2 Plug the affected tube(s) in accordance with the Steam Generator Program.	Prior to entering MODE 4 following the next refueling outage or SG tube inspection
B. Required Action and associated Completion Time of Condition A not met. OR SG tube integrity not maintained.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 5.	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 repair 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 Safety Injection Tanks (SITs)

LCO 3.5.1 Four SITs shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with pressurizer pressure $\geq$ 715 psia.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One SIT inoperable due to boron concentration not within limits.	A.1	Restore boron concentration to within limits.	72 hours
B. One SIT inoperable due to inability to verify level or pressure.	B.1	Restore SIT to OPERABLE status.	72 hours
C. One SIT inoperable for reasons other than Condition A or B.	C.1	Restore SIT to OPERABLE status.	24 hours
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	Reduce pressurizer pressure to < 715 psia.	12 hours
E. Two or more SITs inoperable.	E.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.1.1	Verify each SIT isolation valve is fully open.	12 hours
SR 3.5.1.2	Verify borated water volume in each SIT is ≥ 1680 cubic feet and ≤ 1807 cubic feet.	12 hours
SR 3.5.1.3	Verify nitrogen cover pressure in each SIT is ≥ 615 psia and ≤ 655 psia.	12 hours
SR 3.5.1.4	Verify boron concentration in each SIT is ≥ 2200 ppm and ≤ 2800 ppm.	31 days AND -----NOTE------ Only required to be performed for affected SIT --------------- Once within 6 hours after each solution volume increase of ≥ 1% of tank volume that is not the result of addition from the refueling water storage tank

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.5	Verify power is removed from each SIT isolation valve operator when pressurizer pressure is $\geq$ 715 psia.	31 days

3.5.2 ECCS — Operating

LCO 3.5.2 Two ECCS trains shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with pressurizer pressure ≥ 400 psia.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One LPSI subtrain inoperable.	A.1 Restore subtrain to OPERABLE status.	7 days
B. One or more ECCS trains inoperable due to reason(s) other than Condition A. AND At least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available.	B.1 Restore ECCS train(s) to OPERABLE status.	72 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 pressurizer pressure to < 400 psia.	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 operators removed. Valve Number / Position / Function HV-9353 Closed SDC Warmup HV-9359 Closed SDC Warmup HV-8150 Closed SDC HX Isolation HV-8151 Closed SDC HX Isolation HV-8152 Closed SDC HX Isolation HV-8153 Closed SDC HX Isolation HV-0396 Closed SDC Bypass Flow Control HV-8161 Open SDC HX Bypass Flow Isolation HV-9420 Closed Hot Leg Injection Isolation HV-9434 Closed Hot Leg Injection Isolation HV-8160 Open SDC Bypass Flow Control HV-8162 Open LPSI Miniflow Isolation HV-8163 Open LPSI Miniflow Isolation	12 hours
SR 3.5.2.2	Verify the following valves are in the listed position with power available to the valve operators. Valve Number / Position / Function HV-9302 Closed CES Isolation HV-9303 Closed CES Isolation HV-9304 Closed CES Isolation HV-9305 Closed CES Isolation HV-9306 Open ECCS Train Miniflow HV-9307 Open ECCS Train Miniflow HV-9347 Open ECCS Train Miniflow HV-9348 Open ECCS Train Miniflow	12 hours
SR 3.5.2.3	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.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.4	Verify ECCS piping is full of water.	31 days
SR 3.5.2.5	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 3.5.2.6	Deleted	
SR 3.5.2.7	Verify each ECCS automatic valve in the flow path actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.5.2.8	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	24 months
SR 3.5.2.9	Verify each LPSI pump stops on an actual or simulated actuation signal.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.10	Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet trash racks and screens show no evidence of structural distress or abnormal corrosion.	24 months

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.3 ECCS—Shutdown

LCO 3.5.3 One high pressure safety injection (HPSI) train shall be OPERABLE.

APPLICABILITY: MODE 3 with pressurizer pressure < 400 psia,
MODE 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required HPSI train inoperable.	A.1 Restore required HPSI train to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 5.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.3.1 The following SRs are applicable: SR 3.5.2.2 SR 3.5.2.7 SR 3.5.2.3 SR 3.5.2.8 SR 3.5.2.4 SR 3.5.2.10 SR 3.5.2.5	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 of Condition A or B 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 > 100°F. -- Verify RWST borated water temperature is ≥ 40°F and ≤ 100°F.	24 hours
SR 3.5.4.2	Verify RWST borated water volume is ≥ 362,800 gallons above the ECCS suction connection.	7 days
SR 3.5.4.3	Verify RWST boron concentration is ≥ 2350 ppm and ≤ 2800 ppm.	7 days

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.5 Trisodium Phosphate (TSP) Dodecahydrate

LCO 3.5.5 The TSP Dodecahydrate baskets shall contain ≥ 291 ft^3 of TSP.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. TSP Dodecahydrate not within limits.	A.1 Restore TSP Dodecahydrate to within limits.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.5.1 Verify the TSP baskets contain ≥ 291 ft^3 of trisodium phosphate dodecahydrate crystals.	24 months
SR 3.5.5.2 Verify that a sample from the TSP baskets provides adequate pH adjustment of RWST water.	24 months

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.	6 hours
	AND	
	B.2 Be in MODE 5.	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
SR 3.6.1.2	Verify containment structural integrity in accordance with the Containment Tendon Surveillance Program.	In accordance with the Containment Tendon Surveillance Program

3.6 CONTAINMENT SYSTEMS

3.6.2 Containment Air Locks

LCO 3.6.2 Two containment air locks shall be OPERABLE.

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

ACTIONS

---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 leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment air locks with one containment air lock door inoperable.	---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. 3. The provisions of LCO 3.0.4 are not applicable. ---	(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.1 Verify the OPERABLE door is closed in the affected air lock.	1 hour
	AND	
	A.2 Lock the OPERABLE door closed in the affected air lock.	24 hours
	AND	
	A.3 --------NOTE--------- Air lock doors in high radiation areas may be verified locked closed by administrative means. ---------------------	
	Verify the OPERABLE door is locked closed in the affected air lock.	Once per 31 days
B. One or more 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. 3. The provisions of LCO 3.0.4 are not applicable. -----------------------------	

(continued)

ACTIONS

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

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.1	-------------------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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.2.2	-------------------NOTES------------------- 1. Only required to be performed upon entry into containment. 2. SR 3.0.4 is not applicable. -- Verify only one door in the air lock can be opened at a time.	184 days

3.6 CONTAINMENT SYSTEMS

3.6.3 Containment Isolation Valves

LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

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

ACTIONS

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

1. Penetration flow paths except for 42 inch purge valve penetration flow paths may be unisolated intermittently under administrative controls.
2. Separate Condition entry is allowed for each penetration flow path.
3. Enter applicable Conditions and Required Actions for system(s) made inoperable by containment isolation valves.
4. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage rate acceptance criteria.
5. Section A, B, C, D, and E isolation valves are located in the Licensee Controlled Specifications (LCS).
6. The Provisions of LCO 3.0.4 are not applicable.

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 purge valve leakage not within limit.	A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured. <u>AND</u>	4 hours

(continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 --------NOTE--------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. -------------------- Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside containment <u>AND</u> Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment
B. ---------NOTE--------- Only applicable to penetration flow paths with two Section A, B, C, or E containment isolation valves. --------------------- One or more penetration flow paths with two Section A, B, C, or E containment isolation valves inoperable except for purge valve leakage not within limit.	B.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	1 hour

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. ---------NOTE--------- Only applicable to penetration flow paths with only one containment isolation valve and a closed system. --------------------- One or more penetration flow paths with one Section A, B, C, or E containment isolation valve inoperable.	C.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	4 hours
	AND		
	C.2	--------NOTE--------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. --------------------- Verify the affected penetration flow path is isolated.	Once per 31 days
D. One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.	D.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve with resilient seals, closed manual valve with resilient seals, or blind flange.	24 hours
	AND		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. (continued)	D.2	---------NOTE--------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. --------------------- Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside 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 3.6.3.6 for the resilient seal purge valves closed to comply with Required Action D.1.	Once per 184 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One or more Section D.1 containment isolation valve(s) inoperable.	E.1 Secure the inoperable valve(s) in its ESFAS actuated position. AND E.2 Restore the inoperable valve(s) to OPERABLE status.	In accordance with the applicable LCO pertaining to the ESF system in which it is installed. Prior to entering MODE 4 from MODE 5 if MODE 5 entered within 30 days, otherwise within 30 days
F. One or more Section D.2 containment isolation valve(s) inoperable.	F.1 Secure the inoperable valve(s) in its ESFAS actuated position. AND F.2 Restore the inoperable valve(s) to OPERABLE status.	In accordance with the applicable LCO pertaining to the ESF system in which it is installed. Prior to entering MODE 4 from MODE 5.
G. Required Action and associated Completion Time not met.	G.1 Be in MODE 3. AND G.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

-----------------------------------NOTE-----------------------------------
Section A, B, C, D, and E isolation valves are located in the LCS.

SURVEILLANCE		FREQUENCY
SR 3.6.3.1	Verify each 42 inch purge valve is sealed closed except for one purge valve in a penetration flow path while in Condition D of this LCO.	31 days
SR 3.6.3.2	Verify each 8 inch purge valve is closed except when the 8 inch purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open.	31 days
SR 3.6.3.3	------------------NOTES------------------ 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. SR 3.0.4 is not applicable --- Verify each containment isolation manual valve and blind flange that is located outside containment and not locked, sealed, or otherwise secured and is required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.4	-------------------NOTES------------------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. SR 3.0.4 is not applicable. --- 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
SR 3.6.3.5	Verify the isolation time of each Section A and B power operated and each automatic containment isolation valve is within limits.	In accordance with the Inservice Testing Program
SR 3.6.3.6	-------------------NOTES------------------- Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1 --- Perform leakage rate testing for containment purge valves with resilient seals.	184 days <u>AND</u> Within 92 days after opening the valve

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.7	------------------NOTES------------------ 1. The provisions of the Inservice Testing Program are not applicable when the valves are secured open. 2. SR 3.0.4 is not applicable. --- Verify each Section D1 and D2 containment isolation valve is OPERABLE.	In accordance with the Inservice Testing Program and those SRs associated with those Specifications pertaining to each valve or system in which it is installed
SR 3.6.3.8	Verify each Section A, B, C, and E automatic containment isolation valve actuates to the isolation position on an actual or simulated actuation signal.	24 months

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure

LCO 3.6.4 Containment pressure shall be ≥ -0.3 psig and ≤ +1.5 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.	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 3.6.4.1 Verify containment pressure is within limits.	12 hours

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. <u>AND</u> 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.	24 hours

3.6 CONTAINMENT SYSTEMS

3.6.6.1 Containment Spray and Cooling Systems

LCO 3.6.6.1 Two containment spray trains and two containment cooling trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	7 days <u>AND</u> 14 days from discovery of failure to meet the LCO
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	6 hours 84 hours
C. One containment cooling train inoperable.	C.1 Restore containment cooling train to OPERABLE status.	7 days <u>AND</u> 14 days from discovery of failure to meet the LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Two containment cooling trains inoperable.	D.1	Restore one containment cooling train to OPERABLE status.	72 hours
E. Two containment spray trains inoperable. OR Any combination of three or more trains inoperable.	E.1	Enter LCO 3.0.3.	Immediately
F. Required Action and associated Completion Time of Condition C or D not met.	F.1	Be in MODE 3.	6 hours
	AND		
	F.2	Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6.1.1	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.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6.1.2	Operate each containment cooling train fan unit for ≥ 15 minutes.	31 days
SR 3.6.6.1.3	Verify each containment cooling train cooling water flow rate is ≥ 2000 gpm to each fan cooler.	31 days
SR 3.6.6.1.4	Verify the containment spray piping is full of water to within 10 feet of the lowest spray ring.	24 months
SR 3.6.6.1.5	Verify each automatic containment spray valve in the flow path actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.6.6.1.6	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	24 months
SR 3.6.6.1.7	Verify each containment cooling train starts automatically on an actual or simulated actuation signal.	24 months
SR 3.6.6.1.8	Verify each spray nozzle is unobstructed.	10 years

3.6 CONTAINMENT SYSTEMS

3.6.6.2 Containment Cooling Systems

LCO 3.6.6.2 Two containment cooling trains shall be OPERABLE.

APPLICABILITY: MODE 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One containment cooling train inoperable.	A.1 Restore containment cooling train to OPERABLE status.	7 days
B. Two containment cooling trains inoperable.	B.1 Restore one containment cooling train to OPERABLE status.	72 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6.2.1	Operate each containment cooling train fan unit for ≥ 15 minutes.	31 days
SR 3.6.6.2.2	Verify each containment cooling train cooling water flow rate is ≥ 2000 gpm to each fan cooler.	31 days
SR 3.6.6.2.3	Verify each containment cooling train starts automatically on an actual or simulated actuation signal.	24 months

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3.6 CONTAINMENT SYSTEMS

3.6.8 Containment Dome Air Circulators

LCO 3.6.8 Two dome air circulator trains shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One dome air circulator train inoperable.	A.1	--------NOTE-------- LCO 3.0.4 is not applicable. --------------------- Restore dome air circulator train to OPERABLE status.	 30 days
B. Two dome air circulator trains inoperable.	B.1	Verify by administrative means that the hydrogen control function is maintained.	1 hour
	<u>AND</u>		
	B.2	Restore one dome air circulator train to OPERABLE status.	7 days
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.8.1	Verify each dome air circulator flow rate is ≥ 37,000 cfm.	24 months
SR 3.6.8.2	Verify each dome air circulator train starts on an actual or simulated actuation signal.	24 months

3.7 PLANT SYSTEMS

3.7.1 Main Steam Safety Valves (MSSVs)

LCO 3.7.1 The MSSVs shall be OPERABLE as specified in Table 3.7.1-1 and Table 3.7.1-2.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Two to seven required MSSVs per SG inoperable.	A.1 Reduce power to less than or equal to the applicable % RTP listed in Table 3.7.1-1.	4 hours
	AND	
	A.2 Reduce the Linear Power Level High trip setpoint in accordance with Table 3.7.1-1.	36 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met. <u>OR</u> Eight or more required MSSVs per SG inoperable.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	6 hours 12 hours

Table 3.7.1-1 (page 1 of 1)
Maximum Allowable Power Level
versus Inoperable MSSVs

NUMBER OF INOPERABLE MSSVs PER STEAM GENERATOR	MAXIMUM ALLOWABLE POWER (% RTP)	MAXIMUM ALLOWABLE LINEAR POWER LEVEL HIGH TRIP (% RTP)
2	95	95
3	56	56
4	46	46
5 to 7	MODE 3	Not applicable

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

VALVE NUMBER		LIFT SETTING*
Steam Generator #1	Steam Generator #2	(psig)
3PSV-8401	3PSV-8410	1085
3PSV-8402	3PSV-8411	1092
3PSV-8403	3PSV-8412	1099
3PSV-8404	3PSV-8413	1106
3PSV-8405	3PSV-8414	1113
3PSV-8406	3PSV-8415	1120
3PSV-8407	3PSV-8416	1127
3PSV-8408	3PSV-8417	1134
3PSV-8409	3PSV-8418	1140

* The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure. Each MSSV has an as-found tolerance of +2%/-3%. Following testing according to Technical Specification 5.5.2.10, MSSVs will be set within +/-1% of the specified lift setpoint.

3.7 PLANT SYSTEMS

3.7.2 Main Steam Isolation Valves (MSIVs)

LCO 3.7.2 Two 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
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 MSIVs inoperable in MODE 2 or 3.	C.1 Close MSIV. <u>AND</u> C.2 Verify MSIV is closed.	8 hours Once per 7 days
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	Verify closure time of each MSIV is ≤ 8.0 seconds.	In accordance with the Inservice Testing Program

3.7 PLANT SYSTEMS

3.7.3 Main Feedwater Isolation Valves (MFIVs).

LCO 3.7.3 Two MFIVs shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3 except when MFIV is closed and deactivated.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more MFIVs inoperable.	A.1 Close or isolate inoperable MFIV.	7 days
	<u>AND</u>	
	A.2 Verify inoperable MFIV valve is closed or isolated.	Once per 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

3.7 PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify the closure time of each MFIV $\leq$ 10 seconds.	In accordance with the Inservice Testing Program

3.7 PLANT SYSTEMS

3.7.4 Atmospheric Dump Valves (ADVs)

LCO 3.7.4 One ADV per required Steam Generator (SG) shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required ADV inoperable.	A.1 --------NOTE--------- LCO 3.0.4 is not applicable. --------------------- Restore ADV to OPERABLE status.	72 hours
B. Two ADVs inoperable.	B.1 Restore one ADV to OPERABLE status.	24 hours
C. Backup nitrogen gas supply system capacity ≤ 8 hours for one or more required ADV(s).	C.1 Restore backup nitrogen gas supply system capacity for one or more required ADV(s).	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A or B not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 4 without reliance upon steam generator for heat removal.	6 hours 18 hours
E. Required Action and associated completion time of Condition C not met.	E.1 Declare the ADV inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Verify the capacity of the backup nitrogen supply system.	7 days
SR 3.7.4.2	Verify one complete cycle of each ADV.	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.

-----NOTES-----
1. Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4.
2. The steam driven AFW pump is OPERABLE when running and controlled manually to support plant start-ups, plant shut-downs, and AFW pump and valve testing.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One steam supply to turbine driven AFW pump inoperable. OR -----NOTE----- Only applicable if MODE 2 has not been entered following refueling ---------- One turbine driven AFW pump inoperable in MODE 3 following refueling	A.1 Restore affected equipment to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the LCO
B. One AFW train inoperable for reasons other than Condition A in MODE 1, 2, or 3.	B.1 Restore AFW train to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet the LCO
C. Two AFW trains with two motor driven pumps inoperable in MODES 1, 2, or 3.	C.1 Restore one AFW train to OPERABLE status.	48 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Two AFW trains with one motor driven pump and steam driven pump inoperable in MODES 1, 2, or 3.	D.1	Restore one AFW train to OPERABLE status.	24 hours
E. Required Action and associated Completion Time of Conditions A, B, C, or D not met.	E.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	E.2	Be in MODE 4.	12 hours
F. Three AFW trains inoperable in MODE 1, 2, or 3.	F.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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
G. Required AFW train inoperable in MODE 4.	G.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
	<u>OR</u>		
	G.2	Verify two Loops of decay heat OPERABLE in accordance with LCO 3.4.6.	Immediately
H. ---------NOTE--------- Testing pursuant to Technical Specification 3.3.5 or 3.3.6 does not constitute entry into this condition. ---------------------- An automatic valve in any flow path incapable of closing upon receipt of a Main Steam Isolation signal.	H.1	Close the affected valve or its block valve.	4 hours
	<u>AND</u>		
	H.2	Enter the appropriate ACTIONS (A, B, C, D, F, or G) if there is a loss of the flow path(s).	Immediately upon completion of ACTION H.1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.1	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.	31 days
SR 3.7.5.2	-------------------NOTE------------------- Not required to be performed for the turbine driven AFW pump until 72 hours after reaching 800 psig in the steam generators. -- 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------------------- Not required to be performed for the turbine driven AFW pump until 72 hours after reaching 800 psig in the steam generators. -- Verify each AFW automatic valve actuates to the correct position on an actual or simulated actuation signal, except valves HV-8200 and HV-8201.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.5.4	------------------NOTE------------------ Not required to be performed for the turbine driven AFW pump until 72 hours after reaching 800 psig in the steam generators. -- Verify each AFW pump starts automatically on an actual or simulated actuation signal.	24 months
SR 3.7.5.5	Verify the proper alignment of the required AFW flow paths by verifying flow from the condensate storage tank to each steam generator.	Prior to entering MODE 2 whenever unit has been in MODE 5 or 6 for > 30 days

3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tank (CST T-121 and T-120)

LCO 3.7.6 The CST T-121 contained volume shall be ≥ 144,000 gallons and CST T-120 contained volume shall be ≥ 360,000 gallons.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. CST T-121 or T-120 contained volumes not within limit.	A.1 Verify OPERABILITY of backup water supply.	4 hours AND Once per 12 hours thereafter
	AND	
	A.2 Restore CST T-121 and T-120 contained volumes to within limit.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 4 without reliance on steam generator for heat removal.	18 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify CST T-121 and T-120 contained volumes are within limit.	12 hours

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.	A.1	--------NOTE--------- When in MODE 4, enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops—MODE 4" for shutdown cooling made inoperable by CCW. --------------------- Restore CCW train to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	B.2	Be in MODE 5.	36 hours
C. Backup Nitrogen Supply (BNS) system train(s) inoperable.	C.1	Restore BNS train(s) to OPERABLE status.	8 hours
	<u>OR</u>		
	C.2	Declare the associated CCW train(s) inoperable.	8 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.7.1	Verify that a least nine nitrogen gas bottles are installed with a minimum average bottle pressure of 4232 psig.	7 days
SR 3.7.7.2	-------------------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.	31 days
SR 3.7.7.3	Verify each CCW automatic valve in the flow path actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.7.7.4	Perform inservice testing for each CCW manual, power operated, automatic valve, and pump in the flow path servicing safety related equipment.	In accordance with the Inservice Testing Program
SR 3.7.7.5	Verify each CCW pump starts automatically on an actual or simulated actuation signal.	24 months
SR 3.7.7.6	Verify the third stage pressure regulator of the BNS system is set at 55 psig (± 1.5 psi).	24 months

3.7 PLANT SYSTEMS

3.7.7.1 Component Cooling Water (CCW) Safety Related Makeup System

LCO 3.7.7.1 Two trains of Component Cooling Water (CCW) Safety Related Makeup System shall be OPERABLE with a contained volume in the Primary Plant Makeup Storage Tank ≥ the level specified in Figure 3.7.7.1-1.

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

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CCW Safety Related Makeup flow path inoperable.	A.1 Restore the flow path to OPERABLE status.	7 days
B. Two CCW Safety Related Makeup flow paths inoperable. <u>OR/AND</u> The Primary Plant Makeup Storage Tank Level < that required by Figure 3.7.7.1-1.	B.1 Restore one CCW Safety Related Makeup flow path to OPERABLE status. <u>AND</u> B.2 Restore the Primary Plant Makeup Storage Tank Level to OPERABLE status.	8 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Actions and associated Completion Times of Conditions A or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 30 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.7.1.1 Verify the contained water volume in the Primary Plant Makeup Storage Tank is within its limits.	7 days
SR 3.7.7.1.2 Verify each CCW Safety Related Makeup System pump develops the required differential pressure on recirculation flow.	In accordance with inservice testing program
SR 3.7.7.1.3 Measure CCW Leakage.	24 months

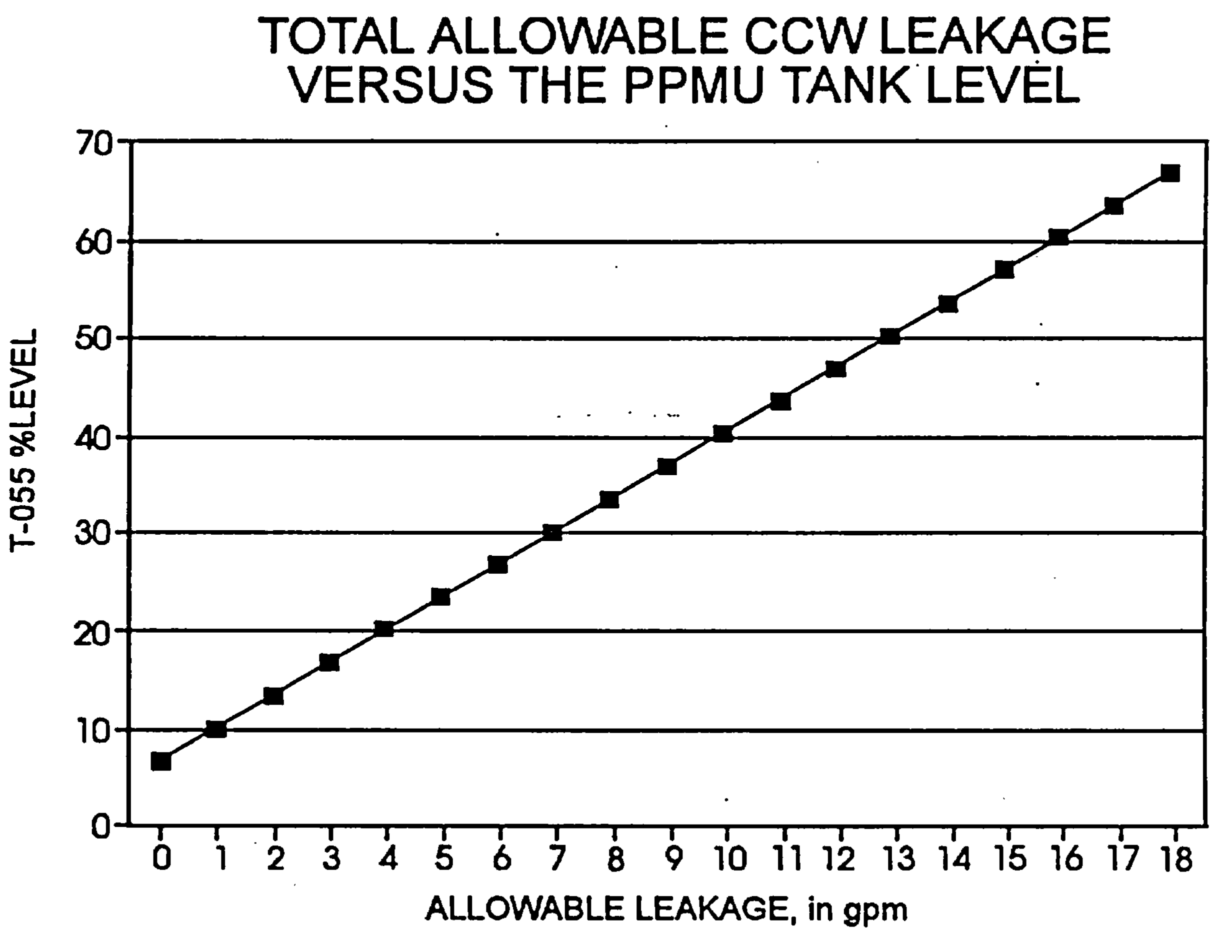

Figure 3.7.7.1-1

3.7 PLANT SYSTEMS

3.7.8 Salt Water Cooling (SWC) System

LCO 3.7.8 Two SWC trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One SWC train inoperable.	A.1	--------NOTE--------- 1. Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops—MODE 4," for shutdown cooling made inoperable by SWC. -------------------- Restore SWC train to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	B.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.1	Verify each SWC 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.	31 days
SR 3.7.8.2	Verify each SWC automatic valve in the flow path actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.7.8.3	Perform inservice testing for each SWC manual, power operated, automatic valve, and pump in the flow path servicing safety related equipment.	In accordance with the Inservice Testing Program
SR 3.7.8.4	Verify each SWC pump starts automatically on an actual or simulated actuation signal.	24 months

3.7 PLANT SYSTEMS

3.7.10 Emergency Chilled Water (ECW)

LCO 3.7.10 Two ECW trains shall be OPERABLE.

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

ACTIONS

-----NOTE-----
Each Unit shall enter applicable ACTIONS separately.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ECW train inoperable.	A.1 Restore ECW train to OPERABLE status.	14 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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.10.1 Verify each ECW 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.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.7.10.2 Verify the proper actuation of each ECW System component on an actual or simulated actuation signal.	24 months

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Cleanup System (CREACUS)

LCO 3.7.11 Two CREACUS trains shall be OPERABLE.

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

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of fuel assemblies within containment,
During movement of fuel assemblies in the fuel storage pool.

ACTIONS

-------------------------NOTES-------------------------
1. The provisions of LCO 3.0.4 are not applicable when entering MODES 5, 6, or defueled configuration.
2. Each Unit shall enter applicable ACTIONS separately.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One CREACUS train inoperable for reasons other than Condition B.	A.1	Restore CREACUS train to OPERABLE status.	14 days
B. One or more CREACUS trains inoperable due to inoperable CRE boundary in Modes 1, 2, 3, or 4.	B.1	Initiate action to implement mitigating actions.	Immediately
	<u>AND</u>		
	B.2	Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours
	<u>AND</u>		
	B.3	Restore CRE boundary to OPERABLE status.	90 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 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 of Condition A not met in MODE 5 or 6, or during movement of fuel assemblies within containment, or during the movement of fuel assemblies in the fuel storage pool.	D.1	Place OPERABLE CREACUS train in emergency radiation protection mode.	Immediately
	OR		
	D.2.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	D.2.2	Suspend movement of fuel assemblies within containment.	Immediately
	AND		
	D.2.3	Suspend movement of fuel assemblies in the fuel storage pool.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. Two CREACUS trains inoperable in MODE 5 or 6, or during movement of fuel assemblies within containment, or during the movement of fuel assemblies in the fuel storage pool.	E.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	E.2	Suspend movement of fuel assemblies within containment.	Immediately
OR	AND		
One or more CREACUS trains inoperable due to an inoperable CRE boundary in MODE 5 or 6, or during movement of fuel assemblies within containment, or during the movement of fuel assemblies in the fuel storage pool.	E.3	Suspend movement of fuel assemblies in the fuel storage pool.	Immediately
			(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two CREACUS 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 3.7.11.1	Operate each CREACUS train for ≥ 2 hours.	31 days
SR 3.7.11.2	Perform required CREACUS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.11.3	Verify each CREACUS train actuates on an actual or simulated actuation signal.	24 months
SR 3.7.11.4	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

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3.7 PLANT SYSTEMS

3.7.16 Fuel Storage Pool Water Level

LCO 3.7.16 The fuel storage pool water level shall be ≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.16.1	Verify the fuel storage pool water level is ≥ 23 ft above the top of irradiated fuel assemblies seated in the storage racks.	7 days

3.7 PLANT SYSTEMS

3.7.17 Fuel Storage Pool Boron Concentration

LCO 3.7.17 The fuel storage pool boron concentration shall be $\geq$ 2000 ppm.

APPLICABILITY: Whenever any fuel assembly is 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
	AND	
	A.2 Initiate action to restore fuel storage pool boron concentration to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.17.1	Verify the fuel storage pool boron concentration is within limit.	7 days

3.7 PLANT SYSTEMS

3.7.18 Spent Fuel Assembly Storage

LCO 3.7.18 The combination of initial enrichment and burnup of each SONGS 2 and 3 spent fuel assembly stored in Region I shall be within the acceptable burnup domain of Figure 3.7.18-1 or Figure 3.7.18-2, or the fuel assembly shall be stored in accordance with Technical Specification 4.3.1.1.

The combination of initial enrichment and burnup of each SONGS 2 and 3 spent fuel assembly stored in Region II shall be within the acceptable burnup domain of Figure 3.7.18-3 or Figure 3.7.18-4, or the fuel assembly shall be stored in accordance with Technical Specification 4.3.1.1.

Each SONGS 1 uranium dioxide spent fuel assembly stored in Region II shall be stored in accordance with Technical Specification 4.3.1.1.

APPLICABILITY: Whenever any fuel assembly is stored in the 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 bring the noncomplying fuel assembly into compliance.	 Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.18.1	Verify by administrative means the initial enrichment, burnup, and cooling time of the fuel assembly are in accordance with LCO 3.7.18, or Design Features 4.3.1.1, or LCS 4.3.100. Rev 2, dated 09/27/07.	Prior to moving a fuel assembly to any spent fuel pool storage location.

FIGURE 3.7.18-1

MINIMUM BURNUP AND COOLING TIME VS. INITIAL ENRICHMENT
FOR
UNRESTRICTED PLACEMENT OF SONGS 2 AND 3 FUEL
IN
REGION I RACKS

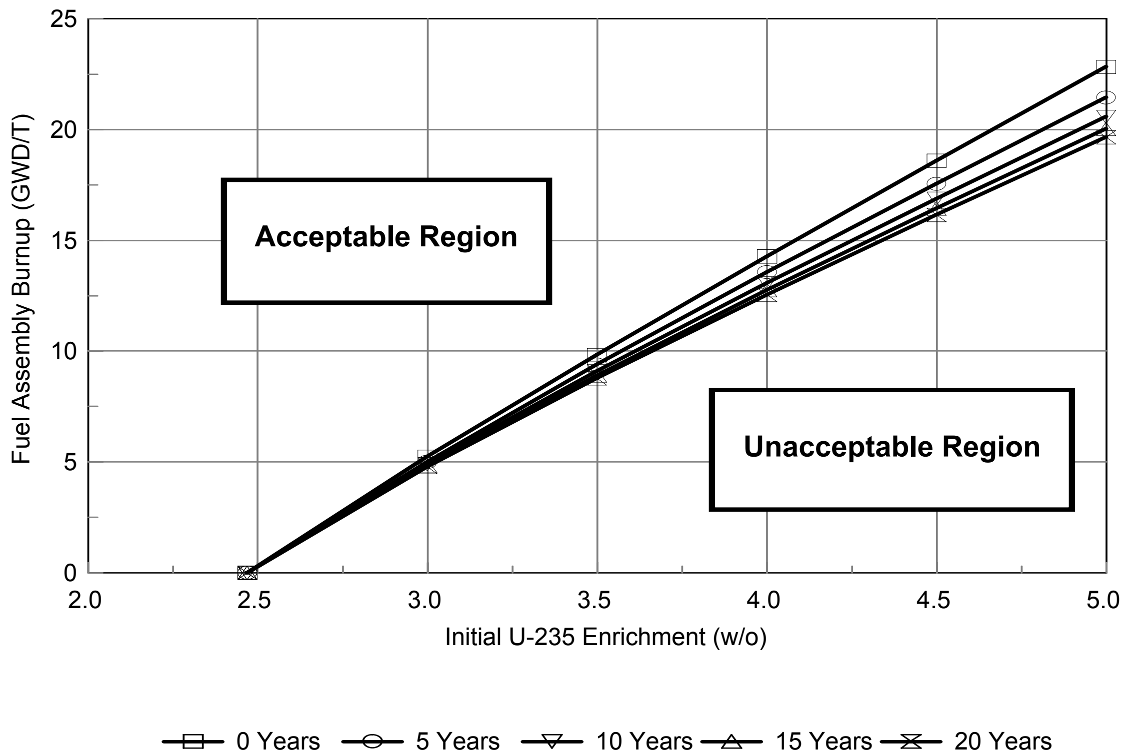


FIGURE 3.7.18-2

MINIMUM BURNUP AND COOLING TIME VS. INITIAL ENRICHMENT
FOR
PLACEMENT OF SONGS 2 AND 3 FUEL IN PERIPHERAL POOL LOCATIONS
IN
REGION I RACKS

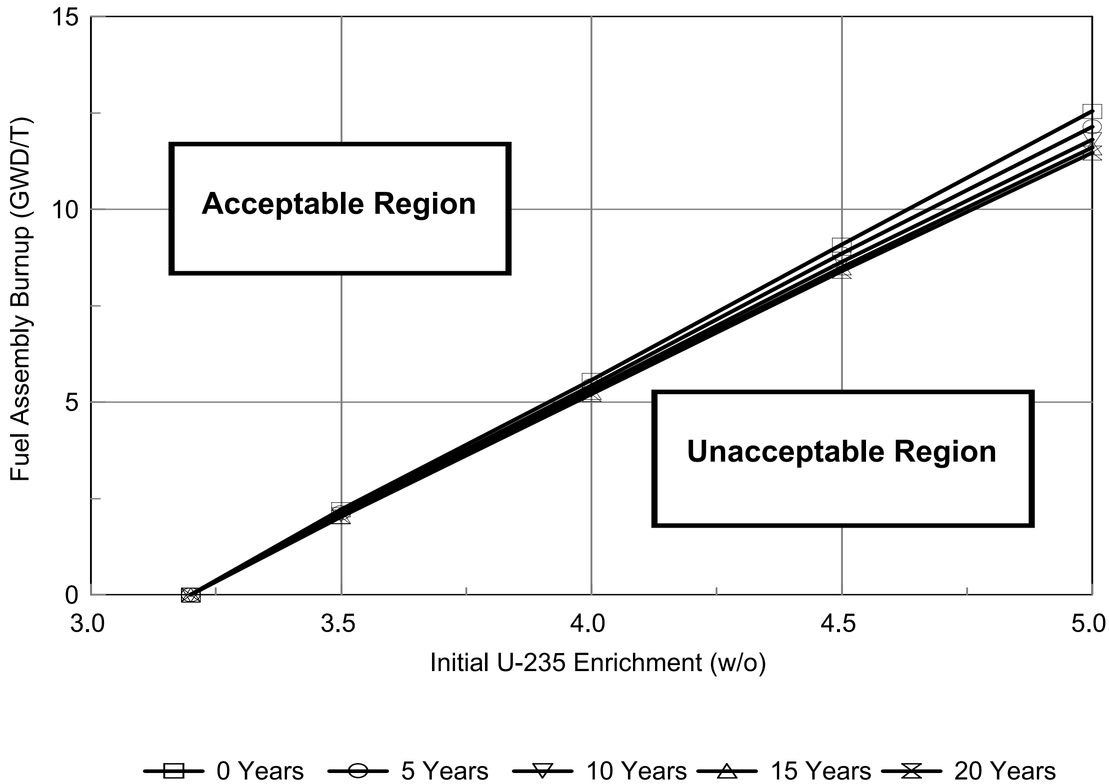


FIGURE 3.7.18-3

MINIMUM BURNUP AND COOLING TIME VS. INITIAL ENRICHMENT
FOR
UNRESTRICTED PLACEMENT OF SONGS 2 AND 3 FUEL
IN
REGION II RACKS

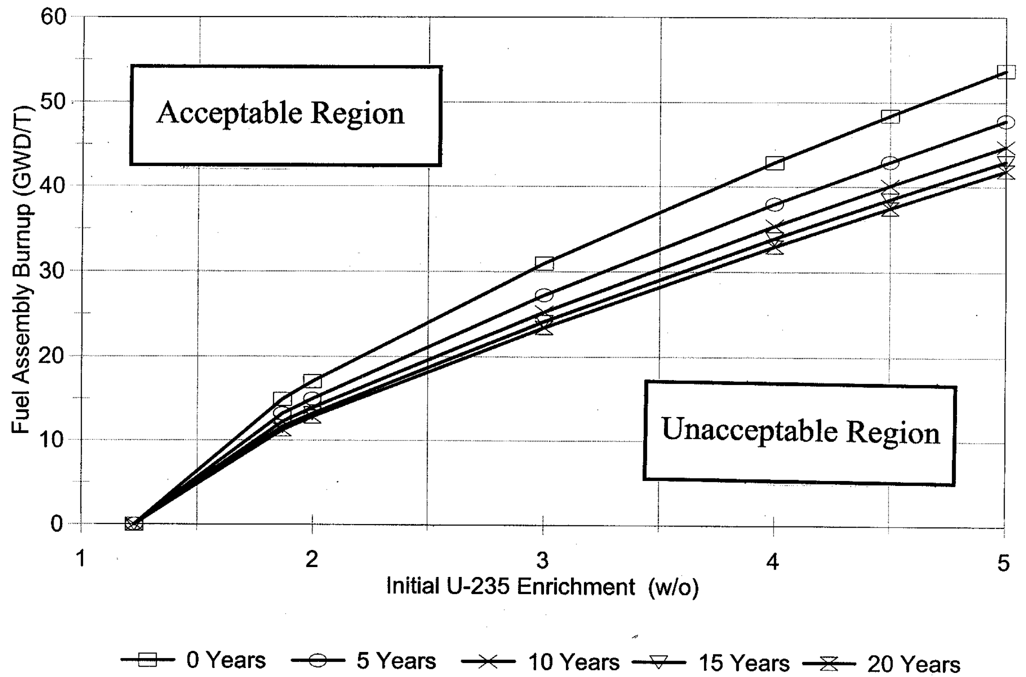
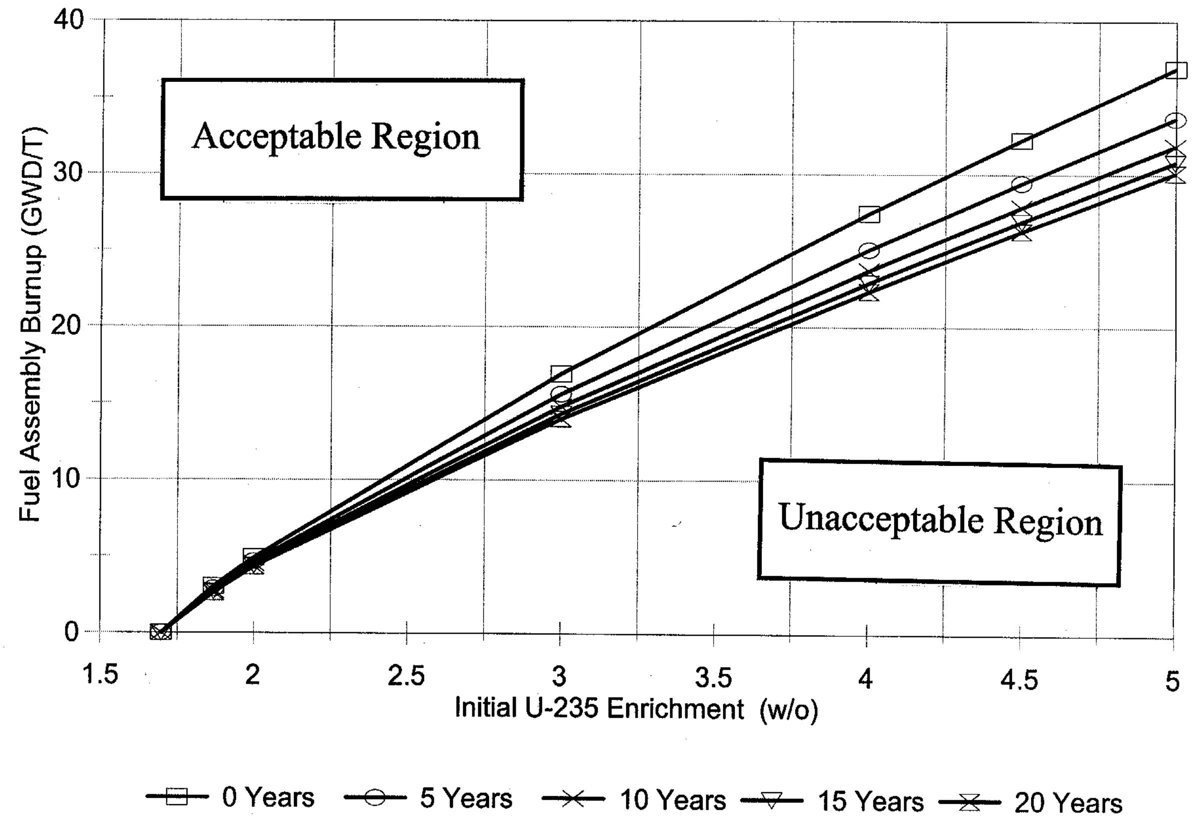


FIGURE 3.7.18-4

MINIMUM BURNUP AND COOLING TIME VS. INITIAL ENRICHMENT
FOR
PLACEMENT OF SONGS 2 AND 3 FUEL IN PERIPHERAL POOL LOCATIONS
IN
REGION II RACKS



3.7 PLANT SYSTEMS

3.7.19 Secondary Specific Activity

LCO 3.7.19 The specific activity of the secondary coolant shall be $\leq$ 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 3.7.19.1 Verify the specific activity of the secondary coolant is within limit.	31 days

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; and

b. Two diesel generators (DGs) each capable of supplying one train of the onsite Class 1E AC Electrical Power Distribution System.

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

ACTIONS

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 AND Once per 8 hours thereafter
	AND		
	A.2	Restore required offsite circuit to OPERABLE status.	-----NOTE------- The Completion Time may be extended to 10 days once per train prior to 7/01/2012 to perform maintenance. ---------------- 72 hours AND 17 days from discovery of failure to meet LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One required DG inoperable.	B.1	Perform SR 3.8.1.1 for the OPERABLE required offsite circuits.	1 hour AND Once per 8 hours thereafter
	AND		
	B.2	Declare required feature(s) supported by the inoperable DG inoperable when its redundant required feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	AND		
	B.3.1	Determine OPERABLE DG is not inoperable due to common cause failure.	24 hours
	OR		
	B.3.2	Perform SR 3.8.1.2 for OPERABLE DG.	24 hours
	AND		
	B.4	Restore required DG to OPERABLE status.	14 days AND 17 days from discovery of failure to meet LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Two required offsite circuits inoperable.	C.1	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 feature(s)
	<u>AND</u>		
	C.2	Restore one required offsite circuit to OPERABLE status.	24 hours
D. One required offsite circuit inoperable. <u>AND</u> One required DG inoperable.	------------NOTE------------ Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems—Operating," when Condition D is entered. ----------------------------		
	D.1	Restore required offsite circuit to OPERABLE status.	12 hours
	<u>OR</u>		
	D.2	Restore required DG to OPERABLE status.	12 hours
E. Two required DGs inoperable.	E.1	Restore one required DG to OPERABLE status.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required Action and Associated Completion Time of Condition A, B, C, D, or E not met.	F.1 Be in MODE 3. <u>AND</u> F.2 Be in MODE 5.	6 hours 36 hours
G. Three or more required AC sources inoperable.	G.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.1	-------------------NOTES------------------- 1. Bus 2A04 is required when unit crosstie breaker 2A0417 is used to provide a source of AC power. 2. Bus 2A06 is required when unit crosstie breaker 2A0619 is used to provide a source of AC power. -- Verify correct breaker alignment and power availability for each required offsite circuit.	 7 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
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 rated 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. 4. To ensure Operability of an AVR, it must have been aligned to the DG during the performance of SR 3.8.1.2 and SR 3.8.1.3 within the last 60 days, plus any allowance per SR 3.0.2. ---	
	Verify each DG starts from standby conditions and achieves: a. Steady state voltage ≥ 4161 V and ≤ 4576 V; and b. Steady state frequency ≥ 59.7 Hz and ≤ 61.2 Hz.	As specified in Table 3.8.1-1

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.3	----------NOTES---------- 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by, and immediately follow without shutdown, a successful performance of SR 3.8.1.2 or SR 3.8.1.7. 5. To ensure Operability of an AVR, it must have been aligned to the DG during the performance of SR 3.8.1.2 and SR 3.8.1.3 within the last 60 days, plus any allowance per SR 3.0.2. ------------------------- Verify each DG is synchronized and loaded, and operates for ≥ 60 minutes at a load ≥ 4450 kW and ≤ 4700 kW.	As specified in Table 3.8.1-1
SR 3.8.1.4	Verify each day tank contains ≥ 31.5 inches of fuel oil.	31 days
SR 3.8.1.5	Check for and remove accumulated water from each day tank.	31 days
SR 3.8.1.6	Verify the fuel oil transfer system operates to transfer fuel oil from storage tank to the day tank.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.7	-------------------NOTES-------------------- 1. All DG starts may be preceded by an engine prelube period. 2. Credit may be taken for unplanned events that satisfy this SR. -- Verify each DG starts from standby condition and: a. In ≤ 9.4 seconds, achieves voltage ≥ 4161 V and frequency ≥ 59.7 Hz; b. Maintains steady state voltage ≥ 4161 V and ≤ 4576 V; and c. Maintains steady state frequency ≥ 59.7 Hz and ≤ 61.2 Hz.	184 days
SR 3.8.1.8	--------------------NOTE------------------ 1. Credit may be taken for unplanned events that satisfy this SR. 2. Testing to satisfy this SR shall include actual automatic and manual transfer to at least one alternate offsite circuit. The other alternate offsite circuit may be verified by overlapping circuit tests. -- Verify capability of automatic and manual transfer of AC power sources from the normal offsite circuit to each alternate required offsite circuit.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.9	-------------------NOTE------------------- 1. Credit may be taken for unplanned events that satisfy this SR. 2. To ensure Operability of an AVR, it must have been aligned to the DG during the performance of either SR 3.8.1.9, SR 3.8.1.10, or SR 3.8.1.19 within the last 24 months, plus any allowance per SR 3.0.2. -- 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; b. Within 4 seconds following load rejection, the voltage is ≥ 4161 V and ≤ 4576 V; and c. Within 4 seconds following load rejection, the frequency is ≥ 59.7 Hz and ≤ 61.2 Hz.	24 months
SR 3.8.1.10	-------------------NOTE------------------- 1. Credit may be taken for unplanned events that satisfy this SR. 2. To ensure Operability of an AVR, it must have been aligned to the DG during the performance of either SR 3.8.1.9, SR 3.8.1.10, or SR 3.8.1.19 within the last 24 months, plus any allowance per SR 3.0.2. -- Verify each DG, when connected to its bus in parallel with offsite power and operating with inductive loading that offsite power conditions permit, during and following a load rejection of ≥ 4450 kW and ≤ 4700 kW: a. Does not trip; and b. Voltage is maintained ≤ 5450 V.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.11	-------------------NOTES------------------- 1. All DG starts may be preceded by an engine prelube period. 2. Credit may be taken for unplanned events that satisfy this SR. --- Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; c. DG auto-starts from standby condition and: 1. energizes permanently connected loads and resets the 4.16kV bus undervoltage relay logic in $\leq$ 10 seconds; 2. maintains steady state voltage $\geq$ 4161 V and $\leq$ 4576 V; 3. maintains steady state frequency $\geq$ 59.7 Hz and $\leq$ 61.2 Hz; and 4. supplies permanently connected loads for $\geq$ 5 minutes.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.12	-------------------NOTES------------------- 1. All DG starts may be preceded by an engine prelube period. 2. Credit may be taken for unplanned events that satisfy this SR. --- Verify on an actual or simulated SIAS, each DG auto-starts from standby condition and: a. In ≤ 9.4 seconds, achieves voltage ≥ 4161 V and frequency ≥ 59.7 Hz; b. Maintains steady state voltage ≥ 4161 V and ≤ 4576 V; and c. Maintains steady state frequency ≥ 59.7 Hz and ≤ 61.2 Hz. d. Operates for ≥ 5 minutes.	24 months
SR 3.8.1.13	-------------------NOTE------------------- Credit may be taken for unplanned events that satisfy this SR. --- Verify each DG automatic trip is bypassed on actual or simulated SIAS except: a. Engine overspeed; b. Generator differential current; and c. Low-low lube oil pressure.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.14	-------------------NOTES------------------- 1. Momentary transients outside the load range does not invalidate this test. 2. Credit may be taken for unplanned events that satisfy this SR. --- Verify each DG, when connected to its bus in parallel with offsite power and operating with inductive loading that offsite power conditions permit, operates for ≥ 24 hours: a. For ≥ 2 hours loaded ≥ 4935 kW and ≤ 5170 kW; and b. For the remaining hours of the test loaded ≥ 4450 kW and ≤ 4700 kW.	 24 months
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 ≥ 4450 kW and ≤ 4700 kW. Momentary transients outside the load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. --- Verify each DG starts and: a. In ≤ 9.4 seconds, achieves voltage ≥ 4161 V and frequency ≥ 59.7 Hz; b. Maintains steady state voltage ≥ 4161 V and ≤ 4576 V; c. Maintains steady state frequency ≥ 59.7 Hz and ≤ 61.2 Hz; and d. Operates for ≥ 5 minutes.	 24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.16	-------------------NOTE------------------- Credit may be taken for unplanned events that satisfy this SR. -- Verify each DG: a. Is capable of being synchronized with offsite power 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, with: 1. steady state voltage ≥ 4161 V and ≤ 4576 V; 2. steady state frequency ≥ 59.7 Hz and ≤ 61.2 Hz; and 3. the DG output breaker open.	24 months
SR 3.8.1.17	-------------------NOTE------------------- Credit may be taken for unplanned events that satisfy this SR. -- Verify, with a DG operating in test mode and connected to its bus in parallel with offsite power, an actual or simulated SIAS overrides the test mode by: a. Returning the DG to ready-to-load operation, with: 1. steady state voltage ≥ 4161 V and ≤ 4576 V; 2. steady state frequency ≥ 59.7 Hz and ≤ 61.2 Hz; and 3. the DG output breaker open; and b. Automatically energizing the emergency loads from offsite power.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.18	----------NOTE---------- Credit may be taken for unplanned events that satisfy this SR. ------------------------- Verify the timing of each sequenced load block is within its timer setting ± 10% or ± 2.5 seconds, whichever is greater, with the exception of the 5 second load group which is -0.5, +2.5 seconds, for each programmed time interval load sequence.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.19	------------------NOTES------------------ 1. All DG starts may be preceded by an engine prelube period. 2. Credit may be taken for unplanned events that satisfy this SR. 3. To ensure Operability of an AVR, it must have been aligned to the DG during the performance of either SR 3.8.1.9, SR 3.8.1.10, or SR 3.8.1.19 within the last 24 months, plus any allowance per SR 3.0.2. ---	
	Verify on an actual or simulated loss of offsite power signal in conjunction with actual or simulated ESF actuation signals: 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 and resets the 4.16 kV bus undervoltage relay logic in $\leq$ 10 seconds; 2. energizes auto-connected emergency loads through the programmed time interval load sequence; 3. achieves steady state voltage $\geq$ 4161 V and $\leq$ 4576 V; 4. achieves steady state frequency $\geq$ 59.7 Hz and $\leq$ 61.2 Hz; and 5. supplies permanently connected and auto-connected emergency loads for $\geq$ 5 minutes.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.20	-------------------NOTE-------------------- All DG starts may be preceded by an engine prelube period. --- Verify, when started simultaneously from standby condition, each DG: a. In ≤ 9.4 seconds, achieves voltage ≥ 4161 V and frequency ≥ 59.7 Hz; b. Maintains steady state voltage ≥ 4161 V and ≤ 4576 V; and c. Maintains steady state frequency ≥ 59.7 Hz and ≤ 61.2 Hz.	10 years

Table 3.8.1-1 (page 1 of 1)
Diesel Generator Test Schedule

NUMBER OF FAILURES IN LAST 25 VALID TESTS[a]	FREQUENCY
≤ 3	31 days
≥ 4	7 days[b] (but no less than 24 hours)

(a) Criteria for determining number of failures and valid tests shall be in accordance with Regulatory Position C.2.1 of Regulatory Guide 1.9, Revision 3, where the number of tests and failures is determined on a per DG basis.

(b) This test frequency shall be maintained until seven consecutive failure free starts from standby conditions and load and run tests have been performed. This is consistent with Regulatory Position C.3.2, of Draft Regulatory Guide DG-1021 (Second Proposed Revision 3 to Regulatory Guide 1.9) (Ref. 14). If, subsequent to the 7 failure free tests, 1 or more additional failures occur, such that there are again 4 or more failures in the last 25 tests, the testing interval shall again be reduced as noted above and maintained until 7 consecutive failure free tests have been performed. This test frequency is also consistent with paragraph (a)(3)(ii) of 10CFR50.63, "Loss of all alternating current power", as published in the Federal Register, Vol. 57, No. 77, page 14517, dated April 21, 1992 (Ref. 15).

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources – Shutdown

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

a. One qualified circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems Shutdown"; and

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

APPLICABILITY: MODES 5 and 6,
During movement of fuel assemblies within containment,
During movement of fuel assemblies in the fuel storage pool.

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 one 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>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.2 Suspend movement of fuel assemblies within containment.	Immediately
	AND	
	A.2.3 Suspend movement of fuel assemblies in the fuel storage pool.	Immediately
	AND	
	A.2.4 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	
	A.2.5 Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately

(continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One required DG inoperable.	B.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	B.2	Suspend movement of fuel assemblies within containment.	Immediately
	AND		
	B.3	Suspend movement of fuel assemblies in the fuel storage pool.	Immediately
	AND		
	B.4	Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND		
	B.5	Initiate action to restore required DG to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.2.1	-------------------NOTE------------------- The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.8 through SR 3.8.1.11, SR 3.8.1.13 through SR 3.8.1.16, SR 3.8.1.18, and SR 3.8.1.19. --	
	For AC sources required to be OPERABLE, the SRs of Specification 3.8.1, "AC Sources—Operating," except SR 3.8.1.17 and SR 3.8.1.20, are applicable.	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 volume < 48,400 gallons and > 41,800 gallons in storage tank during MODE 1,2,3 or 4.	A.1 Restore fuel oil level to within limits.	48 hours
B. One or more DGs with lube oil inventory < TS min and ≥ TS inop.	B.1 Restore lube oil inventory to within limits.	48 hours
C. One required DG with fuel volume in the storage tank < 43,600 gallons and > 37,400 gallons during MODE 5 or 6.	C.1 Restore fuel oil level to within limits.	48 hours
D. One or more DGs with stored fuel oil total particulates not within limits.	D.1 Restore fuel oil total particulates to within limits.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. One or more DGs with new fuel oil properties not within limits.	E.1	Restore stored fuel oil properties to within limits.	30 days
F. One or more DGs with starting air receiver pressure < 175 psig and ≥ 136 psig.	F.1	Restore starting air receiver pressure to ≥ 175 psig.	48 hours
G. Required Action and associated Completion Time of Condition A, B, C, D, E or F not met. <u>OR</u> One or more DGs with diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than Condition A, B, C, D, E, or F.	G.1	Declare associated DG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains ≥ 48,400 gallons in MODE 1,2,3 or 4 and ≥ 43,600 gallons level in MODE 5 or 6.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.3.2	Verify lubricating oil inventory is ≥ TS min limit.	31 days
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 DG air start receiver pressure is ≥ 175 psig.	31 days
SR 3.8.3.5	Check for and remove accumulated water from each fuel oil storage tank.	31 days
SR 3.8.3.6	For each fuel oil storage tank: a. Drain the fuel oil; b. Remove the sediment; and c. Clean the tank.	10 years

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. --------NOTE-------- Only applicable to 1800 amp-hour rated batteries. -------------------- One or two required battery charger(s) on one train inoperable.	A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage.	2 hours
	<u>AND</u>	
	A.2 Verify battery float current ≤ 1.50 amps.	Once per 12 hours
	<u>AND</u>	
	A.3.1 Restore required battery charger(s) to OPERABLE status.	72 hours
	<u>OR</u>	
	A.3.2.1 Provide ability to power the spare battery charger from a diesel-backed source.	72 hours
	<u>AND</u>	
	A.3.2.2 Restore required battery charger(s) to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. --------NOTE-------- Only applicable to 1260 amp-hour rated batteries. -------------------- One or two required battery charger(s) on one train inoperable.	B.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage.	2 hours
	<u>AND</u>	
	B.2 Verify battery float current ≤ 0.75 amp.	Once per 12 hours
	<u>AND</u>	
	B.3.1 Restore required battery charger(s) to OPERABLE status.	72 hours
	<u>OR</u>	
	B.3.2.1 Provide ability to power the spare battery charger from a diesel-backed source.	72 hours
	<u>AND</u>	
	B.3.2.2 Restore required battery charger(s) to OPERABLE status.	7 days
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Declare associated battery inoperable.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One DC electrical power subsystem inoperable for reasons other than Condition A or B.	D.1 Restore DC electrical power subsystem to OPERABLE status. <u>OR</u> D.2 Cross connect with same train DC subsystem (1800 amp-hour rated battery required).	2 hours 2 hours
E. DC Subsystem Buses cross connected (1800 amp-hour rated battery required).	E.1 Restore DC Subsystem Buses to non-cross-connected configuration.	------NOTE----- Completion Time is 14 days when cross connected for battery replacement. --------------- 4 days
F. Required Action and Associated Completion Time of Condition D or E not met.	F.1 Be in MODE 3. <u>AND</u> F.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.	7 days
SR 3.8.4.2	----------------NOTES-------------------- 1. The dedicated battery charger is rated at 300 amps. 2. The swing battery charger is rated at 400 amps. --- Verify each battery charger supplies ≥ rated amps at ≥ the minimum established float voltage for ≥ 8 hours.	24 months
SR 3.8.4.3	-----------------NOTE-------------------- The battery performance discharge test in SR 3.8.6.7 may be performed in lieu of SR 3.8.4.3 once per 48 months for batteries rated at 1260 amp-hours. --- Verify capacity of the 1260 amp-hour rated battery 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.	24 months
SR 3.8.4.4	-----------------NOTES--------------------- 1. The modified performance discharge test in SR 3.8.6.7 will be performed for batteries rated at 1800 amp-hours. 2. Completed service tests and performance discharge tests remain valid until the new modified performance discharge test is performed at its required frequency. --- Verify capacity of the 1800 amp-hour rated battery is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a modified performance discharge test.	30 months

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3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources Shutdown

LCO 3.8.5 The DC electrical power subsystem shall be OPERABLE to support the DC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown."

APPLICABILITY: MODES 5 and 6,
During movement of fuel assemblies within containment,
During movement of fuel assemblies in the fuel storage pool.

ACTIONS

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

LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ---------NOTE--------- Only applicable to 1800 amp-hour rated batteries. --------------------- One or two required battery charger(s) on one train inoperable.	A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage.	2 hours
	AND	
	A.2 Verify battery float current ≤ 1.50 amps.	Once per 12 hours
	AND	
	A.3.1 Restore required battery charger(s) to OPERABLE status.	72 hours
	OR	
	A.3.2.1 Provide ability to power the spare battery charger from a diesel-backed source.	72 hours
	AND	
	A.3.2.2 Restore required battery charger(s) to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. ---------NOTE--------- Only applicable to 1260 amp-hour rated batteries. --------------------- One or two required battery charger(s) on one train inoperable.	B.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage.	2 hours
	<u>AND</u>	
	B.2 Verify battery float current ≤ 0.75 amp.	Once per 12 hours
	<u>AND</u>	
	B.3.1 Restore required battery charger(s) to OPERABLE status.	72 hours
	<u>OR</u>	
	B.3.2.1 Provide ability to power the spare battery charger from a diesel-backed source.	72 hours
	<u>AND</u>	
	B.3.2.2 Restore required battery charger(s) to OPERABLE status.	7 days
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Declare associated battery inoperable.	Immediately

(continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more required DC electrical power subsystem(s) inoperable for reasons other than Condition A or B.	D.1 Declare affected required feature(s) inoperable.	Immediately
	<u>OR</u>	
	D.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	D.2.2 Suspend movement of fuel assemblies within containment.	Immediately
	<u>AND</u>	
	D.2.3 Suspend movement of fuel assemblies in the fuel storage pool.	Immediately
	<u>AND</u>	
	D.2.4 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	<u>AND</u>	
	D.2.5 Initiate action to restore required DC electrical power subsystem(s) 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, SR 3.8.4.3, and SR 3.8.4.4. -- 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, and SR 3.8.4.4.	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Parameters

LCO 3.8.6 Battery parameters for the 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 with float voltage < 2.07 V.	A.1 Perform SR 3.8.4.1.	2 hours
	<u>AND</u>	
	A.2.1 Perform SR 3.8.6.1.	2 hours
	<u>OR</u>	
	A.2.2 Perform SR 3.8.6.2.	2 hours
	<u>AND</u>	
	A.3 Restore affected cell voltage ≥ 2.07 V.	24 hours
B. ---------NOTE--------- Only applicable to 1800 amp-hour rated batteries. --------------------- One or two batteries on one train with float current > 1.50 amps.	B.1 Perform SR 3.8.4.1.	2 hours
	<u>AND</u>	
	B.2 Restore battery float current to ≤ 1.50 amps.	12 hours
C. ---------NOTE--------- Only applicable to 1260 amp-hour rated batteries. --------------------- One or two batteries on one train with float current > 0.75 amp.	C.1 Perform SR 3.8.4.1.	2 hours
	<u>AND</u>	
	C.2 Restore battery float current to ≤ 0.75 amp.	12 hours

(continued)

ACTIONS (Continued)

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

(continued)

ACTIONS (Continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. ---------NOTE--------- Only applicable to 1800 amp-hour rated batteries. --------------------- Required Action and associated Completion Time of Condition A, B, D, E, or F not met. <u>OR</u> One or two batteries on one train with one or more battery cells with float voltage < 2.07 V and float current > 1.50 amps.	G.1 Declare associated battery inoperable.	Immediately
H. ---------NOTE--------- Only applicable to 1260 amp-hour rated batteries. --------------------- Required Action and associated Completion Time of Condition A, C, D, E, or F not met. <u>OR</u> One or two batteries on one train with one or more battery cells with float voltage < 2.07 V and float current > 0.75 amp.	H.1 Declare associated battery inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.6.1	-------------------NOTE------------------- Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1. -- Verify each battery float current is ≤ 1.50 amps for batteries rated at 1800 amp-hours.	7 days
SR 3.8.6.2	-------------------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 ≤ 0.75 amp for batteries rated at 1260 amp-hours.	7 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.6.3	Verify each battery pilot cell voltage is ≥ 2.07 V.	31 days
SR 3.8.6.4	Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits.	31 days
SR 3.8.6.5	Verify each battery pilot cell temperature is greater than or equal to minimum established design limits.	31 days
SR 3.8.6.6	Verify each battery connected cell voltage is ≥ 2.07 V.	92 days
SR 3.8.6.7	Verify battery capacity is ≥ 80% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	60 months <u>AND</u> 12 months when the battery shows degradation or has reached 85% of the expected life with capacity < 100% of the manufacturer's rating <u>AND</u> 24 months when the battery has reached 85% of the expected life with capacity ≥ 100% of the manufacturer's rating

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters—Operating

LCO 3.8.7 The required Channel A, B, C, and D AC inverters shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
	------------NOTE------------ Enter applicable Conditions and Required Actions of LCO 3.8.9 with one AC vital bus de-energized. ----------------------------	
A. One required inverter inoperable.	A.1 Power AC vital bus from its Class 1E constant voltage source transformer.	2 hours
	<u>AND</u>	
	A.2 Restore inverter to OPERABLE status.	24 hours
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 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.7.1	Verify correct inverter voltage and alignment to required AC vital buses.	7 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Inverters – Shutdown

LCO 3.8.8 Required inverters shall be OPERABLE to support the onsite Class 1E AC vital bus electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems – Shutdown."

APPLICABILITY: MODES 5 and 6,
During movement of fuel assemblies within containment,
During movement of fuel assemblies in the fuel storage pool.

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 fuel assemblies within containment.	Immediately
	<u>AND</u>		
	A.2.3	Suspend movement of fuel assemblies in the fuel storage pool.	Immediately
	<u>AND</u>		
	A.2.4	Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	<u>AND</u>		

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.5 Initiate action to restore required inverters to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.8.1 Verify correct inverter voltage and alignment to required AC vital buses.	7 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems—Operating

LCO 3.8.9 Train A and Train B AC, Subsystems A, B, C, and D DC, and Channels A, B, C, and D AC vital bus electrical power distribution systems shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One AC electrical power distribution system inoperable.	A.1 Restore AC electrical power distribution system to OPERABLE status.	8 hours <u>AND</u> 16 hours from discovery of failure to meet LCO
B. One or more AC vital bus inoperable.	B.1 Restore AC vital bus to OPERABLE status.	2 hours <u>AND</u> 16 hours from discovery of failure to meet LCO
C. One or more DC electrical power distribution subsystem inoperable.	C.1 Restore DC electrical power distribution subsystem to OPERABLE status.	2 hours <u>AND</u> 16 hours from discovery of failure to meet LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Be in MODE 3. <u>AND</u> D.2 Be in MODE 5.	6 hours 36 hours

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 systems.	7 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems - Shutdown

LCO 3.8.10 The necessary portion of AC, DC, and AC vital bus electrical power distribution systems shall be OPERABLE to support equipment required to be OPERABLE.

APPLICABILITY: MODES 5 and 6.
During movement of fuel assemblies within containment,
During movement of fuel assemblies in the fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required AC, DC, or AC vital bus electrical power distribution systems 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 fuel assemblies within containment.	Immediately
	<u>AND</u>	
	A.2.3 Suspend movement of fuel assemblies in the fuel storage pool.	Immediately
	<u>AND</u>	
	A.2.4 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	<u>AND</u>	
		(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.5 Initiate actions to restore required AC, DC, and AC vital bus electrical power distribution system(s) to OPERABLE status.	Immediately
	<u>AND</u>	
	A.2.6 Declare associated required shutdown cooling system(s) inoperable and not in operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.10.1 Verify correct breaker alignments and voltage to required AC, DC, and AC vital bus electrical power distribution systems.	7 days

3.9 REFUELING OPERATIONS

3.9.1 Boron Concentration

LCO 3.9.1 Boron concentrations of the Reactor Coolant System and the refueling canal shall be maintained within the limit specified in the COLR.

APPLICABILITY: MODE 6.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.1.1 Verify boron concentration is within limit specified in the COLR.	72 hours

3.9 REFUELING OPERATIONS

3.9.2 Nuclear Instrumentation

LCO 3.9.2 Two source range monitors (SRMs) shall be OPERABLE.

APPLICABILITY: MODE 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SRM inoperable.	A.1 Suspend CORE ALTERATIONS. AND A.2 Suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet the boron concentration of LCO 3.9.1.	Immediately Immediately
B. Two SRMs inoperable.	B.1 Initiate actions to restore one SRM to OPERABLE status. AND B.2 Perform SR 3.9.1.1.	Immediately 4 hours AND Once per 12 hours thereafter

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.2.1	Perform CHANNEL CHECK.	12 hours
SR 3.9.2.2	-------------------NOTE------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. -- Perform CHANNEL CALIBRATION.	24 months

3.9 REFUELING OPERATIONS

3.9.3 Containment Penetrations

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

a. The equipment hatch closed and held in place by four bolts;

-------------------------NOTE-----------------------------
The equipment hatch may be open if all of the following conditions are met:
1) The Containment Structure Equipment Hatch Shield Doors are capable of being closed within 30 minutes,
2) The plant is in Mode 6 with at least 23 feet of water above the reactor vessel flange,
3) A designated crew is available to close the Containment Structure Equipment Hatch Shield Doors,
4) Containment purge is in service, and
5) The reactor has been subcritical for at least 72 hours.
----

b. One door in each air lock closed;

-------------------------NOTE-----------------------------
Both doors of the containment personnel airlock may be open provided:

a. one personnel airlock door is OPERABLE, and

b1. the plant is in MODE 6 with 23 feet of water above the fuel in the reactor vessel, or

b2. defueled configuration with fuel in containment (i.e., fuel in refueling machine or upender).
----

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

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

2. capable of being closed by an OPERABLE Containment Purge System.

APPLICABILITY: During CORE ALTERATIONS,
During movement of 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.	Immediately
	AND	
	A.2 Suspend movement of fuel assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.3.1	Verify each required containment penetration is in the required status.	7 days
SR 3.9.3.2	Verify each required containment purge and exhaust valve actuates to the isolation position on an actual or simulated actuation signal.	24 months

3.9 REFUELING OPERATIONS

3.9.4 Shutdown Cooling (SDC) and Coolant Circulation — High Water Level

LCO 3.9.4 One SDC loop shall be OPERABLE and in operation.

---------------------------NOTES---------------------------
With the upper guide structure removed from the reactor vessel the required SDC loop may be removed from operation for ≤ 2 hours per 8-hour period, provided:

a. The maximum RCS temperature is maintained ≤ 140°F.
b. No operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than that required to meet the minimum required boron concentration of LCO 3.9.1.
c. The capability to close the containment penetrations with direct access to the outside atmosphere within the calculated time to boil is maintained.
d. The reactor cavity water level is maintained ≥ 20 feet above the top of the reactor pressure vessel flange, or, for core alterations, ≥ 23 feet above the top of the reactor pressure vessel flange.

---------------------------NOTE---------------------------
A containment spray pump may be used in place of a low pressure safety injection pump in either or both shutdown cooling loops to provide shutdown cooling flow.

APPLICABILITY: MODE 6 with the water level ≥ 20 ft above the top of reactor vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDC loop requirements not met.	A.1 Suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet the boron concentration of LCO 3.9.1. <u>AND</u>	Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 Suspend loading irradiated fuel assemblies in the core.	Immediately
	<u>AND</u>	
	A.3 Initiate action to satisfy SDC loop requirements.	Immediately
	<u>AND</u>	
	A.4 Close all containment penetrations providing direct access from containment atmosphere to outside atmosphere.	4 hours or within the calculated time to boil, whichever is less

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.4.1	Verify one SDC loop is in operation and circulating reactor coolant at a flow rate of ≥ 2200 gpm.	12 hours

3.9 REFUELING OPERATIONS

3.9.5 Shutdown Cooling (SDC) and Coolant Circulation—Low Water Level

LCO 3.9.5 Two SDC loops shall be OPERABLE, and one SDC loop shall be in operation.

---NOTE---
A containment spray pump may be used in place of a low pressure safety injection pump in either or both shutdown cooling loops to provide shutdown cooling flow.

---

or

One loop of shutdown cooling shall be OPERABLE and operating under the following conditions:

1) The reactor has been shutdown for at least 6 days.

2) The water level above the reactor vessel flange is 12 feet or greater.

3) The associated loop of Salt Water Cooling (SWC) is OPERABLE and operating.

4) The associated Component Cooling Water (CCW) pump and the CCW swing pump are OPERABLE, and the associated CCW loop is OPERABLE and operating.

5) The Shutdown Cooling system is operating using the containment spray pump, and the associated high pressure safety injection pump and the low pressure safety injection pump are OPERABLE and at ambient temperature, available for injection from the RWST.

6) The RWST contains the volume of water required to raise the level to 20 feet above the reactor vessel flange.

7) The associated Emergency Diesel Generator is OPERABLE.

8) The water temperature of the SDC system is maintained less than 120°F.

APPLICABILITY: MODE 6 with the water level < 20 ft above the top of reactor vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One SDC loop inoperable. (Applicable to initial conditions of two shutdown cooling loops OPERABLE)	A.1	Initiate action to restore SDC loop to OPERABLE status.	Immediately
	<u>OR</u>		
	A.2	Initiate actions to establish ≥ 20 ft of water above the top of reactor vessel flange.	Immediately
B. One SDC loop operable, less than 20 feet of water above the reactor vessel flange and any of the 8 requirements not met (Applicable to initial conditions of one shutdown cooling loop OPERABLE and operating with requirements 1-8)	B.1	Initiate actions to establish ≥ 20 feet of water.	Immediately
C. No SDC loop OPERABLE or in operation.	C.1	Suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet the boron concentration of LCO 3.9.1.	Immediately
	<u>AND</u>		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. (continued)	C.2	Initiate action to restore one SDC loop to OPERABLE status and to operation.	Immediately
	AND		
	C.3	Close all containment penetrations providing direct access from containment atmosphere to outside atmosphere.	4 hours or within the calculated time to boil, whichever is less

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.5.1	Verify required SDC loops are OPERABLE and one SDC loop is in operation and circulating reactor coolant at a flow rate of ≥ 2200 gpm.	12 hours

3.9 REFUELING OPERATIONS

3.9.6 Refueling Water Level

LCO 3.9.6 Refueling water level shall be maintained ≥ 23 ft above the top of reactor vessel flange.

-------------------------------------NOTE-------------------------------------
Water level may be lowered to a minimum of 23 feet above the top of the fuel for movement of four finger CEAs, coupling and uncoupling of CEA extension shafts or for verifying the coupling and uncoupling.

APPLICABILITY: During movement of fuel assemblies or CEAs within the reactor pressure vessel,
During movement of fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Refueling water level not within limit.	A.1 Suspend CORE ALTERATIONS. <u>AND</u> A.2 Suspend movement of fuel assemblies within containment.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.6.1 The refueling water level shall be determined to be at least its minimum required depth.	24 hours

4.0 DESIGN FEATURES

4.1 Site

4.1.1 Exclusion Area Boundary

The exclusion area boundary shall be as shown in Figure 4.1-1.

4.1.2 Low Population Zone (LPZ)

The LPZ shall be as shown in Figure 4.1-2.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 217 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy or ZIRLO™ clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Integral or Discrete Burnable Absorber Rods may be used. They may include: borosilicate glass - Na_2O-B_2O_3-SiO_2 components, boron carbide - B_4C, zirconium boride - ZrB_2, gadolinium oxide - Gd_2O_3, erbium oxide - Er_2O_3. Limited substitutions of zirconium alloy (such as ZIRLO™ or Zircaloy) 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 nonlimiting core regions.

4.2.2 Control Element Assemblies

The reactor core shall contain 83 full length and eight part length control element assemblies (CEAs). The control material shall be silver indium cadmium, boron carbide, and inconel as approved by the NRC.

(continued)

4.0 DESIGN FEATURES (continued)

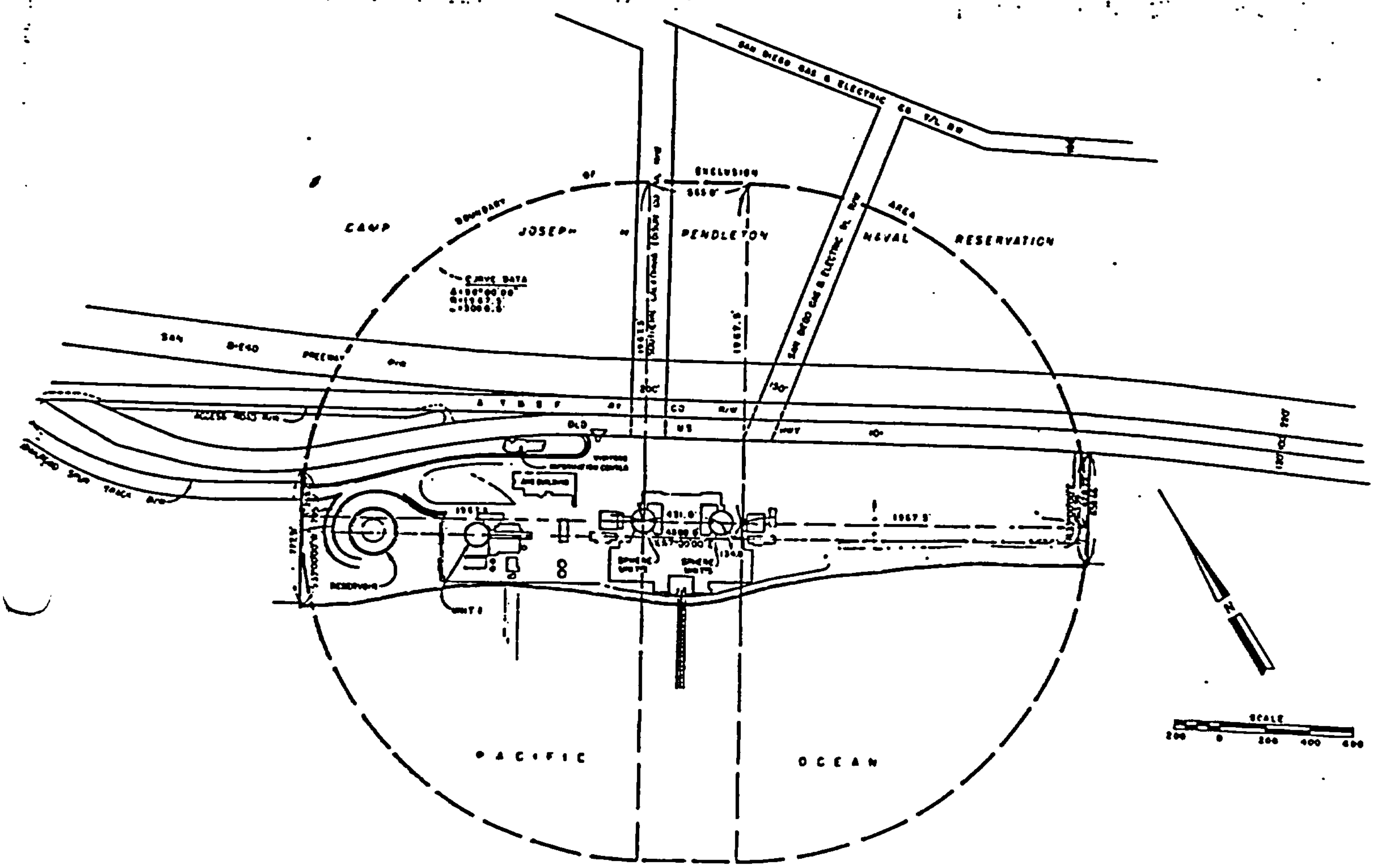

Figure 4.1-1 (page 1 of 1)

Exclusion Area Boundary

4.0 DESIGN FEATURES (continued)

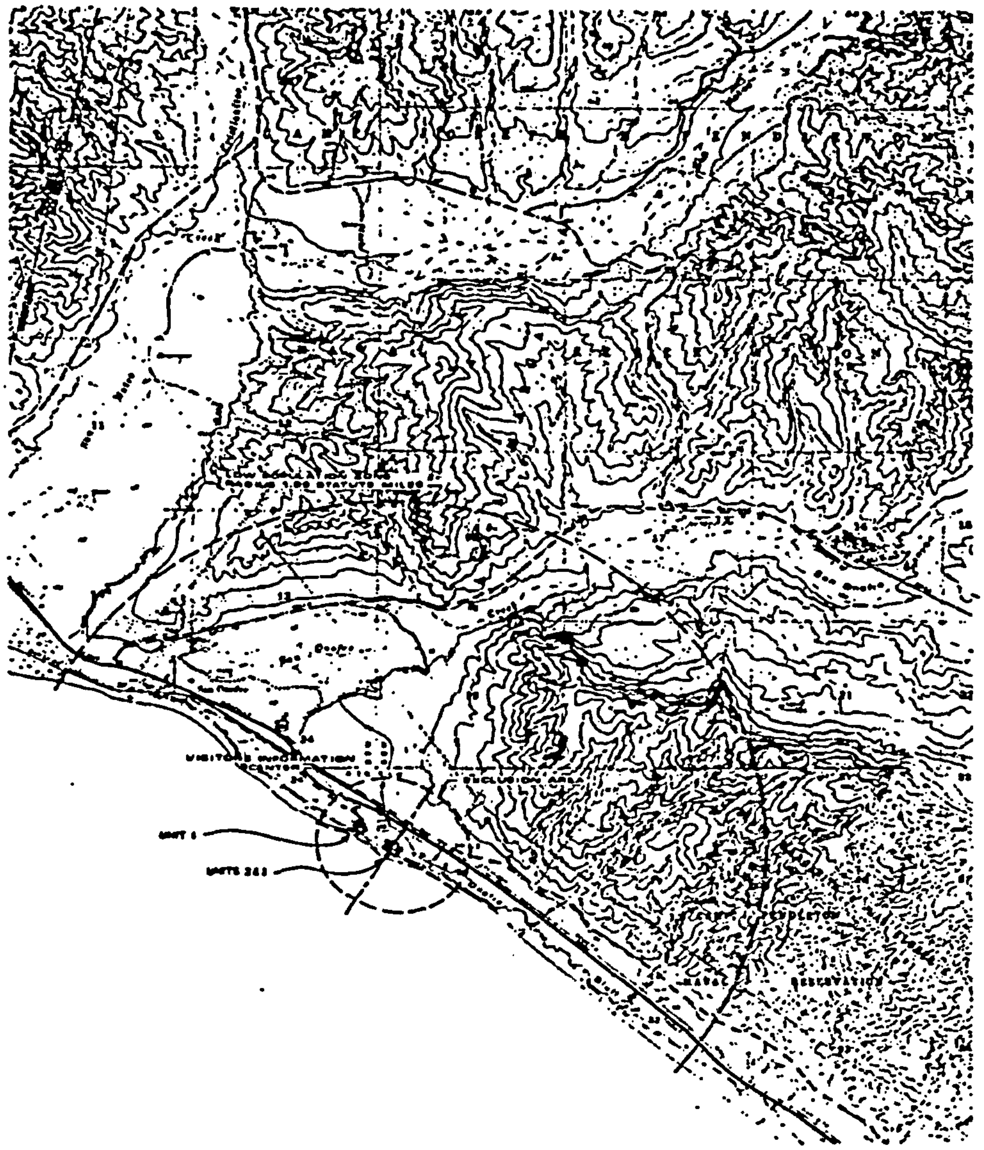

Figure 4.1-2 (page 1 of 1)
Low Population Zone

(continued)

4.0 DESIGN FEATURES (continued)

4.3 Fuel Storage

4.3.1 Criticality

4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

a. Fuel assemblies having a maximum U-235 enrichment of 4.8 weight percent;

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

c. $K_{eff} \leq 0.95$ if fully flooded with water borated to 1700 ppm, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR;

d. Three or five Borated stainless steel guide tube inserts (GT-Inserts) may be used. When three Borated stainless steel guide tube inserts are used, they will be installed in an assembly's center guide tube, the guide tube associated with the serial number, and the diagonally opposite guide tube. Fuel containing GT-Inserts may be placed in either Region I or Region II. However, credit for GT-Inserts is only taken for Region II storage.

   A five-finger CEA may be installed in an assembly. Fuel containing a five-finger CEA may be placed in either Region I or Region II. Credit for inserted 5-finger CEAs is taken for both Region I and Region II.

e. A nominal 8.85 inch center to center distance between fuel assemblies placed in Region II;

f. A nominal 10.40 inch center to center distance between fuel assemblies placed in Region I;

(continued)

4.0 DESIGN FEATURES (continued)

4.3.1 Criticality (continued)

g. Prior to using the storage criteria of LCO 3.7.18 and LCS 4.0.100, the following uncertainties will be applied:

(1) The calculated discharge burnup of San Onofre Units 2 and 3 assemblies will be reduced by 6.6%.

(2) The calculated discharge burnup of San Onofre Unit 1 fuel assemblies will be reduced by 10.0%.

h. Units 2 and 3 fuel assemblies with a burnup in the "acceptable range" of Figure 3.7.18-1 are allowed unrestricted storage in Region I;

i. Units 2 and 3 fuel assemblies with a burnup in the "acceptable range" of Figure 3.7.18-2 are allowed unrestricted storage in the peripheral pool locations with 1 or 2 faces toward the spent fuel pool walls of Region I;

j. Units 2 and 3 fuel assemblies with a burnup in the "acceptable range" of Figure 3.7.18-3 are allowed unrestricted storage in Region II;

k. Units 2 and 3 fuel assemblies with a burnup in the "acceptable range" of Figure 3.7.18-4 are allowed unrestricted storage in the peripheral pool locations with 1 or 2 faces toward the spent fuel pool walls of Region II;

l. Units 2 and 3 fuel assemblies with a burnup in the "unacceptable range" of Figure 3.7.18-1, Figure 3.7.18-2, Figure 3.7.18-3, and Figure 3.7.18-4 will be stored in compliance with Licensee Controlled Specification 4.0.100 Rev. 2, dated 09/27/07; and

m. Each SONGS 1 uranium dioxide spent fuel assembly stored in Region II shall be stored in accordance with Licensee Controlled Specification 4.0.100 Rev. 2, dated 09/27/07.

(continued)

4.0 DESIGN FEATURES

4.3 Fuel Storage (continued)

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 4.8 weight percent;

b. $K_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR;

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

d. A minimum 29 inch center to center distance between fuel assemblies placed in the storage racks.

4.3.2 Drainage

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below Technical Specification 3.7.16 value (23 feet above the top of irradiated fuel assemblies seated in the storage racks).

4.3.3 Capacity

The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 1542 fuel assemblies.

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

5.1.1 The corporate officer with direct responsibility for the plant shall be responsible for overall unit operation and maintenance of Units 2 and 3 at San Onofre Nuclear Generating Station, and all site support functions. He shall delegate in writing the succession to this responsibility during his absence.

5.1.2 The Shift Manager shall be responsible for the ultimate command decision authority for all unit activities and operations which affect the safety of the plant, site personnel, and/or the general public. A management directive to this effect, signed by the corporate officer with direct responsibility for the plant shall be reissued to all site/station personnel on an annual basis.

5.1.3 The Control Room Supervisor (CRS) shall be responsible for the Control Room command function. A management directive to this effect, signed by the corporate officer with direct responsibility for the plant, shall be issued annually to all site/station personnel. The confines of the Control Room Area shall be defined as depicted in the Licensee Controlled Specification (LCS). During any absence of the CRS from the Control Room Area while the Unit is in MODE 1, 2, 3, or 4, an individual with an active Senior Reactor Operator's (SRO) license shall be designated to assume the Control Room command function. During any absence of the CRS from the Control Room Area while the Unit is in MODE 5 or 6, an individual with an active SRO license or Reactor Operator's 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 the safety of the nuclear power plant.

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

b. The corporate officer with direct responsibility for the plant shall be responsible for overall unit safe operation and shall have control over those onsite activities necessary for safe operation and maintenance of the plant.

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

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

(continued)

5.2 Organization (continued)

5.2.2 UNIT STAFF

The unit staff organization shall include the following:

a. A non-Licensed Operator shall be assigned to each reactor containing fuel and an additional non-Licensed Operator shall be assigned for each unit when a reactor is operating in MODES 1, 2, 3, or 4.

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

b. At least one licensed Reactor Operator (RO) shall be in the Control Room when fuel is in the reactor. In addition, while the unit is in MODE 1, 2, 3 or 4, at least one licensed Senior Reactor Operator (SRO) shall be in the Control Room Area.

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

d. A radiation protection technician shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.

e. Deleted

f. The Manager, Plant Operations (at time of appointment), Shift Managers, and Control Room Supervisors shall hold a Senior Reactor Operator's license.

g. The Shift Technical Advisor (STA) shall provide advisory technical support to the Shift Manager in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. The STA shall have a Bachelor's Degree or equivalent in a scientific or engineering discipline with specific training in plant design and in the response and analysis of the plant for transients and accidents.

(continued)

5.2 Organization (continued)

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(continued)

5.0 ADMINISTRATIVE CONTROLS

5.3 Unit Staff Qualifications

5.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, except a) the radiation protection manager who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975, and b) multi-discipline supervisors who shall meet or exceed the qualifications listed below.

In addition, the Shift Technical Advisor shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.

Multi-discipline supervisors shall meet or exceed the following requirements:

a. Education: Minimum of a high school diploma or equivalent.

b. Experience: Minimum of four years of related technical experience which shall include three years power plant experience of which one year is at a nuclear plant.

c. Training: Complete the multi-discipline supervisor training program.

5.0 ADMINISTRATIVE CONTROLS

5.4 Technical Specifications (TS) Bases Control

5.4.1 Changes to the Bases of the TS shall be made under appropriate administrative controls.

5.4.2 Changes to the Bases may be made without prior NRC approval provided the changes do not require either of the following:

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

b. A change to the updated FSAR or Bases t.at requires NRC approval pursuant to 10 CFR 50.59.

5.4.3 The Bases Control Program shall contain pro/isions to ensure that the Bases are maintained consistent with the UFSAR.

5.4.4 Proposed changes that meet the criteria of (a) or (b) above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC within 6 months following every Unit 3 refueling, not to exceed 24 months. This schedule is consistent with SCE's submittal of UFSAR updates as allowed by the NRC approved exemption for 10 CFR 50.71(e) dated April 27, 1999.

5.0 ADMINISTRATIVE CONTROLS

5.5 Procedures, Programs, and Manuals

5.5.1 Procedures

5.5.1.1 Scope

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 using the guidance in Regulatory Guide 4.15, Revision 1, 1979;

d. Fire Protection Program implementation; and

e. Programs, as specified in Specification 5.5.2.

f. Modification of core protection calculator (CPC) addressable constants. These procedures shall include provisions to ensure that sufficient margin is maintained in CPC type I addressable constants to avoid excessive operator interaction with CPCs during reactor operation.

Modifications to the CPC software (including changes of algorithms and fuel cycle specific data) shall be performed in accordance with the most recent version of "CPC Protection Algorithm Software Change Procedure," CEN-39(A)-P, which has been determined to be applicable to the facility. Additions or deletions to CPC addressable constants or changes to addressable constant software limit values shall not be implemented without prior NRC approval.

(continued)

5.5 Procedures, Programs, and Manuals (continued)

5.5.2 Programs and Manuals

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

5.5.2.1 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;

b. The ODCM shall also contain the Radioactive Effluent Controls required by Specification 5.5.2.3 and the Radiological Environmental Monitoring programs required by the LCS, and descriptions of the information that should be included in the Annual Radiological Environmental Operating Report and the Radioactive Effluent Release Report required by Specification 5.7.1.2 and Specification 5.7.1.3.

5.5.2.1.1 Licensee-initiated changes to the ODCM:

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

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

   2. A determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.106, 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.

   3. Documentation of the fact that the change has been reviewed and found acceptable.

b. Shall become effective upon review and approval by the corporate officer with direct responsibility for the plant or designee.

(continued)

5.5 Procedures, Programs, and Manuals

5.5.2.1.1 Licensee-initiated changes to the ODCM: (continued)

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

5.5.2.2 Deleted

5.5.2.3 Radioactive Effluent Controls Program

This program conforming to 10 CFR 50.36a provides 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 operating 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 CFR 20, Appendix B, Table II, Column 2;

c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.106 and with the methodology and parameters in the ODCM;

(continued)

5.5 Procedures, Programs, and Manuals

5.5.2.3 Radioactive Effluent Controls Program (continued)

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;

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 percent of the guidelines for the annual dose or dose commitment, conforming to 10 CFR 50, Appendix I;

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

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

i. Limitations on the annual and quarterly doses to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 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.

5.5.2.4 Component Cyclic or Transient Limit Program

This program provides controls to track the UFSAR Table 3.9-1 cyclic and transient occurrences to ensure that components are maintained within the design limits.

(continued)

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.5 Reactor Coolant Pump Flywheel Inspection Program

Surveillance of the primary coolant pump flywheels shall consist of a 100% volumetric inspection of the flywheels each 10 years.

5.5.2.6 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 parameters and control points for these parameters;

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

c. Identification of process sampling points;

d. Procedures for the recording and management of data;

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

f. A procedure identifying (a) the authority responsible for interpretation of data and (b) the sequence and timing of administrative events, required to initiate corrective action.

5.5.2.7 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the Gaseous Radwaste System, the quantity of radioactivity contained in gas storage tanks, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The gaseous radioactivity quantities shall be determined following methodology comparable with Branch Technical Position (BTP) ETSB 11-5, "Postulated Radioactive Release due to Waste Gas System Leak or Failure". The liquid radwaste quantities shall be determined in accordance with Standard Review Plan, Section 15.7.3, "Postulated Radioactive Release due to Tank Failures".

(continued)

5.5 Procedures, Programs, and Manuals

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

The program shall include:

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

b. A surveillance program to ensure that the quantity of radioactivity contained in each waste gas decay tank and fed into the gaseous radwaste vent system is less than the amount that would result in a whole body exposure of greater than or equal to 0.5 rem to any individual in the 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 Waste Management System is less than the amount that would result in concentrations less than the limits of 10 CFR Part 20, Appendix B, Table II, Column 2, at the nearest potable water supply and the nearest surface water supply in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

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.

5.5.2.8 Primary Coolant Sources Outside Containment Program

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include high pressure safety injection recirculation, the shutdown cooling system, the reactor coolant sampling system (post-accident sampling piping only until such time as a modification eliminates the post-accident piping as a potential leakage path), the containment spray system, the radioactive waste gas system (post-accident sampling return piping only until such time as a modification eliminates the post-accident piping as a potential leakage path), and the liquid radwaste

(continued)

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5.5 Procedures, Programs, and Manuals (continued)

5.5.2.8 Primary Coolant Sources Outside Containment Program (continued)

system (post-accident sampling return piping only until such time as a modification eliminates the post-accident piping 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.

5.5.2.9 Pre-Stressed Concrete Containment Tendon Surveillance Program

This program provides controls for monitoring any tendon degradation in pre-stressed concrete containment, including effectiveness of its corrosion protection medium, to ensure containment structural integrity. Program itself is relocated to the LCS.

5.5.2.10 Inservice Inspection and Testing Program

This program provides controls for inservice inspection of ASME Code Class 1, 2, and 3 components and Code Class CC and MC components including applicable supports. The program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components. The program itself is located in the LCS.

5.5.2.11 Steam Generator (SG) Program

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

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.

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.11 Steam Generator (SG) Program (continued)

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 steam generator 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 and all anticipated transients included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is not to exceed 0.5 gpm per SG and 1 gpm through both SGs.

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

(continued)

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.11 Steam Generator (SG) Program (continued)

c. Provisions for SG tube repair criteria.

1. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 35% of the nominal tube wall thickness shall be plugged.

d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria. The tube-to-tubesheet weld is not part of the tube.

In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. An assessment of degradation shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

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

2. Inspect 100% of the tubes at sequential periods of 144, 108, 72, and thereafter, 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. In addition, inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outage nearest the end of the period. No SG shall operate for more than 72 effective full power months or three refueling outages (whichever is less) without being inspected.

3. If crack indications are found in any SG tube, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever is less). 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.

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5.5 Procedures, Programs, and Manuals (continued)

5.5.2.12 Ventilation Filter Testing Program (VFTP)

This Program establishes the required testing of the Engineered Safety Feature filter ventilation system "Control Room Emergency Air Cleanup System." The frequency of testing shall be in accordance with Regulatory Guide 1.52, Revision 2. As a minimum the VFTP program shall include the following:

a. Inplace testing of the high efficiency particulate air (HEPA) filters to demonstrate acceptable penetration and system bypass when tested at the appropriate system flowrate in accordance with Regulatory Guide 1.52, Revision 2, and ANSI N510-1975 (see Note 1); and

b. Inplace testing of the charcoal adsorber to demonstrate acceptable penetration and system bypass when tested at the appropriate system flowrate in accordance with Regulatory Guide 1.52, Revision 2, and ANSI N510-1975 (see Note 1); and

c. Laboratory testing of charcoal adsorber samples obtained in accordance with Regulatory Guide 1.52, Revision 2 and tested per the methodology of ASTM D3803-1989 at 30°C and 70% relative humidity to show acceptable methyl iodide penetration; and

d. Testing to demonstrate the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers, when tested at the appropriate system flowrate.

Note 1: Sample and injection points shall be qualified per ANSI N510-1975 unless manifolds have been qualified per ASME N510-1989. HEPA testing will be conducted with DOP aerosol or suitable alternate.

(continued)

5.5 Procedures, Programs, and Manuals (continued)

5.2.12 Ventilation Filter Testing Program (VFTP) (continued)

The provisions of Technical Specification Surveillance Requirement 3.0.2 and Technical Specification Surveillance Requirement 3.0.3 are applicable to the VFTP test frequencies.

5.5.2.13 Diesel Fuel Oil Testing Program

This program implements required testing of both new fuel oil and stored fuel oil. 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 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 water and sediment content within limits.

b. Other properties for ASTM 2D fuel oil are within limits within 31 days following sampling and addition to the storage tanks, with exceptions noted in the Bases for Surveillance Requirement 3.8.3.3; and,

c. Total particulate concentration of fuel oil is ≤ 10 mg/l when tested every 92 days in accordance with ASTM D-2276, Method A.

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5.5 Procedures, Programs, and Manuals (continued)

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5.5 Procedures, Programs, and Manuals (continued)

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5.5.2.15 Containment Leakage Rate Testing Program

A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995 as modified by the following exception:

> NEI 94-01 - 1995, Section 9.2.3: The first Type A Test performed after the September 10, 1995 Type A Test shall be performed prior to startup from the Unit 3 Cycle 16 refueling outage, which is scheduled to commence in the fall of 2010 and to end in the first quarter of 2011. SONGS Unit 3 shall not operate past September 9, 2011 until the Type A Test is satisfactorily completed.

The calculated peak containment internal pressure related to the design basis loss-of-coolant accident, P_a, is 48.0 psig (P_a will conservatively be assumed to be equal to the calculated peak containment internal pressure for the design basis Main Steam Line Break (51.5 psig) for the purpose of containment testing in accordance with this Technical Specification).

The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.10% of containment air weight per day.

Leakage rate acceptance criteria are:

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

b. Air lock testing acceptance criteria are:

   1) Overall air lock leakage rate is $\leq 0.05\ L_a$ when tested at $\geq P_a$.

   2) For each door, the leakage rate is $\leq 0.01\ L_a$ when pressurized to ≥ 9.0 psig.

(continued)

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.15 Containment Leakage Rate Testing Program (Continued)

The provisions of Surveillance Requirement 3.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program. However, test frequencies specified in this Program may be extended consistent with the guidance provided in NEI 94-01, "Industry Guideline For Implementing Performance-Based Option Of 10CFR 50, Appendix J," as endorsed by Regulatory Guide 1.163. Specifically, NEI 94-01 has these provisions for test frequencies extension:

1. Consistent with standard scheduling practices for Technical Specifications Required Surveillances, intervals for recommended Type A testing may be extended by up to 15 months. This option should be used only in cases where refueling schedules have been changed to accommodate other factors.

2. Consistent with standard scheduling practices for Technical Specifications Required Surveillances, intervals for the recommended surveillance frequency for Type B and Type C testing may be extended by up to 25 percent of the test interval, not to exceed 15 months.

The provisions of Surveillance Requirement 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

5.5.2.16 Control Room Envelope Habitability Program

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

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

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

(continued)

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.16 Control Room Envelope Habitability Program (Continued)

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 is an exception to Sections C.1 and C.2 of regulatory Guide 1.197, Revision 0:

Appropriate application of ASTM E-741 shall include the ability to take minor exceptions to the test methodology. These exceptions shall be documented in the test report.

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 CREACUS, operating at the flow rate required by the VFTP, at a Frequency of 24 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the 24 month assessment of the CRE boundary.

e. The quantitative limits on unfiltered air 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.

(continued)

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.17 Battery Monitoring and Maintenance Program

This program provides for battery restoration and maintenance, which includes the following:

a. Actions to restore battery cells with float voltage < 2.13 V, and

b. Actions to verify that the remaining cells are above 2.07 V when a battery cell or cells have been found less than 2.13 V, and

c. Actions to equalize and test battery cells that had been discovered with electrolyte level below the top of the plates.

5.0 ADMINISTRATIVE CONTROLS

5.6 Safety Function Determination Program (SFDP)

5.6.1 This program ensures loss of safety function is detected and appropriate actions taken. Upon failure to meet two or more LCOs at the same time, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate limitations and remedial or compensatory actions may be identified to be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6.

5.6.2 The SFDP shall contain the following:

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

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

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

d. Other appropriate limitations and remedial or compensatory actions.

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

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

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

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

(continued)

5.6 Safety Function Determination Program (SFDP)

5.6.3
(continued)

Generic Example:

<u>Train A</u>		<u>Train B</u>	
System i		System i	← Case C
↓		↓	
System ii	← (Support System) Inoperable	System ii	
↓		↓	
System iii		System iii	← Case A
↓		↓	
System iv		System iv	← Case B

5.6.4 The Safety Function Determination Program 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.

5.0 ADMINISTRATIVE CONTROLS

5.7 Reporting Requirements

5.7.1 Routine Reports

In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted in accordance with 10 CFR 50.4. The reports shall be addressed to the U.S. Nuclear Regulatory Commission, Attention: Document Control Desk, Washington, D.C., with a copy to the Regional Administrator of the Regional Office of the NRC, unless otherwise noted.

5.7.1.1 Annual Reports

--------------------------------NOTE--------------------------------
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

Annual Reports covering the activities of the unit as described below for the previous calendar year shall be submitted by March 31 of each year.

Reports required on an annual basis include:

a. (Deleted)

(continued)

5.7 Reporting Requirements

5.7.1.1 Annual Reports (continued)

b. Reactor Coolant System Specific Activity Report

Reports required on an annual basis shall include the results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.4.16. The following information shall be included in these reports:

1. Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; and

2. Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while the limit was exceeded and results of one analysis after the radioiodine activity was reduced to less than the limit. Each result should include date and time of sampling and the radioiodine concentrations; and

3. Cleanup system flow history starting 48 hours prior to the first sample in which the limit was exceeded; and

4. Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and

5. The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.

5.7.1.2 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 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the

(continued)

5.7 Reporting Requirements

5.7.1.2 Annual Radiological Environmental Operating Report (continued)

objectives outlined in the Offsite Dose Calculation Manual (ODCM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODCM, as well as summarized and tabulated results of these analyses and measurements in the format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979. The report shall identify the thermoluminescent dosimeter (TLD) results that represent collocated dosimeters in relation to the NRC TLD program and the exposure period associated with each result. 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.

5.7.1.3 Radioactive Effluent Release 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; 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 calendar year shall be submitted before May 1 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents released from the unit. The report shall also include a summary of the quantities of solid radioactive waste shipped from the unit directly to the disposal site and quantities of solid radioactive waste shipped from the unit's intermediary processor to the disposal site. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program (PCP) and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

(continued)

5.7 Reporting Requirements (continued)

5.7.1.4 (Deleted)

5.7.1.5 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. Specification 3.1.1, "SHUTDOWN MARGIN (SDM) - T_{avg} >200°F;"

2. Specification 3.1.2, "SHUTDOWN MARGIN (SDM) - T_{avg} ≤200°F;"

3. Specification 3.1.4, "Moderator Temperature Coefficient;"

4. Specification 3.1.5, "Control Element Assembly (CEA) Alignment;"

5. Specification 3.1.7, "Regulating CEA Insertion Limits;"

6. Specification 3.1.8, "Part Length Control Element Assembly Insertion Limits;"

7. Specification 3.2.1, "Linear Heat Rate;"

8. Specification 3.2.4, "Departure From Nucleate Boiling Ratio;"

9. Specification 3.2.5, "Axial Shape Index;"

10. Specification 3.4.1, "RCS DNB (Pressure, Temperature, and Flow) Limits;

11. Specification 3.9.1, "Boron Concentration."

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

(continued)

5.7 Reporting Requirements (continued)

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

1. CENPD-132P, "Calculative Methods for the C-E Large Break LOCA Evaluation Model"

2. CENPD-137P, "Calculative Methods for the C-E Small Break LOCA Evaluation Model"

3. CEN-356(V)-P-A, "Modified Statistical Combination of Uncertainties"

4. SCE-9801-P-A, "Reload Analysis Methodology for the San Onofre Nuclear Generating Station Units 2 and 3"

5. CEN-635(S), "Identification of NRC Safety Evaluation Report Limitations and/or Constraints on Reload Analysis Methodology"

6. Letter, dated May 16, 1986, G. W. Knighton (NRC) to K. P. Baskin (SCE), "Issuance of Amendment No. 47 to Facility Operating License NPF-10 and Amendment No. 36 to Facility Operating License NPF-15," San Onofre Nuclear Generating Station Units 2 and 3 (Cycle 3 SER)

7. Letter, dated January 9, 1985, G. W. Knighton (NRC) to K. P. Baskin, "Issuance of Amendment No. 30 to Facility Operating License NPF-10 and Amendment No. 19 to Facility Operating License NPF-15," San Onofre Nuclear Generating Station Units 2 and 3 (Cycle 2 SER)

8. "Implementation of ZIRLO™ Cladding Material in CE Nuclear Power Fuel Assembly Designs," CENPD-404-P-A

9. SCE-0901, "PWR Reactor Physics Methodology Using Studsvik Design Codes"

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 System 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 mid-cycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.7.1.6 REACTOR COOLANT SYSTEM (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

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

(continued)

5.7 Reporting Requirements (continued)

5.7.1.6 REACTOR COOLANT SYSTEM (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR) (continued)

Technical Specification 3.4.3 RCS Pressure and Temperature (P/T) Limits,

Technical Specification 3.4.6 RCS Loops - MODE 4,

Technical Specification 3.4.7 RCS Loops - MODE 5, Loops Filled,

Technical Specification 3.4.12.1 Low Temperature Overpressure Protection (LTOP) System RCS Temperature ≤ PTLR Limit, and

Technical Specification 3.4.12.2 Low Temperature Overpressure Protection (LTOP) System RCS Temperature > PTLR Limit.

b. The analytical methods used to determine the RCS pressure and temperature limits shall be those previously reviewed and approved by the NRC, specifically those described in the following document:

   CE NPSD-683-A, The Development of a RCS Pressure and Temperature Limits Report for the Removal of P-T Limits and LTOP Setpoints from the Technical Specifications.

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

5.7.1.7 Hazardous Cargo Traffic Report

Hazardous cargo traffic on Interstate 5 (I-5) and the AT&SF railway shall be monitored and the results submitted to the NRC Regional Administrator once every three years.

(continued)

5.7 Reporting Requirements (continued)

5.7.2 Special Reports

Special Reports may be required covering inspection, test, and maintenance activities. These special reports are determined on an individual basis for each unit and their preparation and submittal are designated in the Technical Specifications.

Special Reports shall be submitted to the U. S. Nuclear Regulatory Commission, Attention: Document Control Desk, Washington, D. C. 20555, with a copy to the Regional Administrator of the Regional Office of the NRC, in accordance with 10 CFR 50.4 within the time period specified for each report.

The following Special Reports shall be submitted:

a. When a pre-planned alternate method of monitoring post-accident instrumentation functions is required by Condition B or Condition G of LCO 3.3.11, a report shall be submitted within 30 days from the time the action is required. The report shall outline the action taken, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the function to OPERABLE status.

b. Any abnormal degradation of the containment structure detected during the tests required by the Pre-Stressed Concrete Containment Tendon Surveillance Program shall be reported to the NRC within 30 days. The report shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedures, the tolerances on cracking, and the corrective action taken.

c. 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 5.5.2.11, Steam Generator (SG) Program. The report shall include:

(continued)

5.7 Reporting Requirements (continued)

5.7.2 Special Reports (continued)

1. The scope of inspections performed on each SG,
2. Active degradation mechanisms found,
3. Nondestructive examination techniques utilized for each degradation mechanism,
4. Location, orientation (if linear), and measured sizes (if available) of service induced indications,
5. Number of tubes plugged during the inspection outage for each active degradation mechanism,
6. Total number and percentage of tubes plugged to date,
7. The results of condition monitoring, including the results of tube pulls and in-situ testing.

5.0 ADMINISTRATIVE CONTROLS

5.8 High Radiation Area

5.8.1 Each high radiation area as defined in 10 CFR 20 shall be barricaded and conspicuously posted as a high radiation area, and entrance thereto shall be controlled by requiring issuance of a Radiation Exposure Permit (REP)

Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

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

b. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rates in the area have been determined and personnel have been made knowledgeable of them,

c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device. This individual is responsible for providing positive radiation protection control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified in the radiation protection procedures or the applicable REP.

(continued)

5.8. High Radiation Area (continued)

5.8.2 In addition, areas that are accessible to personnel and that have radiation levels greater than 1.0 rem (but less than 500 rads at 1 meter) in 1 hour at 30 cm from the radiation source, or from any surface penetrated by the radiation, shall be provided with locked doors to prevent unauthorized entry, and the keys shall be maintained under the administrative control of the shift manager on duty or radiation protection supervisor. Doors shall remain locked except during periods of access by personnel under an approved REP that specifies the dose rates in the immediate work areas and the maximum allowable stay time for individuals in that area. In lieu of a stay time specification on the REP, direct or remote continuous surveillance (such as closed circuit TV cameras) may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the area.

5.8.3 Individual high radiation areas that are accessible to personnel, that could result in radiation doses greater than 1.0 rem in 1 hour, and that are within large areas, where no enclosure exists to enable locking and where no enclosure can be reasonably constructed around the individual area shall be barricaded and conspicuously posted. A flashing light shall be activated as a warning device whenever the dose rate in such an area exceeds or is expected to exceed 1.0 rem in 1 hour at 30 cm from the radiation source or from any surface penetrated by the radiation.

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Issued with 5% Low Power Testing License of 11-15-82

APPENDIX B

TO FACILITY LICENSE NO. NPF-15

FOR

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 3

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

AND

THE CITY OF ANAHEIM, CALIFORNIA

DOCKET NO. 50-362

ENVIRONMENTAL PROTECTION PLAN

NOVEMBER 1982

SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 3

ENVIRONMENTAL PROTECTION PLAN
(NON-RADIOLOGICAL)

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1.0 Objectives of the Environmental Protection Plan

The Environmental Protection Plan (EPP) is to provide for protection of environmental values during construction and operation of the nuclear facility. The principal objectives of the EPP are as follows:

(1) Verify that the plant is operated in an environmentally acceptable manner, as established by the FES and other NRC environmental impact assessments.

(2) Coordinate NRC requirements and maintain consistency with other Federal, State and local requirements for environmental protection.

(3) Keep NRC informed of the environmental effects of facility construction and operation and of actions taken to control those effects.

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

2.0 Environmental Protection Issues

In the FES-OL dated April 1981, the staff has considered the environmental impacts associated with the operation of the San Onofre Nuclear Generating Station. Certain environmental issues were identified which required study or license conditions to resolve environmental concerns and to assure adequate protection of the environment.

2.1 Aquatic Issues

(1) The need for aquatic monitoring programs to ensure protection of the San Onofre kelp bed (FES-OL, Sections 5.4.2.1 and 6.3.1).

(2) The need for continuation of the ichthyoplankton study until such time as it is possible to state credibly that no significant impacts result from the facility (FES-OL, Section 6.3.1).

(3) The need for a program for optimizing the effectiveness of the fish return system (FES-OL, Section 6.3.1).

Aquatic issues are to be addressed by the effluent limitations, monitoring requirements and demonstration studies contained in the effective NPDES permit issued by the California Regional Water Quality Control Board-San Diego Region. The NRC will rely on that agency for regulation of matters involving water quality and aquatic biota.

2.2 Terrestrial Issues

None.

2.3 Cultural Resources Issues

(1) The need to protect the archeological sites within the 230 kV transmission line right-of-way which were identified to be eligible for the National Register of Historic Places.

Protection will be provided through a data recovery program. NRC requirements with regard to the cultural resources issue are specified in Subsection 4.2.1 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 changes, tests or experiments do not involve an unreviewed environmental question. Changes in plant design or operation or performance of tests or experiments which do not affect the environment are not subject to this requirement. Activities governed by Section 3.3 are not subject to the requirements of this section.

Before engaging in unauthorized construction or operational activities which may affect the environment, the licensee shall prepare and record an environmental evaluation of such activity.* When the evaluation indicates that such activity involves an unreviewed question, the licensee shall provide a written evaluation of such activities and obtain prior approval from the NRC.

A proposed change, test or experiment shall be deemed to involve an unreviewed environmental question if it concerns (1) a matter which may result in a significant increase in any adverse environmental impact previously evaluated in the final environmental statement (FES) as modified by the staff's testimony to the Atomic Safety and Licensing Board, supplements to the FES, environmental impact appraisals, or in any decisions of the Atomic Safety and Licensing Board; or (2) a significant change in effluents or power level (in accordance with 10 CFR Part 51.5(b)(2)) 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 a written evaluation which provide bases for the determination that the change, test, or experiment does not involve an unreviewed environmental question.

*Activities are excluded from this requirement if all measurable nonradiological effects are confined to the on-site areas previously disturbed during site preparation and plant construction.

3.2 Reporting Related to the NPDES Permits and State Certifications

Violations of the NPDES Permit or State certification (pursuant to Section 401 of the Clean Water Act) shall be reported to the NRC by submittal of copies of the reports required by the NPDES Permit or certification. The licensee shall also provide the NRC with a copy of the results of the following studies at the same time they are submitted to the permitting agency:

Section 316(b) Demonstration Study

Changes and additions to the NPDES Permit or the State certification shall be reported to the NRC within 30 days following the date the change is approved. If a permit or certification, 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.

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, or local environmental regulations are not subject to the requirements of Section 3.1.

4.0 Environmental Conditions

4.1 Unusual or Important Environmental Events

Any occurrence of an unusual or important event that indicates or could result in significant environmental impact causally related to station operation shall be recorded and promptly reported to the NRC within 24 hours followed by a written report within 30 days. No routine monitoring programs are required to implement this condition.

The written 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 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 a copy of such report as soon as practical but no later than 30 days after it is submitted to the other agency.

The following are examples of unusual or important 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; unusual fish kills; increase in nuisance organisms or conditions; and unanticipated or emergency discharge of waste water or chemical substances.

4.2 Environmental Protection Program

4.2.1 Cultural Resources Data Recovery Program

Fourteen archeological sites have been identified within the San Onofre 230 kV transmission line rights-of-way which have been determined to be eligible for the National Register of Historic Places. It has been agreed by the NRC, the

State Historic Preservation Officer (SHPO) and the licensee that the 14 sites would be adversely affected by the expected operation and maintenance activities of the licensee. It was further agreed that the appropriate action to be taken for negating the adverse effects would be a data recovery program; such action would permit documentation of "no adverse effect" determinations.

The licensee is required to provide the NRC with a data recovery program which has been developed in consultation with the SHPO and concurred in by the SHPO. The 14 sites involved in the data recovery program are designated as ORA-495, ORA-496, ORA-499, ORA-825, ORA-830, ORA-831, SDi-6140, ORA-824, ORA-498, SDi-6130, SDi-6149, ORA-447, ORA-725, and ORA-438. The applicant will follow the guidelines presented in "Treatment of Archeological Properties, A Handbook" published by the Advisory Council on Historic Preservation (ACHP), November 1980 and in the Code of Federal Regulations referred to therein.

After ACHP comment is received by the NRC, the data recovery program will be revised, if necessary, to incorporate any comments provided by the ACHP. The applicant will then proceed, in consultation with the SHPO, to implement the data recovery program. Upon completion of the data recovery program, a report shall be submitted to the NRC which will include a description of the results of the program and the disposition of the data recovered. Upon submittal of this report, this section of the EPP is fully satisfied with no further action required.