CALVERT CLIFFS

NUCLEAR POWER PLANT

UNIT 1

TECHNICAL SPECIFICATIONS

APPENDIX "A"
TO
LICENSE NO. DRP-53

TECHNICAL SPECIFICATIONS

ISSUED BY THE UNITED STATES NUCLEAR REGULATORY COMMISSION

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 core locations.
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 sensor and alarm and/or trip functions, and shall include the CHANNEL FUNCTIONAL TEST. 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

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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:

Analog Channels - the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify OPERABILITY, including alarm and/or trip functions.

Bistable Channels - the injection of a simulated signal into the channel sensor to verify OPERABILITY including alarm and/or trip functions.

CORE ALTERATION

CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

CORE OPERATING LIMITS REPORT (COLR)

The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific parameter limits shall be determined for each reload cycle in accordance with Specification 5.6.5. Plant operation within these limits is addressed in individual Specifications.

1.1 Definitions

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 Table III of TID-14844, AEC, 1962, "Calculation of Distance Factors for Power and Test Reactor Sites."
$\bar{E}$-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 non-iodine 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.
L_a	The maximum allowable containment leakage rate, L_a, shall be 0.20% of containment air weight per day at the calculated peak containment pressure (P_a).

1.1 Definitions

LEAKAGE

LEAKAGE shall be:

a. Identified LEAKAGE

1. LEAKAGE, such as that from pump seals or valve packing (except reactor coolant pump (RCP) seal 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 (SG) to the Secondary System.

b. Unidentified LEAKAGE

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

c. Pressure Boundary LEAKAGE

LEAKAGE (except SG 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 bolts specified in Table 1.1-1 with fuel in the reactor vessel.

OPERABLE-OPERABILITY

A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is

1.1 Definitions

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 13, Initial Tests and Operation of the Updated Final Safety Analysis Report; b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 2700 MWt.
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.
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

1.1 Definitions

assuming all full length control element assemblies (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.

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	≥ 300
4	Hot Shutdown[(b)]	< 0.99	NA	$300 > T_{avg} > 200$
5	Cold Shutdown[(b)]	< 0.99	NA	≤ 200
6	Refueling[(c)]	NA	NA	NA

(a) Excluding decay heat

(b) Reactor vessel head bolted

(c) Reactor vessel head unbolted

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 <u>AND</u> and <u>OR</u>. 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.

1.2 Logical Connectors

EXAMPLE 1.2-1

ACTIONS

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

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

1.2 Logical Connectors

EXAMPLE 1.2-2

ACTIONS

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

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

1.0 USE AND APPLICATION

1.3 Completion Times

PURPOSE

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

BACKGROUND

Limiting Conditions for Operation (LCOs) specify minimum requirements for ensuring safe operation of the unit. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Action(s) and Completion Time(s).

DESCRIPTION

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

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

Once a Condition has been entered, subsequent trains, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will <u>not</u> result in separate entry into the Condition, unless specifically stated. The Required Actions of the Condition

1.3 Completion Times

continue to apply to each additional failure, with Completion Times based on initial entry into the Condition.

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

a. Must exist concurrent with the first inoperability; and

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

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

1.3 Completion Times

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.

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.

1.3 Completion Times

EXAMPLE 1.3-2

ACTIONS

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

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

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

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

1.3 Completion Times

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.

1.3 Completion Times

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

1.3 Completion Times

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.

1.3 Completion Times

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 the extension) expires while one or more valves are still inoperable, Condition B is entered.

1.3 Completion Times

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.

If the Completion Time associated with a valve in Condition A expires, Condition B is entered for that valve.

1.3 Completion Times

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

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

1.3 Completion Times

EXAMPLE 1.3-6

ACTIONS

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

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

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

1.3 Completion Times

EXAMPLE 1.3-7

ACTIONS

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

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

If after Condition A is entered, Required Action A.1 is not met within either the initial 1 hour or any subsequent 8 hour interval from the previous performance (plus the extension allowed by SR 3.0.2), Condition B is entered.

1.3 Completion Times

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.

1.4 Frequency

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.

1.4 Frequency

EXAMPLE 1.4-2

SURVEILLANCE REQUIREMENTS

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

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

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

1.4 Frequency

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 the extension allowed by SR 3.0.2) interval, but operation was < 25% RTP, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not exceed 12 hours with power ≥ 25% RTP.

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

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 In MODES 1 and 2, the combination of THERMAL POWER, pressurizer pressure, and the highest operating loop cold leg coolant temperature shall not exceed the limits shown in Figure 2.1.1-1.

2.1.1.2 In MODES 1 and 2, the peak linear heat rate (LHR) shall be ≤ 22.0 kW/ft.

2.1.2 Reactor Coolant System (RCS) Pressure SL

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

2.2 SL Violations

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

2.2.2 If SL 2.1.2 is violated:

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

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

2.0 SAFETY LIMITS (SLs)

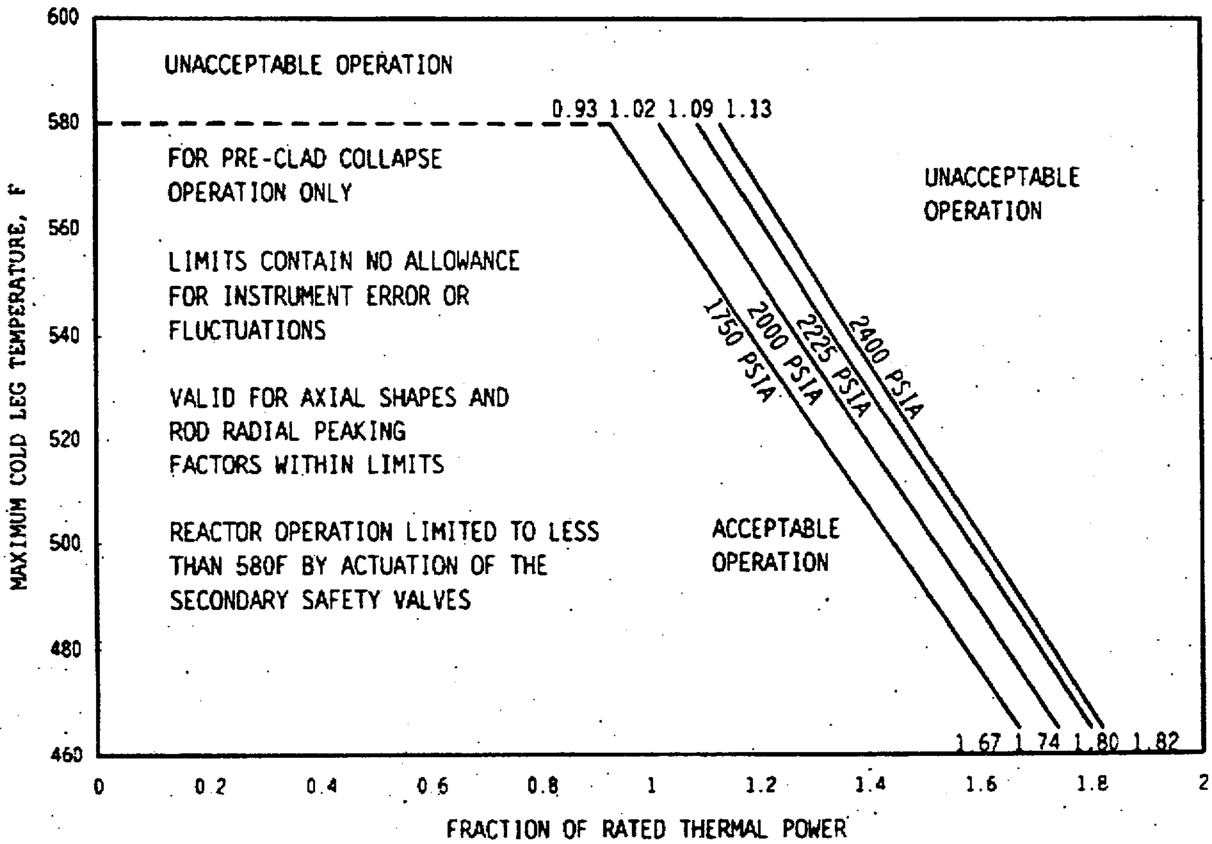

Figure 2.1.1-1
Unit 1 and Unit 2 Reactor Core Thermal Margin Safety Limit

3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

LCO 3.0.1

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

LCO 3.0.2

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

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

LCO 3.0.3

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

a. MODE 3 within 7 hours;

b. MODE 4 within 13 hours; and

c. MODE 5 within 37 hours.

Exceptions to this Specification are stated in the individual Specifications.

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

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

3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

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

Exceptions to this Specification are stated in the individual Specifications.

LCO 3.0.4 is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4.

LCO 3.0.5

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

LCO 3.0.6

When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, additional evaluations and limitations may be required in accordance with Specification 5.5.15, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

LCO 3.0.7 Special test exception (STE) LCOs in each applicable LCO section allow specified Technical Specification (TS) requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. Compliance with 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 less. This delay period is permitted to allow performance of the Surveillance.

3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

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

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

SR 3.0.4 Entry into a MODE or other specified condition in the Applicability of an LCO shall 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, or that are part of a shut down of the unit.

SR 3.0.4 is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.1 SHUTDOWN MARGIN (SDM)

LCO 3.1.1 SDM shall be within limits as specified in the COLR, AND when in MODE 5 with pressurizer level < 90 inches, the Reactor Coolant System level shall be above the bottom of the hot leg nozzles and all sources of non-borated water shall be ≤ 88 gpm.

APPLICABILITY: MODES 3, 4, and 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. --------NOTE-------- Only applicable in MODE 5 with pressurizer level < 90 inches. --------------------- Non-borated water sources > 88 gpm.	A.1 --------NOTE-------- Not required if SDM has been increased to compensate for the additional sources of non-borated water. -------------------- Suspend positive reactivity changes. AND	 Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2	Initiate action to increase SDM to compensate for the additional non-borated water sources.	Immediately
	<u>AND</u>		
	A.3	Verify SDM has been increased to compensate for the additional sources of non-borated water.	Once per 12 hours
B. -------- NOTE -------- Only applicable in MODE 5 with pressurizer level < 90 inches. --------------------- Reactor Coolant System level at or below the bottom of the hot leg nozzles.	B.1	Suspend positive reactivity changes.	Immediately
	<u>AND</u>		
	B.2	Initiate action to increase Reactor Coolant System level to above the bottom of the hot leg nozzles.	Immediately
C. SDM not within limits for reasons other than Condition A or B.	C.1	Initiate boration to restore SDM to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.1.1	Verify SDM is within limits specified in the COLR.	24 hours
SR 3.1.1.2	-------------------NOTE------------------- Only required in MODE 5 with pressurizer level < 90 inches. -- Verify Reactor Coolant System level is above the bottom of the hot leg nozzles.	Once within 1 hour after achieving MODE 5 with pressurizer level < 90 inches <u>AND</u> 12 hours thereafter

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.1.1.3	-------------------NOTE------------------- Only required in MODE 5 with pressurizer level < 90 inches. -- Verify non-borated water sources ≤ 88 gpm.	Once within 1 hour after achieving MODE 5 with pressurizer level < 90 inches <u>AND</u> 12 hours thereafter

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 Reactivity Balance

LCO 3.1.2 The core reactivity balance shall be within ± 1% $\Delta k/k$ of predicted values.

APPLICABILITY: MODE 1.

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 Surveillance Requirements.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.2.1	------------------NOTE------------------ The predicted reactivity values may be adjusted (normalized) to correspond to the measured core reactivity prior to exceeding a fuel burnup of 60 effective full power days after each fuel loading. -- Verify overall core reactivity balance is within ± 1% $\Delta k/k$ of predicted values.	Prior to entering MODE 1 after fuel loading AND -----NOTE ---- Only required after 60 effective full power days ------------- 31 effective full power days

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Moderator Temperature Coefficient (MTC)

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

APPLICABILITY: MODES 1 and 2.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.3.1 Verify MTC is within the upper limit.	Prior to entering MODE 1 after each fuel loading

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.3.2	-------------------NOTE------------------- If the MTC is more negative than the COLR limit when extrapolated to the end of cycle, SR 3.1.3.2 may be repeated. Shutdown must occur prior to exceeding the minimum allowable boron concentration at which MTC is projected to exceed the lower limit. --	
	Verify MTC is within the lower limit specified in the COLR.	Each fuel cycle within 7 effective full power days (EFPD) of initially reaching an equilibrium condition with THERMAL POWER ≥ 90% RTP AND Each fuel cycle within 7 EFPD of reaching 2/3 of expected core burnup

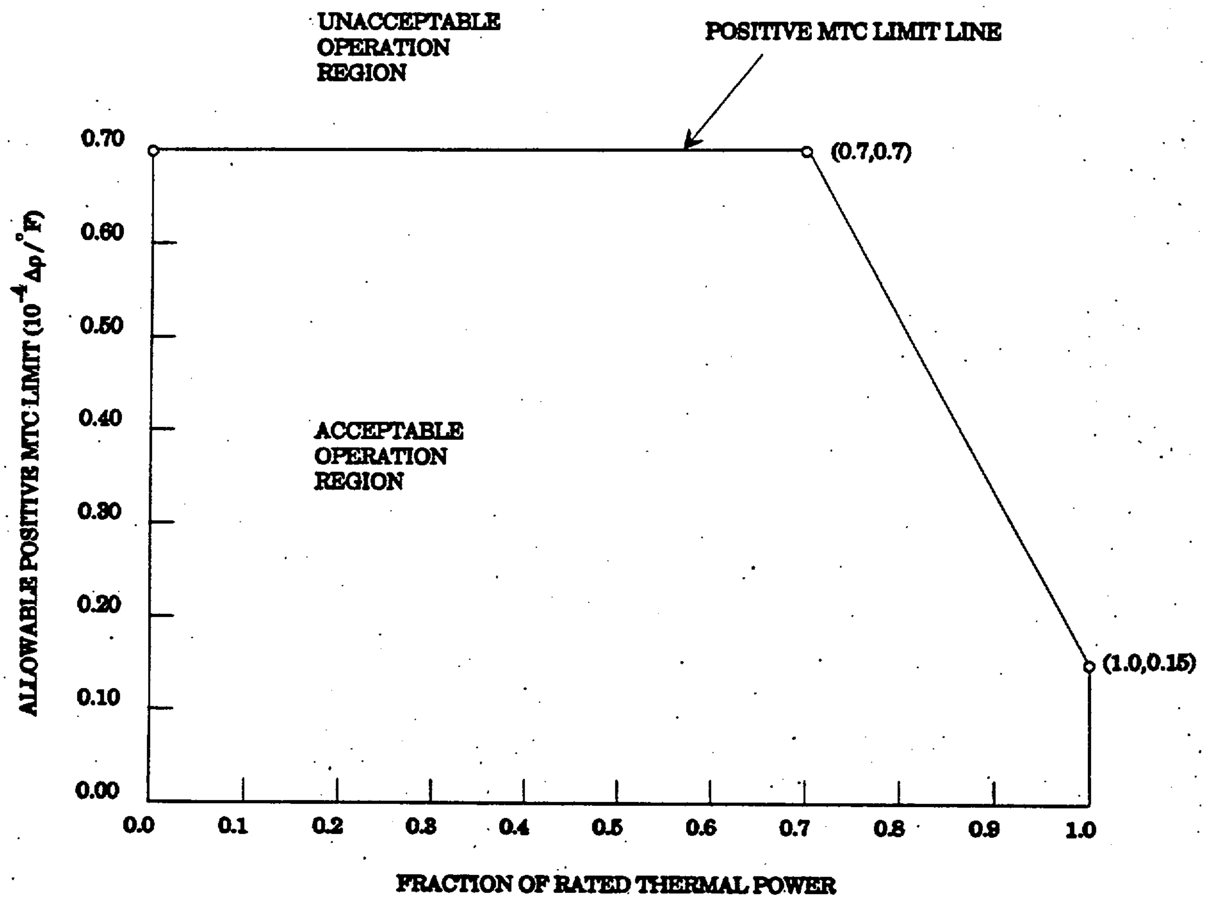

Figure 3.1.3-1 (page 1 of 1)
Allowable Positive MTC Limit

3.1 REACTIVITY CONTROL SYSTEMS

3.1.4 Control Element Assembly (CEA) Alignment

LCO 3.1.4 All CEAs shall be OPERABLE and aligned to within 7.5 inches (indicated position) of their respective group, and the CEA motion inhibit and the CEA deviation circuit shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more CEAs trippable and misaligned from its group by > 7.5 inches and ≤ 15 inches.	A.1 Restore CEA alignment.	1 hour
B. One CEA trippable and misaligned from its group by > 15 inches.	B.1 Restore CEA alignment.	In accordance with the COLR
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Reduce THERMAL POWER to ≤ 70% RTP.	1 hour
	<u>AND</u>	
	C.2 Restore CEA alignment.	2 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. CEA motion inhibit inoperable.	D.1 Perform SR 3.1.4.1.	1 hour AND Every 4 hours thereafter
	AND	
	D.2.1 Restore CEA motion inhibit to OPERABLE status. OR	6 hours
	D.2.2 --------NOTE------- Performance of Required Action D.2.2 is allowed only when not in conflict with Required Action A.1, B.1, C.2, or E.1. ------------------- Fully withdraw all CEAs in groups 3 and 4 and withdraw all CEAs in group 5 to < 5% insertion.	6 hours
E. CEA deviation circuit inoperable.	E.1 Perform SR 3.1.4.1.	1 hour AND Every 4 hours thereafter

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required Action and associated Completion Time of Condition C, D, or E not met. OR One or more CEAs untrippable. OR Two or more CEAs misaligned by > 15 inches.	F.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.4.1	Verify the indicated position of each CEA to be within 7.5 inches of all other CEAs in its group.	Within 1 hour following any CEA movement of > 7.5 inches AND 12 hours
SR 3.1.4.2	Verify the CEA motion inhibit is OPERABLE.	31 days

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.1.4.3	Verify the CEA deviation circuit is OPERABLE.	31 days
SR 3.1.4.4	Verify CEA freedom of movement (trippability) by moving each individual CEA that is not fully inserted into the reactor core 7.5 inches in either direction.	92 days
SR 3.1.4.5	Perform a CHANNEL FUNCTIONAL TEST of the reed switch position transmitter channel.	24 months
SR 3.1.4.6	Verify each CEA drop time is ≤ 3.1 seconds.	Prior to reactor criticality, after each removal of the reactor head

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Shutdown Control Element Assembly (CEA) Insertion Limits

LCO 3.1.5 All shutdown CEAs shall be withdrawn to ≥ 129 inches.

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

---------------------------- NOTE ----------------------------
This Limiting Condition of Operation is not applicable while performing SR 3.1.4.4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One shutdown CEA withdrawn ≥ 121.5 inches and < 129 inches.	A.1 Verify the accumulated times the shutdown CEAs have been withdrawn ≥ 121.5 inches and < 129 inches.	Once within 4 hours <u>AND</u> 24 hours thereafter

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One shutdown CEA withdrawn ≥ 121.5 inches and < 129 inches for > 7 days per occurrence or > 14 days per 365 days. <u>OR</u> One shutdown CEA withdrawn < 121.5 inches. <u>OR</u> Two or more shutdown CEAs not within limit.	B.1 Restore shutdown CEA(s) to within limit.	2 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.5.1 Verify each shutdown CEA is withdrawn ≥ 129 inches.	12 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Regulating Control Element Assembly (CEA) Insertion Limits

LCO 3.1.6 The power dependent insertion limit alarm circuit shall be OPERABLE, and the regulating CEA groups shall be limited to the withdrawal sequence and to the insertion limits specified in the COLR.

APPLICABILITY: MODES 1 and 2.

------------------------------NOTE------------------------------
This Limiting Condition of Operation is not applicable while performing SR 3.1.4.4.

ACTIONS

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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.	B.1 Verify short-term steady state insertion limits are not exceeded. __OR__ B.2 Restrict increases in THERMAL POWER to ≤ 5% RTP per hour.	15 minutes 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.	C.1 Restore regulating CEA groups to within limits.	2 hours
D. Power dependent insertion limit alarm circuit inoperable.	D.1 Perform SR 3.1.6.1.	1 hour __AND__ Once per 4 hours thereafter
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.6.1	Verify each regulating CEA group position is within its insertion limits.	12 hours
SR 3.1.6.2	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 3.1.6.3	Verify power dependent insertion limit alarm circuit is OPERABLE.	31 days

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Special Test Exception (STE)-SHUTDOWN MARGIN (SDM)

LCO 3.1.7 The SDM requirements of LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," the shutdown control element assembly (CEA) insertion limits of LCO 3.1.5, "Shutdown Control Element Assembly (CEA) Insertion Limits," and the regulating CEA insertion limits of LCO 3.1.6, "Regulating Control Element Assembly (CEA) Insertion Limits," may be suspended for measurement of CEA worth, provided shutdown reactivity equivalent to at least the highest estimated CEA worth (of those CEAs actually withdrawn) is available for trip insertion.

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. Any CEA not fully inserted and less than the above shutdown reactivity equivalent available for trip insertion. OR	A.1 Initiate boration to restore required shutdown reactivity.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (Continued) All CEAs inserted and the reactor subcritical by less than the above shutdown reactivity equivalent.		

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.7.1	Verify that the position of each CEA not fully inserted is within the acceptance criteria for available negative reactivity addition.	2 hours
SR 3.1.7.2	Verify that each 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

3.1 REACTIVITY CONTROL SYSTEMS

3.1.8 Special Test Exception (STE)-MODES 1 and 2

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

LCO 3.1.3, "Moderator Temperature Coefficient (MTC);"
LCO 3.1.4, "Control Element Assembly (CEA) Alignment;"
LCO 3.1.5, "Shutdown Control Element Assembly (CEA) Insertion Limits;"
LCO 3.1.6, "Regulating Control Element Assembly (CEA) Insertion Limits;"
LCO 3.2.2, "Total Planar Radial Peaking Factor (F^T_{xy});"
LCO 3.2.3, "Total Integrated Radial Peaking Factor (F^T_r);" and
LCO 3.2.4, "AZIMUTHAL POWER TILT (T_q)"

may be suspended, provided THERMAL POWER is restricted to the test power plateau, which shall not exceed 85% RTP.

APPLICABILITY: MODES 1 and 2 during PHYSICS TESTS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Test power plateau exceeded.	A.1 Reduce THERMAL POWER to less than or equal to test power plateau.	15 minutes

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.8.1	Verify THERMAL POWER is equal to or less than the test power plateau.	1 hour

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.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LHR, as determined by the Incore Detector Monitoring System, exceeds the limits specified in the COLR, as indicated by four or more coincident incore channels. __OR__ LHR, as determined by the Excore Detector Monitoring System, exceeds the limits as indicated by the ASI outside the power dependent control limits specified in the COLR.	A.1 Restore LHR to within limits.	1 hour

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

-----------------------------------NOTE-----------------------------------
Either the Excore Detector Monitoring System or the Incore Detector Monitoring System shall be used to determine LHR.

SURVEILLANCE		FREQUENCY
SR 3.2.1.1	------------------NOTE------------------ Only applicable when the Excore Detector Monitoring System is being used to determine LHR. --- Verify the value of F_{xy}^{T}.	Each 72 hours of accumulated operation in MODE 1
SR 3.2.1.2	------------------NOTE------------------ Only applicable when the Excore Detector Monitoring System is being used to determine LHR. --- Verify ASI alarm setpoints are within the limits specified in the COLR.	31 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.2.1.3	------------------ NOTES ------------------ 1. Only applicable when the Incore Detector Monitoring System is being used to determine LHR. 2. Not required to be performed below 20% RTP. --- Verify incore detector local power density alarms satisfy the requirements of the core power distribution map, which shall be updated at least once per 31 days of accumulated operation in MODE 1.	31 days
SR 3.2.1.4	------------------ NOTES ------------------ 1. Only applicable when the Incore Detector Monitoring System is being used to determine LHR. 2. Not required to be performed below 20% RTP. --- Verify incore detector local power density alarm setpoints are less than or equal to the limits specified in the COLR.	31 days

3.2 POWER DISTRIBUTION LIMITS

3.2.2 Total Planar Radial Peaking Factor (F^T_{xy})

LCO 3.2.2 The calculated value of F^T_{xy} shall not exceed the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. F^T_{xy} not within limits.	A.1 Restore F^T_{xy} to within limits.	6 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.2.1	-------------------NOTE------------------- F^T_{xy} shall be determined by using the incore detectors to obtain a power distribution map with all full length control element assemblies at or above the long-term steady state insertion limit, as specified in the COLR. This determination shall be limited to core planes between 15% and 85% of full core height inclusive and shall exclude regions influenced by grid effects. --	
	Verify the value of F^T_{xy}.	Once prior to operation above 70% RTP after each fuel loading AND Each 31 days of accumulated operation in MODE 1

3.2 POWER DISTRIBUTION LIMITS

3.2.3 Total Integrated Radial Peaking Factor (F_r^T)

LCO 3.2.3 The calculated value of F_r^T shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. F_r^T not within limit.	A.1 Restore F_r^T to within limits.	6 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.3.1	-------------------NOTE------------------- F_r^T shall be determined by using the incore detectors to obtain a power distribution map with all full length control element assemblies at or above the long-term steady state insertion limit as specified in the COLR. --	
	Verify the value of F_r^T.	Prior to operation > 70% RTP after each fuel loading **AND** Each 31 days of accumulated operation in MODE 1

3.2 POWER DISTRIBUTION LIMITS

3.2.4 AZIMUTHAL POWER TILT (T_q)

LCO 3.2.4 T_q shall be ≤ 0.03.

APPLICABILITY: MODE 1 with THERMAL POWER > 50% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Indicated $T_q > 0.03$ and ≤ 0.10.	A.1 Restore T_q to ≤ 0.03. OR A.2 Verify F^T_{xy} and F^T_r are within the limits of LCO 3.2.2, "Total Planar Radial Peaking Factor (F^T_{xy})," and LCO 3.2.3, "Total Integrated Radial Peaking Factor (F^T_r)," respectively.	4 hours 4 hours AND Once per 8 hours thereafter
B. Indicated $T_q > 0.10$.	B.1 Restore T_q to ≤ 0.10.	2 hours
C. Required Action and associated Completion Time not met.	C.1 Reduce THERMAL POWER to $\leq$ 50% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.4.1	Verify T_q is within limits.	12 hours

3.2 POWER DISTRIBUTION LIMITS

3.2.5 AXIAL SHAPE INDEX (ASI)

LCO 3.2.5 The ASI shall be maintained within the limits specified in the COLR.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. 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	Verify ASI is within limits specified in the COLR.	12 hours

3.3 INSTRUMENTATION

3.3.1 Reactor Protective System (RPS) Instrumentation-Operating

LCO 3.3.1 Four RPS bistable trip units, associated measurement channels, and applicable automatic bypass removal features for each Function in Table 3.3.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1-1.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more Functions with one RPS bistable trip unit or associated measurement channel inoperable except for Condition C (excore channel not calibrated with incore detectors).	A.1	Place affected bistable trip unit in bypass or trip.	1 hour
	<u>AND</u>		
	A.2.1	Restore affected bistable trip unit and associated measurement channel to OPERABLE status.	48 hours
		<u>OR</u>	
	A.2.2	Place affected bistable trip unit in trip.	48 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more Functions with two RPS bistable trip units or associated measurement channels inoperable except for Condition C (excore channel not calibrated with incore detectors).	------------ NOTE ------------ LCO 3.0.4 is not applicable. ------------------------------	
	B.1 Place one affected bistable trip unit in bypass and place the other affected bistable trip unit in trip.	1 hour
	<u>AND</u>	
	B.2 Restore one affected bistable trip unit and associated measurement channel to OPERABLE status.	48 hours
C. One or more Functions with one or more power range excore channels not calibrated with the incore detectors.	C.1 Perform SR 3.3.1.3.	24 hours
	<u>OR</u>	
	C.2 Restrict THERMAL POWER to < 90% RTP.	24 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. One or more Functions with one automatic bypass removal feature inoperable.	D.1	Disable bypass channel.	1 hour
	<u>OR</u>		
	D.2.1	Place affected bistable trip units in bypass or trip.	1 hour
	<u>AND</u>		
	D.2.2.1	Restore automatic bypass removal feature and affected bistable trip unit to OPERABLE status.	48 hours
	<u>OR</u>		
	D.2.2.2	Place affected bistable trip unit in trip.	48 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One or more Functions with two automatic bypass removal feature channels inoperable.	----------- NOTE ------------ LCO 3.0.4 is not applicable. ----------------------------	
	E.1 Disable bypass channels.	1 hour
	<u>OR</u>	
	E.2.1 Place one affected bistable trip unit in bypass and place the other in trip for each affected trip Function.	1 hour
	<u>AND</u>	
	E.2.2 Restore one automatic bypass removal feature and the affected bistable trip unit to OPERABLE status for each affected trip Function.	48 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required Action and associated Completion Time not met for Axial Power Distribution-High and Loss of Load Trip Functions.	F.1 Reduce THERMAL POWER to < 15% RTP.	6 hours
G. Required Action and associated Completion Time not met except for Axial Power Distribution-High and Loss of Load Trip Functions.	G.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

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

SURVEILLANCE		FREQUENCY
SR 3.3.1.1	Perform a CHANNEL CHECK of each RPS instrument channel except Loss of Load.	12 hours

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.2	------------------ NOTES ------------------ 1. Not required to be performed until 12 hours after THERMAL POWER is ≥ 15% 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 a calibration (heat balance only) and adjust the excore power range and ΔT power channels to agree with calorimetric calculation if the absolute difference is ≥ 1.5%.	24 hours
SR 3.3.1.3	------------------NOTE------------------ Not required to be performed until 12 hours after THERMAL POWER is ≥ 20% RTP and required to be performed prior to operation above 90% RTP. --- Calibrate the power range excore channels using the incore detectors.	31 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.4	Perform a CHANNEL FUNCTIONAL TEST of each RPS instrument channel except Loss of Load and Rate of Change of Power-High.	92 days
SR 3.3.1.5	-------------------NOTE------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. -- Perform a CHANNEL CALIBRATION on excore power range channels.	92 days
SR 3.3.1.6	Perform a CHANNEL FUNCTIONAL TEST of each Rate of Change of Power-High and Loss of Load instrument channel.	Once within 7 days prior to each reactor startup
SR 3.3.1.7	Perform a CHANNEL FUNCTIONAL TEST on each automatic bypass removal feature.	24 months
SR 3.3.1.8	-------------------NOTE------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. -- Perform a CHANNEL CALIBRATION of each instrument channel, including applicable automatic bypass removal functions.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.9	------------------NOTE------------------ Neutron detectors are excluded from RPS RESPONSE TIME testing. -- Verify RPS RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS

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

FUNCTION	MODES	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Power Level-High	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 3.3.1.8 SR 3.3.1.9	≤ 10% RTP above current THERMAL POWER but not < 30% RTP nor > 107% RTP
2. Rate of Change of Power-High[a]	1, 2	SR 3.3.1.1[f] SR 3.3.1.6 SR 3.3.1.7 SR 3.3.1.8	≤ 2.6 dpm
3. Reactor Coolant Flow-Low[b]	1, 2	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.7 SR 3.3.1.8 SR 3.3.1.9	≥ 92% of Design Flow
4. Pressurizer Pressure-High	1, 2	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.8 SR 3.3.1.9	≤ 2400 psia
5. Containment Pressure-High	1, 2	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.8 SR 3.3.1.9	≤ 4.0 psig

Table 3.3.1-1 (page 2 of 3)
Reactor Protective System Instrumentation

FUNCTION	MODES	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
6. Steam Generator Pressure-Low[c]	1, 2	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.7 SR 3.3.1.8 SR 3.3.1.9	≥ 685 psia
7. Steam Generator Level-Low	1, 2	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.8 SR 3.3.1.9	≥ 10 inches below top of feed ring
8. Axial Power Distribution-High[d]	1[e]	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 3.3.1.8 SR 3.3.1.9	In accordance with the COLR
9a. Thermal Margin/Low Pressure (TM/LP)[b]	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 3.3.1.8 SR 3.3.1.9	In accordance with the COLR

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

FUNCTION	MODES	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
9b. Asymmetric Steam Generator Transient (ASGT)[b]	1, 2	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.7 SR 3.3.1.8 SR 3.3.1.9	≤ 135 psid
10. Loss of Load[d]	1[e]	SR 3.3.1.6 SR 3.3.1.7	NA

(a) Bistable trip unit may be bypassed when NUCLEAR INSTRUMENT POWER is < 1E-4% RTP or > 12% RTP. Bypass shall be automatically removed when NUCLEAR INSTRUMENT POWER is ≥ 1E-4% RTP and < 12% RTP.

(b) Bistable trip unit may be bypassed when NUCLEAR INSTRUMENT POWER is < 1E-4%. Bypass shall be automatically removed when NUCLEAR INSTRUMENT POWER is ≥ 1E-4% RTP. During testing pursuant to LCO 3.4.16, trips may be bypassed below 5% RTP.

(c) Bistable trip unit may be bypassed when steam generator pressure is < 785 psig. Bypass shall be automatically removed when steam generator pressure is ≥ 785 psig.

(d) Bistable trip unit may be bypassed when NUCLEAR INSTRUMENT POWER is < 15% RTP. Bypass shall be automatically removed when NUCLEAR INSTRUMENT POWER is ≥ 15% RTP.

(e) Trip is only applicable in MODE 1, NUCLEAR INSTRUMENT POWER ≥ 15% RTP.

(f) CHANNEL CHECK only applies to Wide Range Logarithmic Neutron Flux Monitor.

3.3 INSTRUMENTATION

3.3.2 Reactor Protective System (RPS) Instrumentation-Shutdown

LCO 3.3.2 Four Rate of Change of Power-High RPS bistable trip units, associated measurement channels, and automatic bypass removal features shall be OPERABLE.

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

---------------------------- NOTE ----------------------------
Bistable trip units may be bypassed when NUCLEAR INSTRUMENT POWER is < 1E-4% RTP. Bypass shall be automatically removed when NUCLEAR INSTRUMENT POWER is ≥ 1E-4% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Rate of Change of Power-High bistable trip unit or associated measurement channel inoperable.	A.1 Place affected bistable trip unit in bypass or trip.	1 hour
	AND	
	A.2.1 Restore affected bistable trip unit and associated measurement channel to OPERABLE status.	48 hours
	OR	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (Continued)	A.2.2 Place affected bistable trip unit in trip.	48 hours
B. Two Rate of Change of Power-High bistable trip units or associated measurement channels inoperable.	----------- NOTE ------------ LCO 3.0.4 is not applicable. ----------------------------	
	B.1 Place one bistable trip unit in bypass and place the other bistable trip unit in trip.	1 hour
	<u>AND</u>	
	B.2 Restore one bistable trip unit to OPERABLE status.	48 hours
C. One automatic bypass removal feature inoperable.	C.1 Disable bypass channel.	1 hour
	<u>OR</u>	
	C.2.1 Place affected bistable trip unit in bypass or trip.	1 hour
	<u>AND</u>	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (Continued)	C.2.2.1 Restore automatic bypass removal feature and affected bistable trip unit to OPERABLE status. OR C.2.2.2 Place affected bistable trip unit in trip.	48 hours 48 hours
D. Two automatic bypass removal features inoperable.	----------- NOTE ------------ LCO 3.0.4 is not applicable. ----------------------------- D.1 Disable bypass channels. OR D.2.1 Place one affected bistable trip unit in bypass and place the other in trip. AND D.2.2 Restore one automatic bypass removal feature and the affected bistable trip unit to OPERABLE status.	 1 hour 1 hour 48 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time not met.	E.1 Open all reactor trip circuit breakers.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.2.1	Perform a CHANNEL CHECK of each Wide Range Logarithmic Neutron Flux Monitor.	12 hours
SR 3.3.2.2	Perform a CHANNEL FUNCTIONAL TEST on the Rate of Change of Power trip instrument channel. The allowable value shall be $\leq$ 2.6 dpm.	Once within 7 days prior to each reactor startup
SR 3.3.2.3	Perform a CHANNEL FUNCTIONAL TEST on each automatic bypass removal feature.	24 months
SR 3.3.2.4	-------------------NOTE------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. -- Perform a CHANNEL CALIBRATION, including automatic bypass removal features.	24 months

3.3 INSTRUMENTATION

3.3.3 Reactor Protective System (RPS) Logic and Trip Initiation

LCO 3.3.3 Six channels of RPS Matrix Logic, four channels of RPS Trip Path 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. One Matrix Logic channel inoperable.	A.1 Restore Matrix Logic channel to OPERABLE status.	48 hours
B. One channel of Manual Trip, RTCBs, or Trip Path Logic inoperable in MODE 1 or 2.	B.1 Open the affected RTCBs.	1 hour
C. One channel of Manual Trip, RTCBs, or Trip Path Logic inoperable in MODE 3, 4, or 5.	C.1 Open all RTCBs.	48 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two channels of RTCBs or Trip Path Logic affecting the same trip leg inoperable.	D.1 Open the affected RTCBs.	Immediately
E. Required Action and associated Completion Time of Condition A, B, or D not met. OR One or more Functions with two or more Manual Trip, Matrix Logic, Trip Path Logic, or RTCB channels 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 3.3.3.1	Perform a CHANNEL FUNCTIONAL TEST on each RTCB channel.	31 days
SR 3.3.3.2	Perform a CHANNEL FUNCTIONAL TEST on each RPS Logic channel.	92 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.3.3	Perform a CHANNEL FUNCTIONAL TEST on each RPS Manual Trip channel.	Once within 7 days prior to each reactor startup

3.3 INSTRUMENTATION

3.3.4 Engineered Safety Features Actuation System (ESFAS) Instrumentation

LCO 3.3.4 Four ESFAS sensor modules, associated measurement channels, and applicable automatic block removal features for each Function in Table 3.3.4-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one ESFAS sensor module or associated measurement channel inoperable.	A.1 Place affected sensor module in bypass or trip.	1 hour
	AND	
	A.2.1 Restore affected sensor module and associated measurement channel to OPERABLE status.	48 hours
	OR	
	A.2.2 Place affected sensor module in trip.	48 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more Functions with two ESFAS sensor modules or associated measurement channels inoperable.	----------- NOTE ------------ LCO 3.0.4 is not applicable. -----------------------------	
	B.1 Place one sensor module in bypass and place the other sensor module in trip.	1 hour
	AND	
	B.2 Restore one sensor module and associated measurement channel to OPERABLE status.	48 hours
C. One or more Functions with the automatic block removal feature of one sensor block module inoperable.	C.1 Disable affected sensor block module.	1 hour
	OR	
	C.2 Place affected sensor block module in bypass.	1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more Functions with the automatic block removal feature of two sensor block modules inoperable.	------------NOTE------------ LCO 3.0.4 is not applicable. ----------------------------	
	D.1 Disable affected sensor block modules.	1 hour
	<u>OR</u>	
	D.2.1 Place one affected sensor block module in bypass and disable the other for each affected ESFAS Function.	1 hour
	<u>AND</u>	
	D.2.2 Restore one automatic block removal feature and the associated sensor block module to OPERABLE status for each affected ESFAS Function.	48 hours
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	E.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.4.1	Perform a CHANNEL CHECK of each ESFAS sensor channel.	12 hours
SR 3.3.4.2	Perform a CHANNEL FUNCTIONAL TEST of each ESFAS sensor channel.	92 days
SR 3.3.4.3	Perform a CHANNEL FUNCTIONAL TEST on each automatic block removal feature.	24 months
SR 3.3.4.4	Perform a CHANNEL CALIBRATION of each ESFAS sensor channel, including automatic block removal feature.	24 months
SR 3.3.4.5	Verify ESF RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS

Table 3.3.4-1 (page 1 of 3)
Engineered Safety Features Actuation System Instrumentation

FUNCTION	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Safety Injection Actuation Signal		
a. Containment Pressure-High	SR 3.3.4.1 SR 3.3.4.2 SR 3.3.4.4 SR 3.3.4.5	≤ 4.75 psig
b. Pressurizer Pressure-Low[(a)]	SR 3.3.4.1 SR 3.3.4.2 SR 3.3.4.3 SR 3.3.4.4 SR 3.3.4.5	≥ 1725 psia
2. Containment Spray Actuation Signal[(b)]		
a. Containment Pressure-High	SR 3.3.4.1 SR 3.3.4.2 SR 3.3.4.4 SR 3.3.4.5	≤ 4.75 psig
3. Containment Isolation Signal		
a. Containment Pressure-High	SR 3.3.4.1 SR 3.3.4.2 SR 3.3.4.4 SR 3.3.4.5	≤ 4.75 psig

Table 3.3.4-1 (page 2 of 3)
Engineered Safety Features Actuation System Instrumentation

FUNCTION	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
4. Steam Generator Isolation Signal[c]		
a. Steam Generator Pressure-Low[d]	SR 3.3.4.1 SR 3.3.4.2 SR 3.3.4.3 SR 3.3.4.4 SR 3.3.4.5	≥ 685 psia
5. Containment Sump Recirculation		
a. Refueling Water Tank Level-Low	SR 3.3.4.2 SR 3.3.4.4 SR 3.3.4.5	≥ 24 inches above tank bottom
6. Auxiliary Feedwater Actuation System		
a. Steam Generator 1 Level-Low	SR 3.3.4.1 SR 3.3.4.2 SR 3.3.4.4 SR 3.3.4.5	≤ -149 inches and ≥ -194 inches
b. Steam Generator 2 Level-Low	SR 3.3.4.1 SR 3.3.4.2 SR 3.3.4.4 SR 3.3.4.5	≤ -149 inches and ≥ -194 inches
c. Steam Generator Pressure Difference-High (1 > 2) or (2 > 1)	SR 3.3.4.1 SR 3.3.4.2 SR 3.3.4.4 SR 3.3.4.5	≤ 135.0 psid for Unit 1 ≤ 130.0 psid for Unit 2

Table 3.3.4-1 (page 3 of 3)
Engineered Safety Features Actuation System Instrumentation

(a) Pressurizer Pressure-Low may be manually bypassed when pressurizer pressure is < 1800 psia. The bypass shall be automatically removed whenever pressurizer pressure is ≥ 1800 psia.

(b) Safety Injection Actuation Signal is required to start the containment spray pumps.

(c) Only the Steam Generator Isolation Signal function and the Steam Generator Pressure-Low signal are not required to be OPERABLE when all associated valves isolated by the Steam Generator Isolation Signal function are closed and de-activated.

(d) Steam Generator Pressure-Low may be manually bypassed when steam generator pressure is < 785 psia. The bypass shall be automatically removed whenever steam generator pressure is ≥ 785 psia.

3.3 INSTRUMENTATION

3.3.5 Engineered Safety Features Actuation System (ESFAS) Logic and Manual Actuation

LCO 3.3.5 Two ESFAS Manual Actuation or Start channels and two ESFAS Actuation Logic channels shall be OPERABLE for each ESFAS Function specified in Table 3.3.5-1.

APPLICABILITY: According to Table 3.3.5-1.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One Auxiliary Feedwater Actuation System Manual Start channel or Actuation Logic channel inoperable.	A.1	Restore affected Auxiliary Feedwater Actuation System Manual Start channel and Actuation Logic channel to OPERABLE status.	48 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 4.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One or more Functions with one Manual Actuation channel or Actuation Logic channel inoperable except Auxiliary Feedwater Actuation System.	C.1	Restore affected Manual Actuation channel and Actuation Logic channel to OPERABLE status.	48 hours
D. Required Action and associated Completion Time of Condition C not met for one Manual Actuation channel.	D.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	D.2	Be in MODE 5.	36 hours
E. Required Action and associated Completion Time of Condition C not met for one Actuation Logic channel.	E.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	E.2	Be in Mode 4.	12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.5.1	------------------ NOTES ------------------ 1. Testing of Actuation Logic shall include verification of the proper relay driver output signal. 2. Relays associated with plant equipment that cannot be operated during plant operation are only required to be tested once per 24 months. -- Perform a CHANNEL FUNCTIONAL TEST on each ESFAS Actuation Logic channel.	92 days
SR 3.3.5.2	Perform a CHANNEL FUNCTIONAL TEST on each ESFAS Manual Actuation channel.	24 months

Table 3.3.5-1 (page 1 of 2)
Engineered Safety Features Actuation System
Actuation Logic and Manual Actuation Applicability

FUNCTION	APPLICABLE MODES
1. Safety Injection Actuation Signal[a]	
a. Manual Actuation	1,2,3,4
b. Actuation Logic	1,2,3
2. Containment Spray Actuation Signal	
a. Manual Actuation	1,2,3,4
b. Actuation Logic	1,2,3
3. Containment Isolation Signal	
a. Manual Actuation	1,2,3,4
b. Actuation Logic	1,2,3
4. Steam Generator Isolation Signal	
a. Manual Actuation (Main Steam Isolation Valve Handswitches and Feedwater Header Isolation Handswitches)	1,2,3,4
b. Actuation Logic	1,2,3
5. Containment Sump Recirculation Actuation Signal	
a. Manual Actuation	1,2,3,4
b. Actuation Logic	1,2,3
6. Auxiliary Feedwater Actuation System Signal	
a. Manual Start	1,2,3
b. Actuation Logic	1,2,3

Table 3.3.5-1 (page 2 of 2)
Engineered Safety Features Actuation System
Actuation Logic and Manual Actuation Applicability

(a) High Pressure Safety Injection pumps are only required to start automatically on a Safety Injection Actuation Signal when Reactor Coolant System temperature is ≥ 385°F for Unit 1, ≥ 325°F for Unit 2.

3.3 INSTRUMENTATION

3.3.6 Diesel Generator (DG)-Loss of Voltage Start (LOVS)

LCO 3.3.6 Four sensor modules and measurement channels per DG for the Loss of Voltage Function, four sensor modules and measurement channels per DG for the Transient Degraded Voltage Function, and four sensor modules and measurement channels per DG for the Steady State Degraded Voltage Function shall be OPERABLE.

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

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one sensor module or associated measurement channel per DG inoperable.	A.1 Place sensor module in bypass or trip.	1 hour
	AND	
	A.2.1 Restore sensor module and associated measurement channel to OPERABLE status.	48 hours
	OR	
	A.2.2 Place the sensor module in trip.	48 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One or more Functions with two sensor modules or associated measurement channels per DG inoperable.	B.1	Enter applicable Conditions and Required Actions for the associated DG made inoperable by DG-LOVS instrumentation.	1 hour
	<u>OR</u>		
	B.2.1	--------NOTE------- LCO 3.0.4 is not applicable. -------------------- Place one sensor module in bypass and the other sensor module in trip.	1 hour
	<u>AND</u>		
	B.2.2	Restore one sensor module and associated measurement channel to OPERABLE status.	48 hours
C. One or more Functions with more than two sensor modules or associated measurement channels inoperable.	C.1	Restore at least two sensor modules and associated measurement channels to OPERABLE status.	1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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-LOVS instrumentation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.6.1	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.6.2	Perform CHANNEL CALIBRATION with setpoint Allowable Values as follows: 1. Transient Degraded Voltage Function ≥ 3630 V and ≤ 3790 V; Time Delay: ≥ 7.6 seconds and ≤ 8.4 seconds; 2. Steady State Degraded Voltage Function ≥ 3820 V and ≤ 3980 V Time Delay: ≥ 97.5 seconds and ≤ 104.5 seconds; and 3. Loss of voltage Function ≥ 2345 V and ≤ 2555 V Time Delay: ≥ 1.8 seconds and ≤ 2.2 seconds at 2450 V.	24 months

3.3 INSTRUMENTATION

3.3.7 Containment Radiation Signal (CRS)

LCO 3.3.7 Four CRS containment radiation monitor sensor modules, associated measurement channels, one CRS Actuation Logic channel, and one Manual Actuation channel shall be OPERABLE.

APPLICABILITY: During CORE ALTERATIONS, with containment purge valves open, During movement of irradiated fuel assemblies within containment with containment purge valves open.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One radiation monitor sensor module or associated measurement channel inoperable.	A.1 Place the affected sensor module in trip.	4 hours
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies within containment.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One required Manual Actuation channel or Actuation Logic channel inoperable. OR More than one radiation monitor sensor module or associated measurement channel inoperable. OR Required Action and associated Completion Time of Condition A not met.	B.1 Place and maintain containment purge and exhaust valves in closed position.	Immediately
	OR	
	B.2 Enter applicable Conditions and Required Actions for affected valves of LCO 3.9.3, "Containment Penetrations," made inoperable by isolation instrumentation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.7.1	Perform a CHANNEL CHECK on each containment radiation monitor sensor.	12 hours

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.7.2	-------------------NOTE------------------- Testing of Actuation Logic shall include verification of the proper relay driver output signal. -- Perform a CHANNEL FUNCTIONAL TEST on each CRS Actuation Logic channel.	92 days
SR 3.3.7.3	Perform a CHANNEL FUNCTIONAL TEST on each containment radiation monitor sensor. Verify CRS high radiation setpoint is less than or equal to the Allowable Value of 220 mR/hr.	92 days
SR 3.3.7.4	Perform a CHANNEL CALIBRATION on each containment radiation monitor instrument channel.	24 months
SR 3.3.7.5	Perform a CHANNEL FUNCTIONAL TEST on each CRS Manual Actuation channel.	24 months
SR 3.3.7.6	Verify CRS response time is within limits.	24 months on a STAGGERED TEST BASIS

3.3 INSTRUMENTATION

3.3.8 Control Room Recirculation Signal (CRRS)

LCO 3.3.8 One CRRS trip circuit and measurement channel shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. CRRS trip circuit or measurement channel inoperable in MODE 1, 2, 3, or 4.	A.1	Place one Control Room Emergency Ventilation System train in recirculation mode with the post-loss-of-coolant incident filter fan in service.	1 hour
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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. CRRS trip circuit or measurement channel inoperable during movement of irradiated fuel assemblies.	C.1 Place one Control Room Emergency Ventilation System train in recirculation mode with post-loss-of-coolant incident filter fan in service.	Immediately
	<u>OR</u>	
	C.2 Suspend movement of irradiated fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.8.1	Perform a CHANNEL CHECK on the control room radiation monitor channel.	12 hours
SR 3.3.8.2	Perform a CHANNEL FUNCTIONAL TEST on the CRRS radiation monitor trip circuit and measurement channel. Verify CRRS high radiation setpoint is less than or equal to the Allowable Value of 6E4 cpm above normal background.	92 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.8.3	Perform a CHANNEL CALIBRATION on the CRRS radiation monitor trip circuit and measurement channel.	24 months

3.3 INSTRUMENTATION

3.3.9 Chemical and Volume Control System (CVCS) Isolation Signal

LCO 3.3.9 Four channels of West Penetration Room/Letdown Heat Exchanger Room pressure sensor modules, associated measurement channels, and two Actuation Logic channels shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Actuation Logic channel inoperable.	A.1 Restore the Actuation Logic channel to OPERABLE status.	48 hours
B. One CVCS isolation sensor module or associated measurement channel inoperable.	B.1 Place the affected sensor module in bypass or trip.	1 hour
	<u>AND</u>	
	B.2.1 Restore the affected sensor module and measurement channel to OPERABLE status.	48 hours
	<u>OR</u>	
	B.2.2 Place the affected sensor module in trip.	48 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two CVCS isolation sensor modules or associated measurement channels inoperable.	----------- NOTE ------------ LCO 3.0.4 is not applicable. ----------------------------	
	C.1 Place one sensor module in bypass and place the other sensor module in trip.	1 hour
	AND	
	C.2 Restore one sensor module and associated measurement channel to OPERABLE status.	48 hours
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3.	6 hours
	AND	
	D.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.9.1	Perform a CHANNEL CHECK of each sensor channel.	12 hours

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.9.2	------------------NOTES------------------ 1. Testing of Actuation Logic shall include the verification of the proper relay driver output signal. 2. Relays associated with plant equipment that cannot be operated during plant operation are only required to be tested once per 24 months. --- Perform a CHANNEL FUNCTIONAL TEST on each CVCS sensor channel with setpoints in accordance with the following Allowable Values: West Penetration Room Pressure-High ≤ 0.5 psig Letdown Heat Exchanger Room Pressure-High ≤ 0.5 psig	92 days
SR 3.3.9.3	Perform a CHANNEL CALIBRATION on each CVCS sensor channel.	24 months
SR 3.3.9.4	Verify CVCS Isolation Signal response time is within limits.	24 months on a STAGGERED TEST BASIS

3.3 INSTRUMENTATION

3.3.10 Post-Accident Monitoring (PAM) Instrumentation

LCO 3.3.10 The PAM indication channels for each Function in Table 3.3.10-1 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 Functions with one required indication channel inoperable.	A.1 Restore required indication channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.7.	Immediately

ACTIONS (continued)

CONDITION		REQUIRED ACTION		COMPLETION TIME
C.	-------- NOTE -------- Not applicable to hydrogen monitor channels. --------------------- One or more Functions with two required indication channels inoperable.	C.1	Restore one indication channel to OPERABLE status.	7 days
D.	Two hydrogen monitor indication channels inoperable.	D.1	Restore one hydrogen monitor indication channel to OPERABLE status.	72 hours
E.	Required Action and associated Completion Time of Condition C or D not met.	E.1	Enter the Condition referenced in Table 3.3.10-1 for the channel.	Immediately
F.	As required by Required Action E.1 and referenced in Table 3.3.10-1.	F.1	Be in MODE 3.	6 hours
		AND		
		F.2	Be in MODE 4.	12 hours
G.	As required by Required Action E.1 and referenced in Table 3.3.10-1.	G.1	Initiate action in accordance with Specification 5.6.7.	Immediately

SURVEILLANCE REQUIREMENTS

-------------------------------------NOTE-------------------------------------
These Surveillance Requirements apply to each PAM instrumentation Function in Table 3.3.10-1.

SURVEILLANCE		FREQUENCY
SR 3.3.10.1	Perform CHANNEL CHECK for each required indication channel that is normally energized.	31 days
SR 3.3.10.2	Perform a CHANNEL CALIBRATION on Containment Hydrogen Analyzers.	46 days on a STAGGERED TEST BASIS
SR 3.3.10.3	-------------------NOTE------------------- Neutron detectors, Core Exit Thermocouples, and Reactor Vessel Level Monitoring System are excluded from CHANNEL CALIBRATION. -- Perform CHANNEL CALIBRATION on each indication channel except Containment Hydrogen Analyzers.	24 months

Table 3.3.10-1 (page 1 of 2)
Post-Accident Monitoring Instrumentation

	FUNCTION	REQUIRED INDICATION CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTION E.1
1.	Wide Range Logarithmic Neutron Flux	2	F
2.	Reactor Coolant Outlet Temperature	2	F
3.	Reactor Coolant Inlet Temperature	2	F
4.	RCS Subcooled Margin Monitor	1	N/A
5.	Reactor Vessel Water Level	2	G
6.	Containment Water Level (wide range)	2	F
7.	Containment Pressure	2	F
8.	Containment Isolation Valve Position	2 per penetration flow path[(a)(b)]	F
9.	Containment Area Radiation (high range)	2	G
10.	Containment Hydrogen Analyzers	2	F
11.	Pressurizer Pressure (wide range)	2	F

Table 3.3.10-1 (page 2 of 2)
Post-Accident Monitoring Instrumentation

FUNCTION	REQUIRED INDICATION CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTION E.1
12. Steam Generator Pressure	2 per steam generator	F
13. Pressurizer Level	2	F
14. Steam Generator Water Level (wide range)	2 per steam generator	F
15. Condensate Storage Tank Level	2	F
16. Core Exit Temperature-Quadrant 1	2[c]	F
17. Core Exit Temperature-Quadrant 2	2[c]	F
18. Core Exit Temperature-Quadrant 3	2[c]	F
19. Core Exit Temperature-Quadrant 4	2[c]	F
20. Pressurizer Pressure (low range)	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, check valve with flow through the valve secured, blind flange, or equivalent.

(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.

3.3 INSTRUMENTATION

3.3.11 Remote Shutdown Instrumentation

LCO 3.3.11 The Remote Shutdown Instrumentation Functions in Table 3.3.11-1 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. AND B.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.11.1	Perform CHANNEL CHECK for each required indication channel that is normally energized.	31 days
SR 3.3.11.2	-------------------NOTE------------------- Neutron detectors and Reactor Trip Breaker Indication are excluded from the CHANNEL CALIBRATION. -- Perform CHANNEL CALIBRATION for each required indication channel.	24 months

Table 3.3.11-1 (page 1 of 1)
Remote Shutdown System Instrumentation

FUNCTION/INDICATION	REQUIRED NUMBER OF CHANNELS
1. Reactivity Monitoring	
a. Wide Range Neutron Flux	1
b. Reactor Trip Breaker Indication	1 per trip breaker
2. Reactor Coolant System Pressure Monitoring	
a. Pressurizer Pressure	1
3. Monitoring Decay Heat Removal via Steam Generators	
a. Reactor Coolant Cold Leg Temperature	1 per loop
b. Steam Generator Pressure	1 per steam generator
c. Steam Generator Level (Wide Range)	1 per steam generator
4. Reactor Coolant System Inventory Monitoring	
a. Pressurizer Level	1

3.3 INSTRUMENTATION

3.3.12 Wide Range Logarithmic Neutron Flux Monitor Channels

LCO 3.3.12 Two channels of wide range logarithmic neutron flux monitoring instrumentation shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more required channels inoperable.	A.1	Suspend all operations involving positive reactivity additions.	Immediately
	AND		
	A.2	Perform SDM verification in accordance with SR 3.1.1.1.	4 hours AND Once per 12 hours thereafter

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.12.1	Perform CHANNEL CHECK.	12 hours

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.12.2	Perform CHANNEL FUNCTIONAL TEST.	Once within 7 days prior to each reactor startup
SR 3.3.12.3	-------------------NOTE------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. -- Perform CHANNEL CALIBRATION.	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

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

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

a. Pressurizer pressure ≥ 2200 psia;

b. RCS cold leg temperature (T_c) ≤ 548°F; and

c. RCS total flow rate ≥ 340,000 gpm.

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. RCS DNB parameter(s) not within limits.	A.1 Restore parameter(s) to within limit.	2 hours

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.1.1	Verify pressurizer pressure ≥ 2200 psia.	12 hours
SR 3.4.1.2	Verify RCS cold leg temperature ≤ 548°F.	12 hours
SR 3.4.1.3	Verify RCS total flow rate ≥ 340,000 gpm.	12 hours
SR 3.4.1.4	Verify measured RCS total flow rate is within limits.	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.2 RCS Minimum Temperature for Criticality

LCO 3.4.2 Each RCS loop average temperature (T_{avg}) shall be $\geq$ 515°F.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.2.1	Verify RCS T_{avg} in each loop ≥ 515°F.	Once within 30 minutes prior to reaching criticality AND -----NOTE ---- Only required to be performed when RCS T_{avg} is < 525°F ------------- 30 minutes thereafter

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 RCS Pressure and Temperature (P/T) Limits

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

---------------------------- NOTE ----------------------------
During hydrostatic testing above system design pressure, temperature changes shall be ≤ 5°F in any one 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 Limiting Condition for Operation 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	6 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (Continued)	B.2 Be in MODE 5 with RCS pressure < 300 psia.	36 hours
C. ----------NOTE-------- Required Action C.2 shall be completed whenever this Condition is entered. -------------------- Requirements of Limiting Condition for Operation not met any time in other than MODE 1, 2, 3, or 4.	C.1 Initiate action to restore parameter(s) to within limits.	Immediately
	AND	
	C.2 Determine RCS is acceptable for continued operation.	Prior to entering MODE 4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.3.1	------------------NOTE------------------ Only required to be performed during RCS heatup and cooldown operations and RCS inservice leak and hydrostatic testing. ---	
	Verify RCS pressure, RCS temperature, and RCS heatup and cooldown rates are within limits specified in Figures 3.4.3-1 and 3.4.3-2.	30 minutes

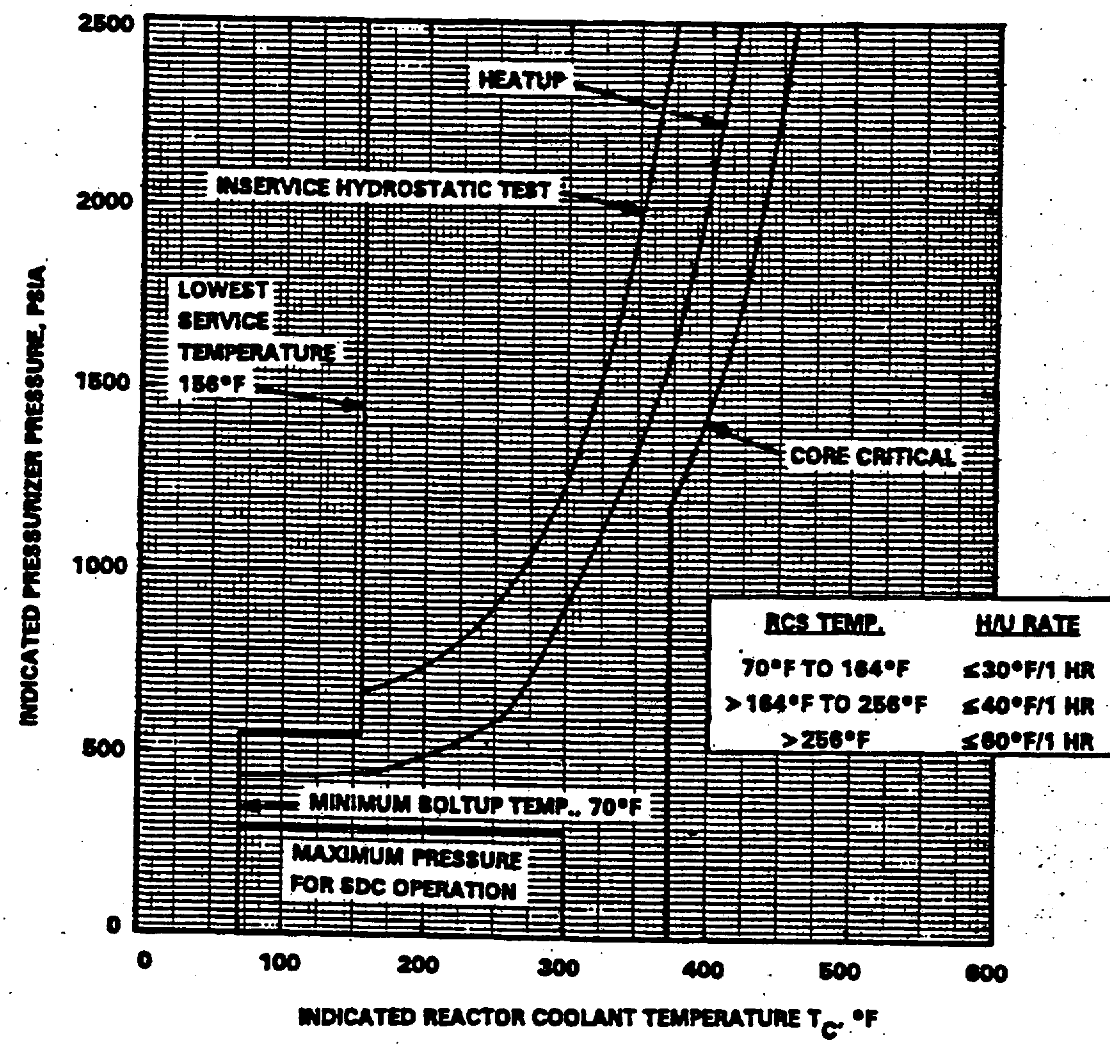

Figure 3.4.3-1
Calvert Cliffs Unit 1 Heatup Curve, for Fluence ≤ 2.61×10^{19} n/cm^2
Reactor Coolant System Pressure Temperature Limits

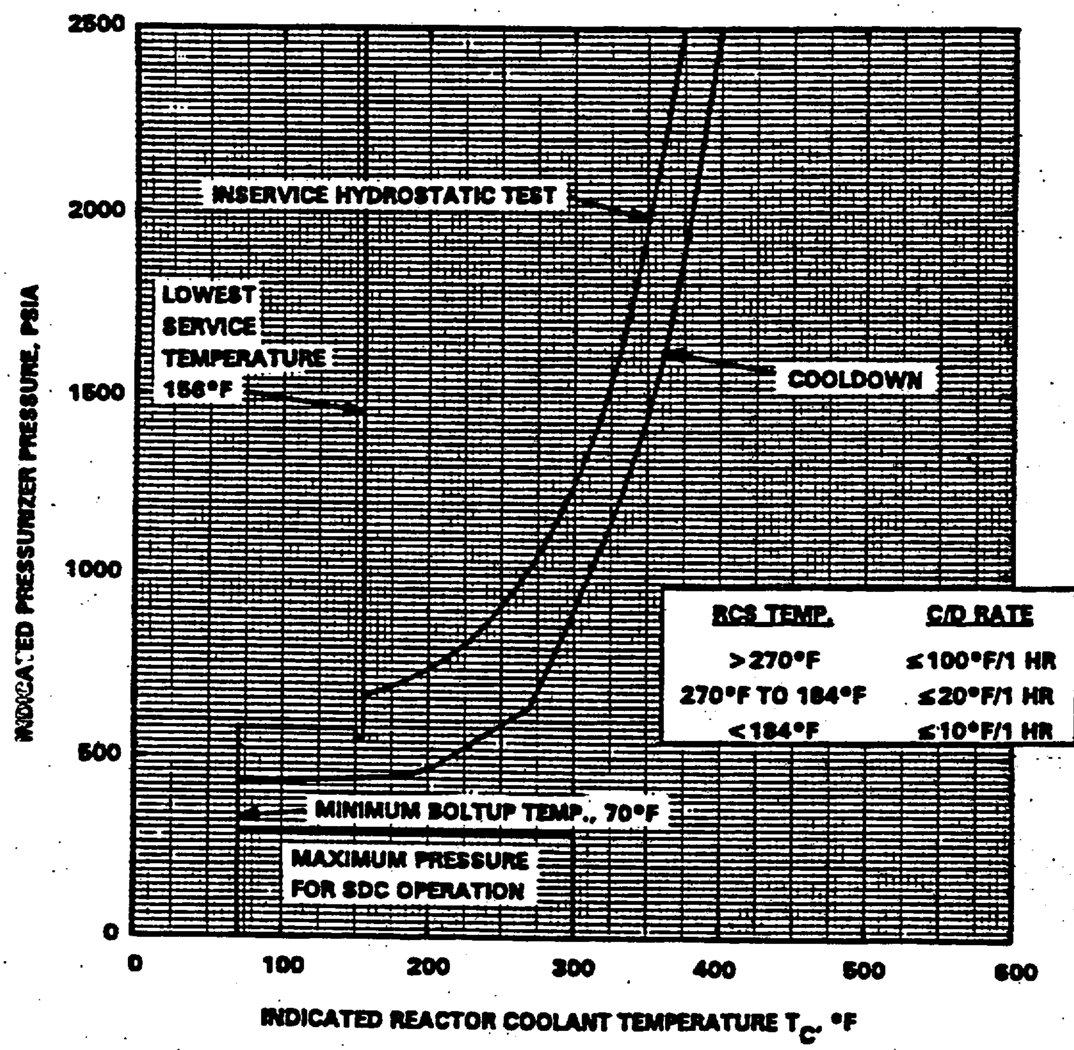

Figure 3.4.3-2
Calvert Cliffs Unit 1 Cooldown Curve, for Fluence ≤ 2.61×10^{19} n/cm^2
Reactor Coolant System Pressure Temperature Limits

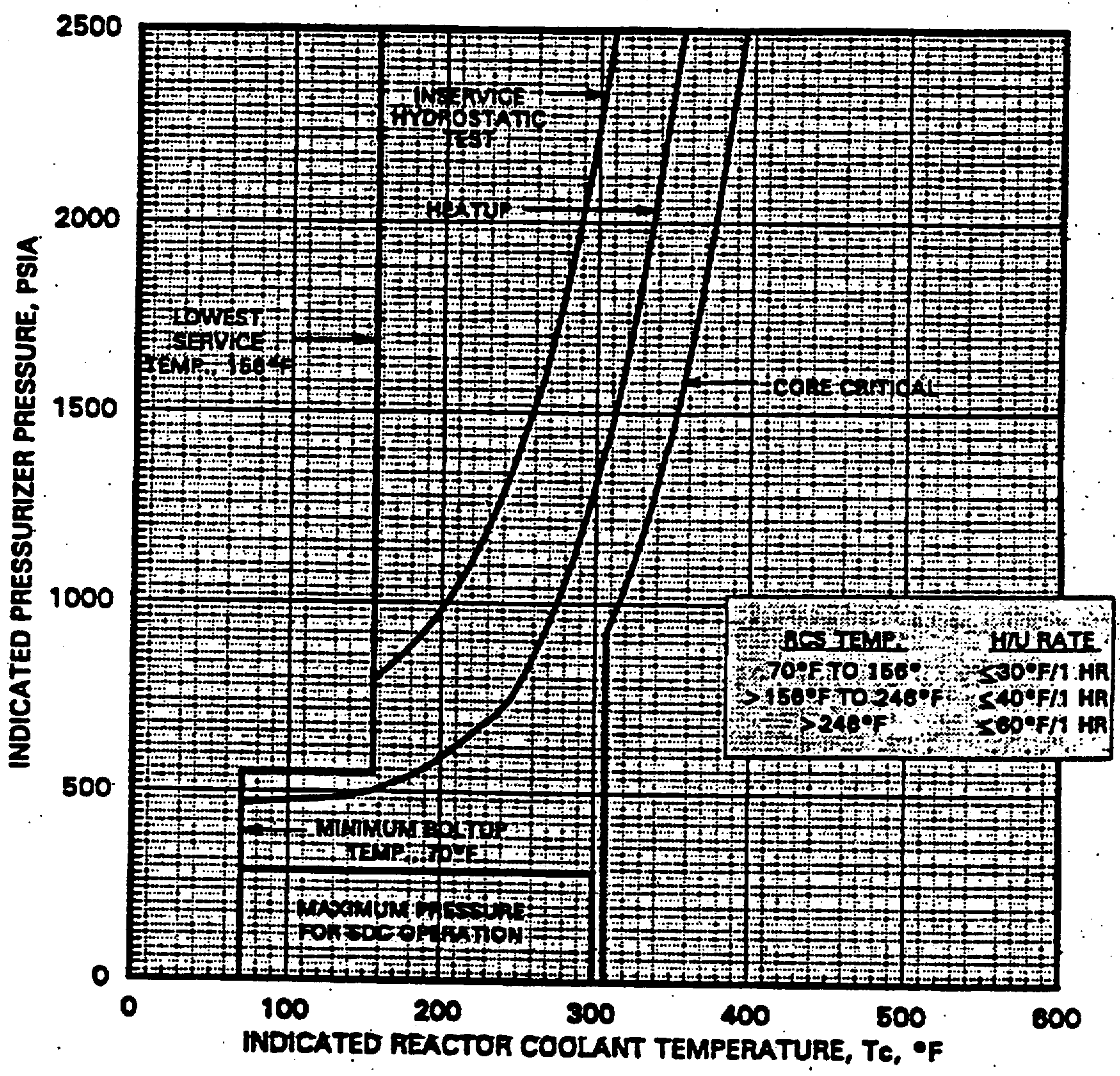

Figure 3.4.3-1
Calvert Cliffs Unit 2 Heatup Curve, for Fluence ≤ 4.0×10^{19} n/cm^2
Reactor Coolant System Pressure Temperature Limits

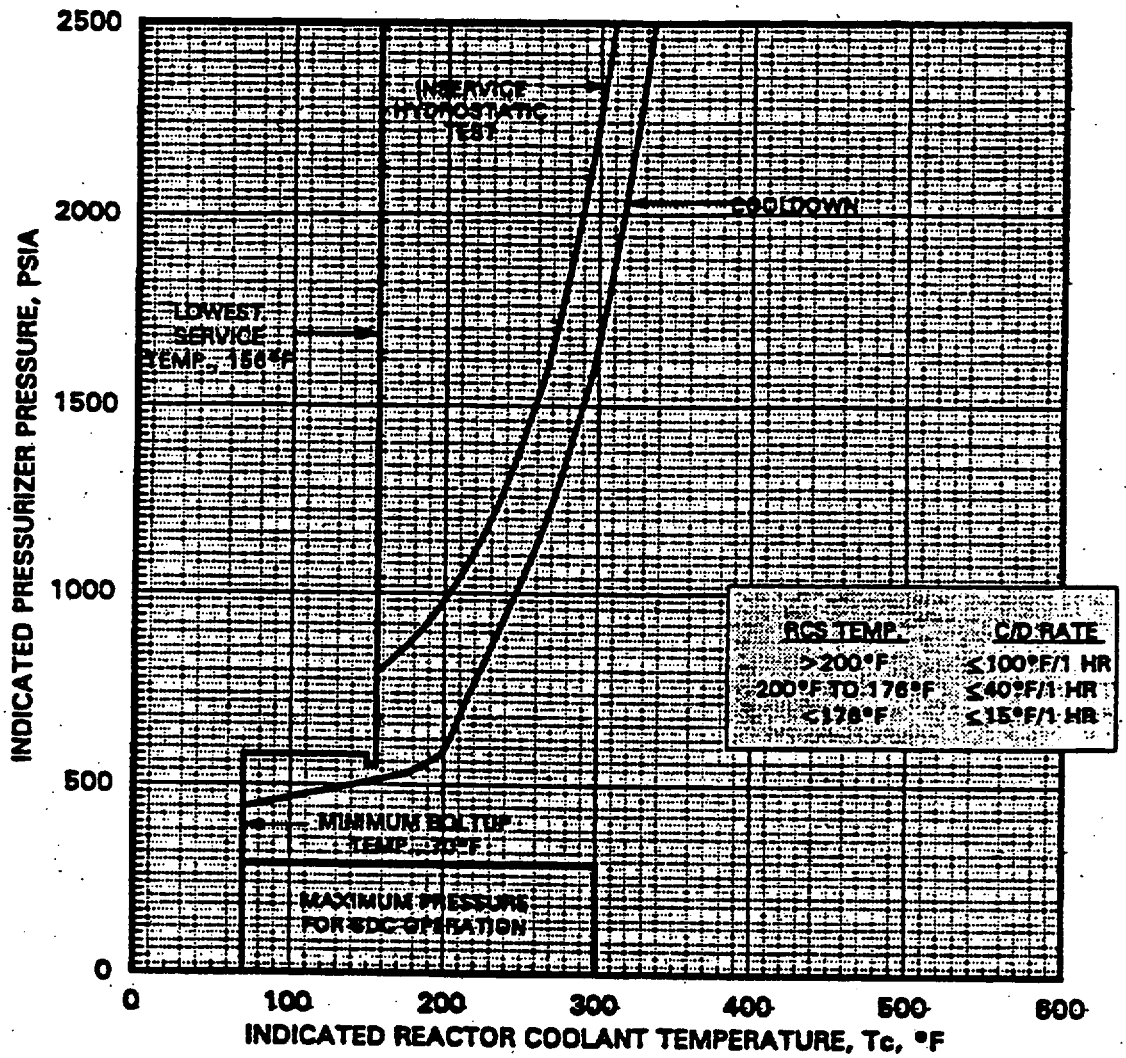

Figure 3.4.3-2
Calvert Cliffs Unit 2 Cooldown Curve, for Fluence ≤ 4.0×10^{19} n/cm^2
Reactor Coolant System Pressure Temperature Limits

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 Limiting Condition of Operation 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.

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

1. All reactor coolant pumps may be not in operation for ≤ 1 hour per 8 hour period and ≤ 2 hours per 8 hour period for low flow testing, provided:

    a. No operations are permitted that would cause reduction of the RCS boron concentration; and

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

2. No reactor coolant pump shall be started with any RCS cold leg temperature ≤ 365°F (Unit 1), ≤ 301°F (Unit 2) unless:

    a. The pressurizer water level is ≤ 170 inches;

    b. The pressurizer pressure is ≤ 300 psia (Unit 1), ≤ 320 psia (Unit 2); and

    c. The secondary water temperature of each steam generator is ≤ 30°F above the RCS 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
C. No RCS loop OPERABLE. OR No RCS loop in operation.	C.1 Suspend all operations involving a reduction of RCS boron concentration. AND C.2 Initiate action to restore one RCS loop to OPERABLE status and operation.	Immediately 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 inches.	12 hours

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.5.3	Verify correct breaker alignment and indicated power available to the required pump that is not in operation.	7 days

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.6 RCS Loops - MODE 4

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

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

1. All reactor coolant pumps and SDC pumps may be not in operation for ≤ 1 hour per 8 hour period, provided:

   a. No operations are permitted that would cause reduction of the RCS boron concentration; and

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

2. No reactor coolant pump shall be started with any RCS cold leg temperature ≤ 365°F (Unit 1), ≤ 301°F (Unit 2) unless:

   a. Pressurizer water level is ≤ 170 inches;

   b. Pressurizer pressure is ≤ 300 psia (Unit 1), ≤ 320 psia (Unit 2); and

   c. Secondary side water temperature in each steam generator is ≤ 30°F above the RCS temperature.

APPLICABILITY: MODE 4.

Correction letter of 1-7-2000

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required RCS loop inoperable. AND Two SDC loops inoperable.	A.1 Initiate action to restore a second loop to OPERABLE status.	Immediately
B. One required SDC loop inoperable. AND Two required RCS loops inoperable.	B.1 Be in MODE 5.	24 hours
C. Required RCS or SDC loops inoperable. OR No RCS or SDC loops in operation.	C.1 Suspend all operations involving reduction of RCS boron concentration. AND C.2 Initiate action to restore one loop to OPERABLE status and operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	Verify one RCS or SDC loop is in operation.	12 hours
SR 3.4.6.2	Verify secondary side water level in required steam generator(s) is > -50 inches.	12 hours
SR 3.4.6.3	Verify correct breaker alignment and indicated power available to the required loop components that are not in operation.	7 days

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.7 RCS Loops - MODE 5, Loops Filled

LCO 3.4.7

One shutdown cooling (SDC) loop shall be OPERABLE and in operation, and either:

a. One additional SDC loop shall be OPERABLE; or

b. The secondary side water level of each steam generator (SG) shall be ≥ -50 inches.

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

1. The SDC pump of the loop in operation may be not in operation for ≤ 1 hour per 8 hour period provided:

   a. No operations are permitted that would cause reduction of the RCS boron concentration; and

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

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

3. No reactor coolant pump shall be started with any RCS cold leg temperature ≤ 365°F (Unit 1), ≤ 301°F (Unit 2) unless:

   a. The pressurizer water level is ≤ 170 inches;

   b. Pressurizer pressure is ≤ 300 psia (Unit 1), ≤ 320 psia (Unit 2); and

   c. The secondary side water temperature in each SG is ≤ 30°F above the RCS temperature.

4. All SDC loops may be not in operation during planned heatup to MODE 4 when at least one RCS loop is in operation.

Correction letter of 1-7-2000

APPLICABILITY: MODE 5 with RCS loops filled.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SDC loop inoperable. AND Any SG with secondary side water level not within limit.	A.1 Initiate action to restore a second SDC loop to OPERABLE status. OR A.2 Initiate action to restore SG secondary side water levels to within limits.	Immediately Immediately
B. Required SDC loops inoperable. OR No SDC loop in operation.	B.1 Suspend all operations involving reduction in RCS boron concentration. AND B.2 Initiate action to restore one SDC loop to OPERABLE status and operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.7.1	Verify one SDC loop is in operation.	12 hours

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.7.2	Verify required SG secondary side water level is > -50 inches.	12 hours
SR 3.4.7.3	Verify correct breaker alignment and indicated power available to the required SDC loop components that are not in operation.	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) loops shall be OPERABLE and one SDC loop shall be in operation.

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

1. All SDC pumps may be not in operation for ≤ 15 minutes when switching from one loop to another provided:
   a. The core outlet temperature is maintained at least 10°F below saturation temperature;
   b. No operations are permitted that would cause a reduction of the RCS boron concentration; and
   c. No draining operations to further reduce the RCS water volume are permitted.
2. One SDC loop may be inoperable for ≤ 2 hours for surveillance testing provided the other SDC loop is OPERABLE and in operation.

APPLICABILITY: MODE 5 with RCS loops not filled.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SDC loop inoperable.	A.1 Initiate action to restore SDC loop to OPERABLE status.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required SDC loops inoperable. OR No SDC loop in operation.	B.1 Suspend all operations involving reduction of RCS boron concentration. AND B.2 Initiate action to restore one SDC loop to OPERABLE status and operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.8.1	Verify one SDC loop is in operation.	12 hours
SR 3.4.8.2	Verify correct breaker alignment and indicated power available to the required SDC loop components that are 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 ≥ 133 inches and ≤ 225 inches; and

b. Two banks of pressurizer heaters OPERABLE with the capacity of each bank ≥ 150 kW and capable of being powered from an emergency power supply.

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.	6 hours
	<u>AND</u>	
	A.2 Be in Mode 4.	12 hours
B. One required bank of pressurizer heaters inoperable.	B.1 Restore required bank of pressurizer heaters to OPERABLE status.	72 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition B not met.	C.1 Be in MODE 3. AND C.2 Be in Mode 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	Verify pressurizer water level is $\geq$ 133 inches and $\leq$ 225 inches.	12 hours
SR 3.4.9.2	Verify capacity of each required bank of pressurizer heaters $\geq$ 150 kW.	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Pressurizer Safety Valves

LCO 3.4.10 Two pressurizer safety valves shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with all RCS cold leg temperatures > 365°F (Unit 1), > 301°F (Unit 2).

------------------------------ NOTE ------------------------------
The lift settings are not required to be within Limiting Condition for Operation limits during MODE 3 > 365°F (Unit 1), > 301°F (Unit 2) 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 > 365°F (Unit 1), > 301°F (Unit 2) provided a preliminary cold setting was made prior to heatup.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One pressurizer safety valve inoperable.	A.1 Restore valve to OPERABLE status.	15 minutes

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met. OR Two pressurizer safety valves inoperable.	B.1 Be in MODE 3. AND B.2 Reduce all RCS cold leg temperatures to ≤ 365°F (Unit 1), ≤ 301°F (Unit 2).	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.10.1	Verify each pressurizer safety valve is OPERABLE in accordance with the Inservice Testing Program. The lift settings shall be within limits as specified below: Valve / As Found Lift Setting (psia) / As Left Lift Setting (psia) RC-200 / ≥ 2475 and ≤ 2550 / ≥ 2475 and ≤ 2525 RC-201 / ≥ 2514 and ≤ 2616 / ≥ 2540 and ≤ 2590	In accordance with the Inservice Testing Program

Valve	As Found Lift Setting (psia)	As Left Lift Setting (psia)
RC-200	≥ 2475 and ≤ 2550	≥ 2475 and ≤ 2525
RC-201	≥ 2514 and ≤ 2616	≥ 2540 and ≤ 2590

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 Pressurizer Power-Operated Relief Valves (PORVs)

LCO 3.4.11 Two PORVs and associated block valves shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with all RCS cold leg temperatures > 365°F (Unit 1),
> 301°F (Unit 2).

ACTIONS

------------------------------------ NOTES ------------------------------------
1. Separate Condition entry is allowed for each PORV.

2. LCO 3.0.4 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two PORVs inoperable and capable of being manually cycled.	A.1 Close and maintain power to associated block valve.	1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One PORV inoperable and not capable of being manually cycled.	B.1	Close associated block valve.	1 hour
	AND		
	B.2	Remove power from associated block valve.	1 hour
	AND		
	B.3	Restore PORV to OPERABLE status.	5 days
C. One block valve inoperable.	C.1	Place associated PORV in override closed.	1 hour
	AND		
	C.2	Restore block valve to OPERABLE status.	5 days
D. Two PORVs inoperable and not capable of being manually cycled.	D.1	Close associated block valves.	1 hour
	AND		
	D.2	Remove power from associated block valves.	1 hour
	AND		
	D.3	Restore one PORV to OPERABLE status.	72 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two block valves inoperable.	E.1 Place associated PORVs in override closed. AND E.2 Restore one block valve to OPERABLE status.	1 hour 72 hours
F. Required Action and associated Completion Time not met.	F.1 Be in MODE 3. AND F.2 Reduce any RCS cold leg temperature ≤ 365°F (Unit 1), ≤ 301°F (Unit 2).	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.11.1	Perform a CHANNEL FUNCTIONAL TEST of each PORV.	92 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.11.2	-------------------NOTE------------------- Not required to be performed with block valve closed in accordance with the Required Actions of this Limiting Condition for Operation. --- Perform a complete cycle of each block valve.	92 days
SR 3.4.11.3	Perform a complete cycle of each PORV.	24 months
SR 3.4.11.4	Perform a CHANNEL CALIBRATION of each PORV.	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.12 Low Temperature Overpressure Protection (LTOP) System

LCO 3.4.12 An LTOP System shall be OPERABLE with:

a. 1. A maximum of one high pressure safety injection (HPSI) pump only capable of manually injecting into the RCS, and

2. When HPSI suction is aligned to the refueling water tank, the HPSI pump shall be in manual control and either:

a) HPSI flow limited to ≤ 210 gpm, or

b) An RCS vent of ≥ 2.6 square inches established;

<u>AND</u>

b. HPSI loop motor-operated valves (MOVs) only capable of manually aligning HPSI pump flow to the RCS;

------------------------- NOTE -------------------------
HPSI loop MOVs may be capable of automatically aligning HPSI pump flow to the RCS for the purposes of testing.

<u>AND</u>

c. 1. Two OPERABLE power-operated relief valves (PORVs), and associated block valves open, with PORV lift settings on or below the curve in Figure 3.4.12-1 when the Shutdown Cooling (SDC) System is not in operation and PORV lift settings ≤ 429 psia (Unit 1), ≤ 443 psia (Unit 2), when the SDC is in operation, or

2. One OPERABLE PORV, and associated block valve open, with PORV lift setting on or below the curve in

Figure 3.4.12-1 when the SDC System is not in operation and PORV lift setting ≤ 429 psia (Unit 1), ≤ 443 psia (Unit 2), when the SDC is in operation; and an RCS vent of ≥ 1.3 square inches established; or

3. An RCS vent of ≥ 2.6 square inches established.

APPLICABILITY: MODE 3 with any RCS cold leg temperature ≤ 365°F (Unit 1), ≤ 301°F (Unit 2),
MODES 4, 5, and 6.

---------------------------- NOTE ----------------------------
This Specification is not applicable when the RCS is vented to ≥ 8 square inches.

ACTIONS

------------------------------------NOTE------------------------------------
While the requirements of this Limiting Condition for Operation are not met, entry into a MODE, or other specified condition in the Applicability is not permitted.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more HPSI pumps capable of automatically injecting into the RCS. OR Two or more HPSI pumps capable of manually injecting into the RCS.	A.1 Initiate action to verify a maximum of one HPSI pump only capable of manually injecting into the RCS and no HPSI pumps capable of automatically injecting into the RCS.	Immediately
B. HPSI flow > 210 gpm and suction aligned to refueling water tank. AND RCS vent < 2.6 square inches established.	B.1 Initiate action to reduce flow to ≤ 210 gpm.	Immediately
C. One or more HPSI loop MOVs capable of automatically aligning HPSI pump flow to the RCS.	C.1 Initiate action to verify HPSI loop MOVs are only capable of manually aligning HPSI pump flow to the RCS.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One of two required PORVs inoperable in MODE 3 with any RCS cold leg temperature ≤ 365°F (Unit 1), ≤ 301°F (Unit 2), or MODE 4. <u>AND</u> RCS vent < 1.3 square inches established.	D.1 Restore required PORV to OPERABLE status.	5 days
E. One of two required PORVs inoperable in MODE 5 or 6. <u>AND</u> RCS vent < 1.3 square inches established.	E.1 Restore required PORV to OPERABLE status.	24 hours
F. Required Action and associated Completion Time of Condition D or E not met.	F.1 Depressurize RCS and establish RCS vent ≥ 1.3 square inches.	48 hours
G. All required PORVs inoperable.	G.1 Depressurize RCS and establish RCS vent of ≥ 2.6 square inches.	48 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.12.1	Verify a maximum of one HPSI pump is only capable of manually injecting into the RCS.	12 hours
SR 3.4.12.2	Verify HPSI loop MOVs are only capable of manually aligning HPSI pump flow to the RCS.	12 hours
SR 3.4.12.3	Verify required RCS vent is open.	12 hours for unlocked open vent valve(s) 31 days for locked open vent valve(s)
SR 3.4.12.4	Verify PORV block valve is open for each required PORV.	72 hours
SR 3.4.12.5	-------------------NOTE------------------- Not required to be performed until 12 hours after decreasing any RCS cold leg temperature to ≤ 365°F (Unit 1), ≤ 301°F (Unit 2). -- Perform CHANNEL FUNCTIONAL TEST on each required PORV, excluding actuation.	31 days
SR 3.4.12.6	Perform CHANNEL CALIBRATION on each required PORV actuation channel.	24 months

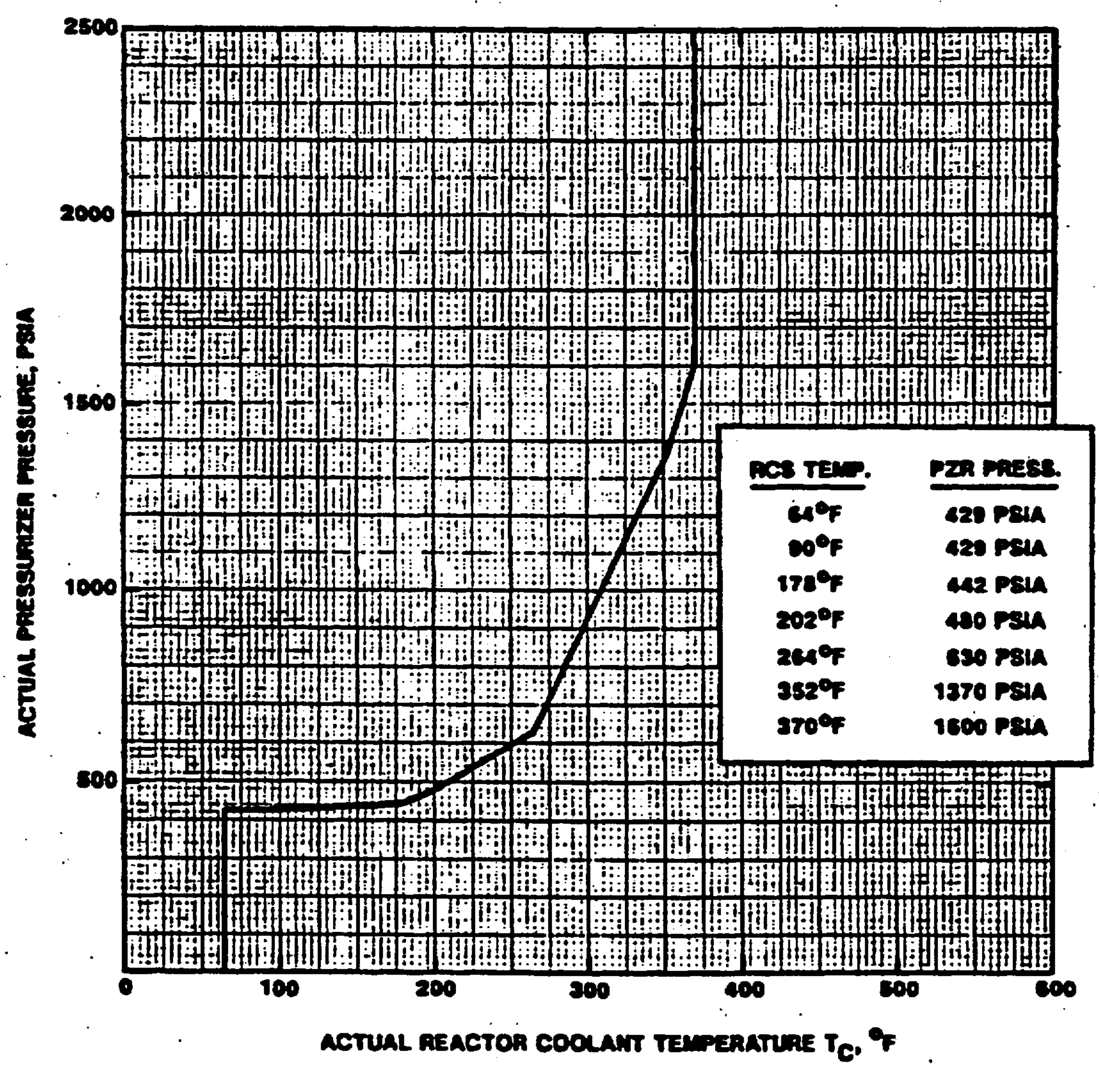

Figure 3.4-12-1
Calvert Cliffs Unit 1, for Fluence ≤ 2.61×10^{19} n/cm^2
Maximum PORV Opening Pressure vs Temperature

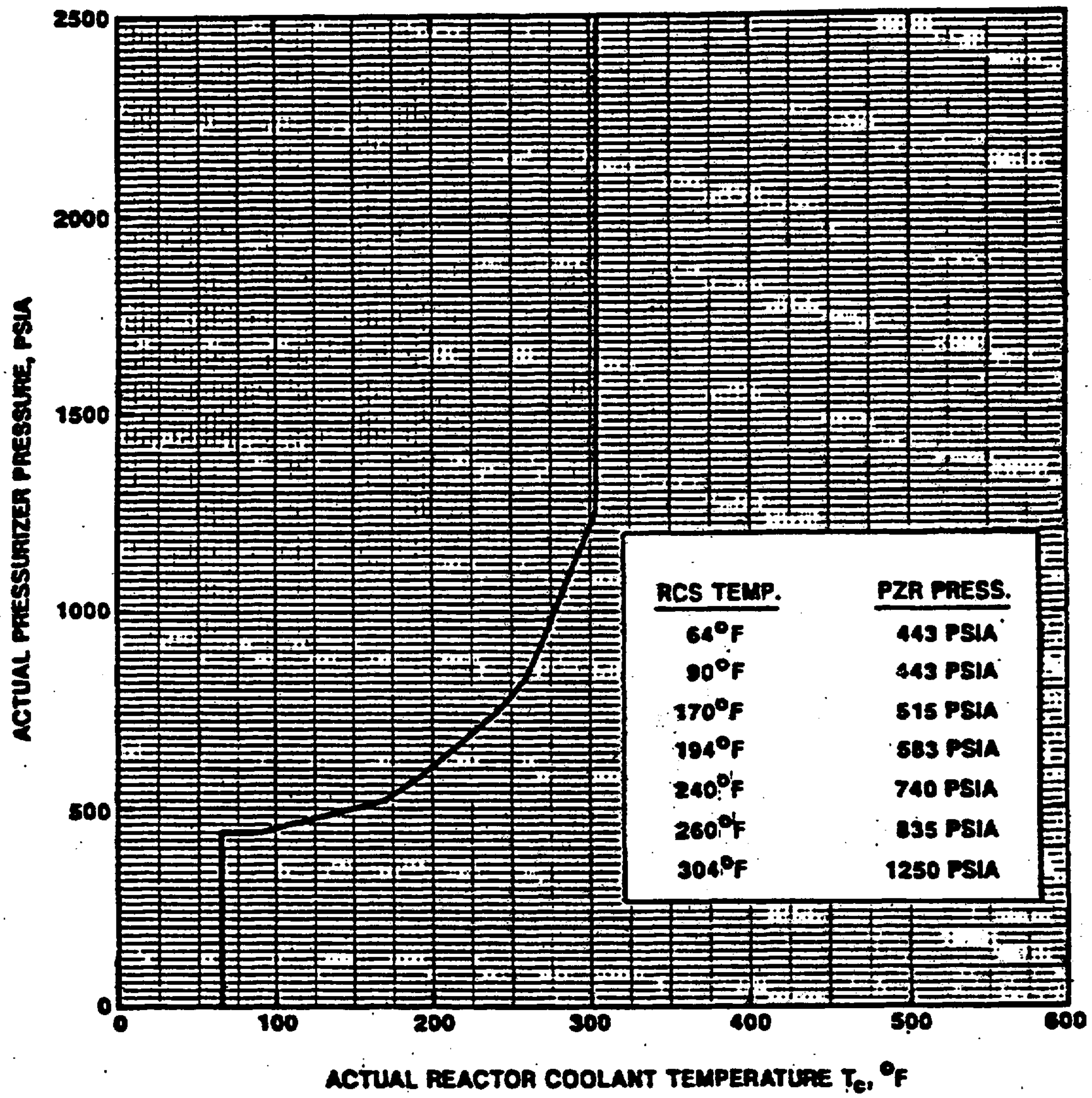

Figure 3.4-12-1
Calvert Cliffs Unit 2, for Fluence ≤ 4.0×10^{19} n/cm^2
Maximum PORV Opening Pressure vs Temperature

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;

d. 100 gallons per day primary to secondary LEAKAGE through any one steam generator.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.13.1	Verify RCS Operational LEAKAGE is within limits by performance of RCS water inventory balance.	72 hours
SR 3.4.13.2	Verify steam generator tube integrity is in accordance with the Steam Generator Tube Surveillance Program.	In accordance with the Steam Generator Tube Surveillance Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.14 RCS Leakage Detection Instrumentation

LCO 3.4.14 The following RCS leakage detection instrumentation shall be OPERABLE:

a. One containment sump level alarm; and

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

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

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required containment sump level alarm inoperable.	A.1 Perform SR 3.4.13.1.	Once per 24 hours
	AND	
	A.2 Restore containment sump level alarm to OPERABLE status.	30 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required containment atmosphere radioactivity monitor inoperable.	B.1.1 Analyze grab samples of the containment atmosphere.	Once per 24 hours
	<u>OR</u>	
	B.1.2 Perform SR 3.4.13.1.	Once per 24 hours
	<u>AND</u>	
	B.2 Restore required containment atmosphere radioactivity monitor to OPERABLE status.	30 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	C.2 Be in MODE 5.	36 hours
D. All required alarms and monitors inoperable.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.14.1	Perform CHANNEL CHECK of the required containment atmosphere radioactivity monitor.	12 hours
SR 3.4.14.2	Perform CHANNEL FUNCTIONAL TEST of the required containment atmosphere radioactivity monitor.	31 days
SR 3.4.14.3	Perform CHANNEL CALIBRATION of the required containment sump level alarm.	24 months
SR 3.4.14.4	Perform CHANNEL CALIBRATION of the required containment atmosphere radioactivity monitor.	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.15 RCS Specific Activity

LCO 3.4.15 The specific activity of the reactor coolant shall be within limits.

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 ------------ LCO 3.0.4 is not applicable. ------------------------------	
	A.1 Verify DOSE EQUIVALENT I-131 within the acceptable region of Figure 3.4.15-1.	Once per 4 hours
	<u>AND</u>	
	A.2 Restore DOSE EQUIVALENT I-131 to within limit.	100 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> DOSE EQUIVALENT I-131 in the unacceptable region of Figure 3.4.15-1.	B.1 Be in MODE 3 with T_{avg} < 500°F.	6 hours
C. Gross activity of the reactor coolant not within limit.	C.1 Be in MODE 3 with T_{avg} < 500°F.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.15.1	Verify reactor coolant gross activity $\leq 100/\bar{E}$ μCi/gm.	7 days

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.4.15.2	-------------------NOTE------------------- Only required to be performed in MODE 1. -- Verify reactor coolant DOSE EQUIVALENT I-131 specific activity ≤ 1.0 μCi/gm.	14 days AND Between 2 and 6 hours after THERMAL POWER change of ≥ 15% RTP within a 1 hour period
SR 3.4.15.3	-------------------NOTE------------------- Not required to be performed until 31 days after a minimum of 2 effective full power days and 20 days of MODE 1 operation have elapsed since the reactor was last subcritical for ≥ 48 hours. -- Determine $\bar{E}$ from a sample taken in MODE 1 after a minimum of 2 effective full power days and 20 days of MODE 1 operation have elapsed since the reactor was last subcritical for ≥ 48 hours.	184 days

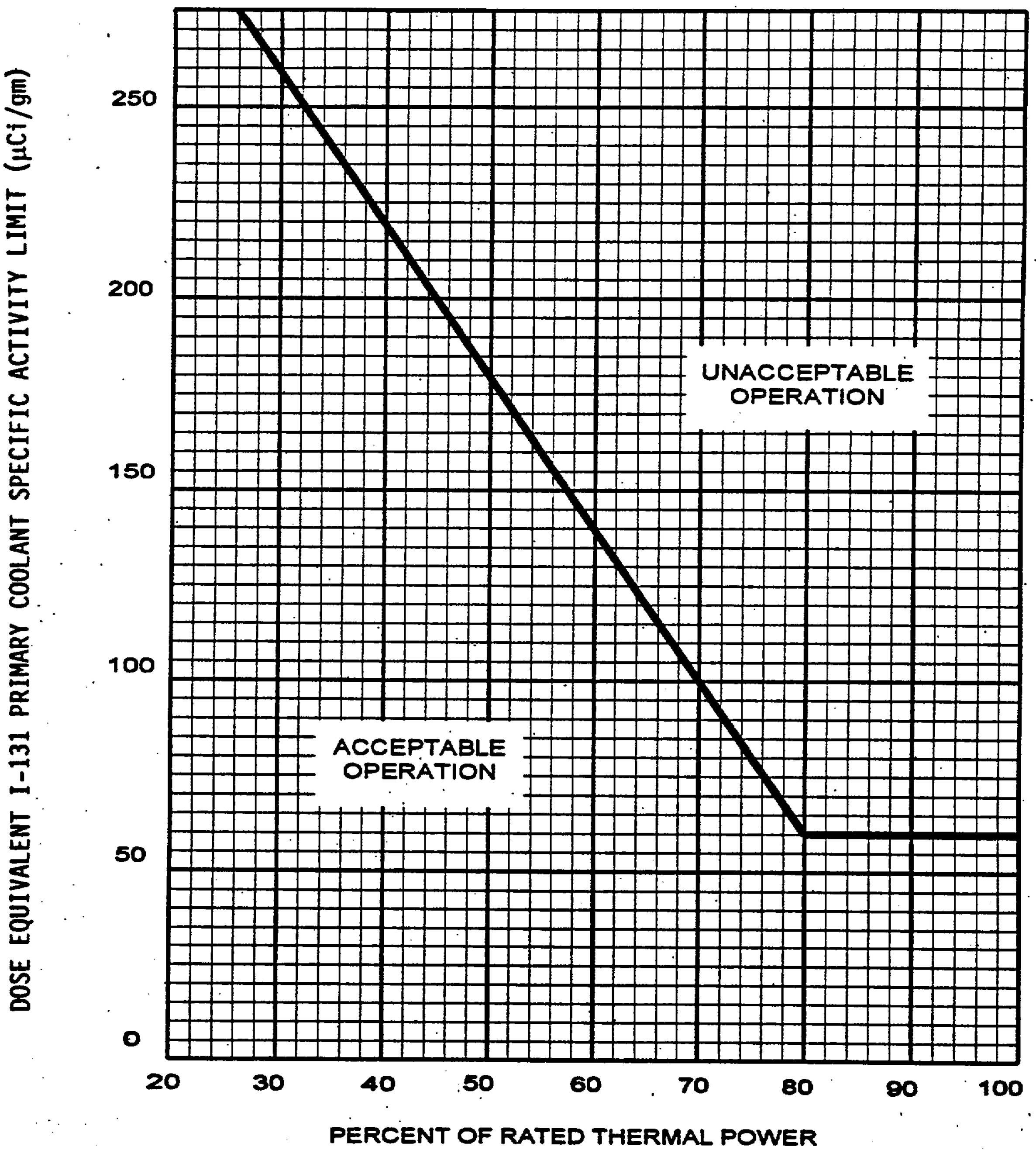

Figure 3.4.15-1 (page 1 of 1)
Reactor Coolant DOSE EQUIVALENT I-131 Specific Activity Limit Versus Percent of RATED THERMAL POWER With Reactor Coolant Specific Activity ≥ 1.0 μCi/gm DOSE EQUIVALENT I-131

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 Special Test Exception (STE) RCS Loops - MODE 2

LCO 3.4.16 The requirements of LCO 3.4.4, "RCS Loops-MODES 1 and 2," and the listed requirements of LCO 3.3.1, "Reactor Protective System (RPS) Instrumentation-Operating," for the Reactor Coolant Flow-Low, Thermal Margin/Low Pressure, and Asymmetric Steam Generator Transient Functions may be suspended provided:

a. THERMAL POWER ≤ 5% RTP; and

b. The reactor trip setpoints of the OPERABLE Power Level-High channels are set ≤ 15% RTP.

APPLICABILITY: MODE 2, during startup and PHYSICS TESTS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. THERMAL POWER not within limit.	A.1 Open reactor trip breakers.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.16.1 Verify THERMAL POWER ≤ 5% RTP.	1 hour

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.16.2	Perform a CHANNEL FUNCTIONAL TEST on each logarithmic and power level neutron flux monitoring channel.	12 hours prior to initiating startup or PHYSICS TESTS

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.17 Special Test Exception (STE) RCS Loops - MODES 4 and 5

LCO 3.4.17 The reactor coolant circulation requirements of LCO 3.4.6, "RCS Loops-MODE 4," LCO 3.4.7, "RCS Loops-MODE 5, Loops Filled," and LCO 3.4.8, "RCS Loops-MODE 5, Loops Not Filled" may be suspended during the time intervals required: 1) for local leak rate testing of containment penetration number 41 pursuant to the requirements of the Containment Leakage Rate Testing Program; and 2) to permit maintenance on valves located in the common shutdown cooling suction line or on the shutdown cooling flow control valve (CV-306) provided:

a. Xenon reactivity is $\leq 0.1\%\ \Delta k/k$ and is approaching stability;

b. No operations are permitted which could cause reduction of the RCS boron concentration;

c. The charging pumps are deenergized and the charging flow paths are closed; and

d. The SDM requirement of LCO 3.1.1 is verified every 8 hours.

APPLICABILITY: MODES 4 and 5.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more requirements of the Limiting Condition for Operation not met.	A.1	Suspend activities being performed under this Special Test Exception.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.17.1	Verify xenon reactivity is within limits.	Once within 1 hour prior to suspending the reactor coolant circulation requirements of LCO 3.4.6, LCO 3.4.7, and LCO 3.4.8
SR 3.4.17.2	Verify charging pumps de-energized.	1 hour
SR 3.4.17.3	Verify charging flow paths isolated.	1 hour
SR 3.4.17.4	Perform SR 3.1.1.1.	8 hours

3.5 EMERGENCY CORE COOLING SYSTEM (ECCS)

3.5.1 Safety Injection Tanks (SITs)

LCO 3.5.1 Four SITs shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

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 for reasons other than Condition A.	B.1 Restore SIT 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 4.	6 hours 12 hours
D. Two or more SITs inoperable.	D.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 ≥ 1113 cubic feet (187 inches) and ≤ 1179 cubic feet (199 inches).	12 hours
SR 3.5.1.3	Verify nitrogen cover pressure in each SIT is ≥ 200 psig and ≤ 250 psig.	12 hours
SR 3.5.1.4	Verify boron concentration in each SIT is ≥ 2300 ppm and ≤ 2700 ppm.	31 days AND -----NOTE ---- Only required to be performed for affected SIT -------------- Once within 1 hour prior to each solution volume increase of ≥ 1% of tank volume
SR 3.5.1.5	Verify power is removed from each SIT isolation valve operator when pressurizer pressure is ≥ 2000 psig.	31 days

3.5 EMERGENCY CORE COOLING SYSTEM (ECCS)

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 ≥ 1750 psia.

---------------------------- NOTE ----------------------------
Charging pumps are not required to be OPERABLE when THERMAL POWER is ≤ 80% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more trains inoperable. __AND__ At least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available.	A.1 Restore train(s) to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. __AND__ B.2 Reduce pressurizer pressure to < 1750 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 operator removed. Valve Number / Position / Function MOV-659 / Open / Mini-flow Isolation MOV-660 / Open / Mini-flow Isolation CV-306 / Open / Low Pressure Safety Injection Flow Control	12 hours
SR 3.5.2.2	Verify each ECCS manual, power-operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.2.3	Verify each high pressure safety injection and low pressure safety injection 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 3.5.2.4	Verify each required charging pump develops a flow of $\geq$ 37 gpm.	In accordance with the Inservice Testing Program
SR 3.5.2.5	Verify each ECCS automatic valve that is not locked, sealed, or otherwise secured in position, in the flow path actuates to the correct position on an actual or simulated actuation signal.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.6	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	24 months
SR 3.5.2.7	Verify each low pressure safety injection pump stops on an actual or simulated actuation signal.	24 months
SR 3.5.2.8	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
SR 3.5.2.9	Verify the Shutdown Cooling System open-permissive interlock prevents the Shutdown Cooling System suction isolation valves from being opened with a simulated or actual Reactor Coolant System pressure signal of ≥ 309 psia.	24 months

3.5 EMERGENCY CORE COOLING SYSTEM (ECCS)

3.5.3 ECCS - Shutdown

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

---------------------------- NOTE ----------------------------
When Reactor Coolant System cold leg temperatures are < 385°F (Unit 1), < 325°F (Unit 2) during heatup or cooldown and when ≤ 365°F (Unit 1), ≤ 301°F (Unit 2), during other conditions, the HPSI train is not required to be capable of automatically starting on an actuation signal.

APPLICABILITY: MODE 3 with pressurizer pressure < 1750 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 HPSI train related portions of the train following Surveillance Requirements are applicable: SR 3.5.2.1 SR 3.5.2.5 SR 3.5.2.2 SR 3.5.2.6 SR 3.5.2.3 SR 3.5.2.8	In accordance with applicable Surveillance Requirements

3.5 EMERGENCY CORE COOLING SYSTEM (ECCS)

3.5.4 Refueling Water Tank (RWT)

LCO 3.5.4 The RWT shall be OPERABLE.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.5.4.1	------------------NOTE------------------ Only required to be performed when ambient air temperature is < 40°F. -- Verify RWT borated water temperature is ≥ 40°F.	24 hours
SR 3.5.4.2	------------------NOTES------------------ 1. Only required to be met in MODE 1. 2. Only required to be performed when ambient air temperature is > 100°F. -- Verify RWT borated water temperature is ≤ 100°F.	24 hours
SR 3.5.4.3	Verify RWT borated water volume is ≥ 400,000 gallons.	7 days
SR 3.5.4.4	Verify RWT boron concentration is ≥ 2300 ppm and ≤ 2700 ppm.	7 days

3.5 EMERGENCY CORE COOLING SYSTEM (ECCS)

3.5.5 Trisodium Phosphate (TSP)

LCO 3.5.5 The TSP baskets shall contain ≥ 289.3 ft^3 of active TSP.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. TSP not within limits.	A.1 Restore TSP to within limits.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.5.1	Verify the TSP baskets contain ≥ 289.3 ft^3 of granular TSP dodecahydrate.	24 months
SR 3.5.5.2	Verify that a sample from the TSP baskets provides adequate pH adjustment of water borated to be representative of a post-loss-of-coolant accident sump condition.	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

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
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.

ACTIONS (continued)

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	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. ------------------------- B.1 Verify an OPERABLE door is closed in the affected air lock. **AND**	 1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	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

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
SR 3.6.2.2	Verify only one door in the air lock can be opened at a time.	24 months

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 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. Shutdown cooling isolation valves may be opened when RCS temperature is $< 300°F$ to establish shutdown cooling flow.

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. --------NOTE-------- Only applicable to penetration flow paths with two containment isolation valves and not a closed system. -------------------- One or more penetration flow paths with one containment isolation valve inoperable.	A.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.	4 hours
	<u>AND</u>		
	A.2	--------NOTE------- Isolation devices in high radiation areas may be verified by use of administrative means. -------------------- Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside 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

ACTIONS (continued)

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. --------- NOTE --------- Only applicable to penetration flow paths with one or more containment isolation valves and a closed system. --------------------- One or more penetration flow paths with one or more containment isolation valves 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.	72 hours
	AND	
	C.2 --------NOTE ------- Isolation devices in high radiation areas may be verified by use of administrative means. -------------------- Verify the affected penetration flow path is isolated.	Once per 31 days
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3.	6 hours
	AND	
	D.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.1	Verify each 4 inch containment vent valve is closed except when the 4 inch containment vent 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 3.6.3.2	-------------------NOTE------------------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. -- 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

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.3	-------------------NOTE------------------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. -- 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 3.6.3.4	Verify the isolation time of each automatic power-operated containment isolation valve is within limits.	In accordance with the Inservice Testing Program
SR 3.6.3.5	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	24 months

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure

LCO 3.6.4 Containment pressure shall be ≥ -1.0 psig and ≤ 1.8 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. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.5.1 Verify containment average air temperature is within limit.	24 hours

3.6 CONTAINMENT SYSTEMS

3.6.6 Containment Spray and Cooling Systems

LCO 3.6.6 Two containment spray trains and two containment cooling trains shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.
MODE 3, except containment spray is not required to be OPERABLE when pressurizer pressure is < 1750 psia.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One containment spray train inoperable.	A.1	Restore containment spray train to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet the Limiting Condition for Operation
B. Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 3 with pressurizer pressure < 1750 psia.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One containment cooling train inoperable.	C.1	Restore containment cooling train to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the Limiting Condition for Operation
D. Two containment cooling trains inoperable.	D.1	Restore one containment cooling train to OPERABLE status.	72 hours
E. Required Action and associated Completion Time of Condition C or D not met.	E.1	Be in MODE 3.	6 hours
	AND		
	E.2	Be in MODE 4.	12 hours
F. Two containment spray trains inoperable. OR Any combination of three or more trains inoperable.	F.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6.1	Verify each containment spray manual, power-operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.6.2	Operate each containment cooling train fan unit for ≥ 15 minutes.	31 days
SR 3.6.6.3	Verify each containment cooling train cooling water flow rate is ≥ 2000 gpm to each fan cooler.	31 days
SR 3.6.6.4	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.6.6.5	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.6.6.6	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	24 months
SR 3.6.6.7	Verify each containment cooling train starts automatically on an actual or simulated actuation signal.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6.8	Verify each spray nozzle is unobstructed.	10 years

3.6 CONTAINMENT SYSTEMS

3.6.7 Hydrogen Recombiners

LCO 3.6.7 Two hydrogen recombiners shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One hydrogen recombiner inoperable.	A.1	--------NOTE------- LCO 3.0.4 is not applicable. -------------------- Restore hydrogen recombiner to OPERABLE status.	30 days
B. Two hydrogen recombiners inoperable.	B.1	Verify by administrative means that the hydrogen control function is maintained.	1 hour __AND__ Every 12 hours thereafter
	__AND__		
	B.2	Restore one hydrogen recombiner to OPERABLE status.	7 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.7.1	Perform a system functional test for each hydrogen recombiner.	24 months
SR 3.6.7.2	Perform a CHANNEL CALIBRATION of all hydrogen recombiner instrumentation and control circuits.	24 months
SR 3.6.7.3	Visually examine each hydrogen recombiner enclosure and verify there is no evidence of abnormal conditions.	24 months
SR 3.6.7.4	Perform a resistance to ground test for each heater phase.	24 months

3.6 CONTAINMENT SYSTEMS

3.6.8 Iodine Removal System (IRS)

LCO 3.6.8 Three IRS trains shall be OPERABLE.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.8.1 Operate each IRS train for ≥ 15 minutes.	31 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.8.2	Perform required IRS filter testing in accordance with the Ventilation Filter Testing Program.	In accordance with the Ventilation Filter Testing Program
SR 3.6.8.3	Verify each IRS train actuates 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. One or more required MSSVs inoperable.	A.1 Reduce power to less than or equal to the applicable % RTP listed in Table 3.7.1-1.	4 hours
	<u>AND</u>	
	A.2 Reduce the Power Level-High Trip setpoint in accordance with Table 3.7.1-1.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met. OR One or more steam generators with less than five MSSVs OPERABLE.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

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

Table 3.7.1-1
Power Level-High Trip Setpoint versus
OPERABLE Main Steam Safety Valves

MINIMUM NUMBER OF MSSVs PER STEAM GENERATOR REQUIRED OPERABLE	MAXIMUM POWER (% RTP)	MAXIMUM ALLOWABLE POWER LEVEL-HIGH TRIP SETPOINT (% RTP)
8	100	107
7	93	93
6	79	79
5	66	66

Table 3.7.1-2
Main Steam Safety Valve Lift Settings

VALVE NUMBER		LIFT SETTING[1] (psig)
Steam Generator #1	Steam Generator #2	
RV-3992	RV-4000	935-995
RV-3993	RV-4001	935-995
RV-3994	RV-4002	935-1035
RV-3995	RV-4003	935-1035
RV-3996	RV-4004	935-1050
RV-3997	RV-4005	935-1050
RV-3998	RV-4006	935-1050
RV-3999	RV-4007	935-1050

(1) Lift settings for a given steam line are also acceptable if any two valves lift between 935 and 995 psig, any two other valves lift between 935 and 1035 psig, and the four remaining valves lift between 935 and 1050 psig.

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.

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1 Be in MODE 3. AND 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 < 5.2 seconds.	In accordance with the Inservice Testing Program

3.7 PLANT SYSTEMS

3.7.3 Auxiliary Feedwater (AFW) System

LCO 3.7.3 Two AFW trains shall be OPERABLE.

---------------------------- NOTE ----------------------------
AFW trains required for OPERABILITY may be taken out of service under administrative control for the performance of periodic testing.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
----------- NOTE ---------- LCO 3.0.4 is not applicable. -------------------------- A. One steam-driven AFW pump inoperable.	A.1 Align remaining OPERABLE steam-driven pump to automatic initiating status. <u>AND</u> A.2 Restore steam-driven pump to OPERABLE status.	72 hours 7 days AND 10 days from discovery of failure to meet the Limiting Condition for Operation (LCO)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
-----------NOTE---------- LCO 3.0.4 is not applicable. --------------------------	B.1	Align standby steam-driven pump to automatic initiating status.	72 hours
B. One motor-driven AFW pump inoperable.	AND		
	B.2	Restore motor-driven pump to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the LCO
C. Two AFW pumps inoperable.	C.1	Align remaining OPERABLE pump to automatic initiating status.	1 hour
	AND		
	C.2	Verify the other unit's motor-driven AFW pump is OPERABLE.	1 hour
	AND		
	C.3	Verify, by administrative means, the cross-tie valve to the opposite unit is OPERABLE.	1 hour
	AND		

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. (continued)	C.4	Restore one AFW pump to OPERABLE status.	72 hours
D. One AFW train inoperable for reasons other than Condition A, B, or C.	D.1	Restore AFW train to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet the LCO
E. Required Action and associated Completion Time of Condition A, B, C, or D not met.	E.1	Be in MODE 3.	6 hours
	AND		
	E.2	Be in MODE 4.	12 hours
F. Two AFW trains inoperable.	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

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.3.1	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 pumps, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.3.2	Cycle each testable, remote-operated valve that is not in its operating position.	In accordance with the Inservice Testing Program
SR 3.7.3.3	-------------------NOTE------------------- Not required to be performed for the turbine-driven AFW pump until 24 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 3.7.3.4	-------------------NOTE------------------- Not required to be performed for the turbine-driven AFW pump until 24 hours after reaching 800 psig in the steam generators. -- Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	24 months

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.7.3.5	-------------------NOTE------------------- Not required to be performed for the turbine-driven AFW pump until 24 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 3.7.3.6	-------------------NOTE------------------- Not required to be performed for the AFW train with the turbine-driven AFW pump until 24 hours after reaching 800 psig in the steam generators. --	
	Verify the AFW system is capable of providing a minimum of 300 gpm nominal flow to each flow leg.	24 months
SR 3.7.3.7	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

3.7.4 Condensate Storage Tank (CST)

LCO 3.7.4 The CST shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. CST inoperable.	A.1 Verify OPERABILITY of backup water supply. __AND__ A.2 Restore CST to OPERABLE status.	4 hours __AND__ Once per 12 hours thereafter 7 days
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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Verify CST usable volume is ≥ 150,000 gallons per Unit.	12 hours

3.7 PLANT SYSTEMS

3.7.5 Component Cooling (CC) System

LCO 3.7.5 Two CC loops shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One CC loop inoperable.	A.1	--------NOTE ------- Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops--MODE 4," for shutdown cooling made inoperable by CC. -------------------- Restore CC loop 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 3.7.5.1	-------------------NOTE------------------- Isolation of CC flow to individual components does not render the CC System inoperable. -- Verify each CC 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 3.7.5.2	Verify each CC automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.7.5.3	Verify each CC pump starts automatically on an actual or simulated actuation signal.	24 months

3.7 PLANT SYSTEMS

3.7.6 Service Water (SRW) System

LCO 3.7.6 Two SRW subsystems shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SRW heat exchanger inoperable.	A.1 Isolate flow to one of the associated containment cooling units. --------NOTE ------- Enter applicable Conditions and Required Actions of LCO 3.6.6, "Containment Spray and Cooling Systems," for one containment cooling train made inoperable by the heat exchanger. -------------------- AND A.2 Restore heat exchanger to operable status.	1 hour 7 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One SRW subsystem inoperable.	B.1	--------NOTE------- Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources--Operating," for diesel generator made inoperable by SRW. -------------------- Restore SRW subsystem 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.	6 hours
	<u>AND</u>		
	C.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	-------------------NOTE------------------- Isolation of SRW flow to individual components does not render SRW inoperable. -- Verify each SRW 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

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.6.2	Verify each SRW automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.7.6.3	Verify each SRW pump starts automatically on an actual or simulated actuation signal.	24 months

3.7 PLANT SYSTEMS

3.7.7 Saltwater (SW) System

LCO 3.7.7 Two SW subsystems shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SW subsystem inoperable.	A.1 ------- NOTES ------- 1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources-Operating," for emergency diesel generator made inoperable by SW System. 2. Enter application Conditions and Required Actions of LCO 3.4.6, "RCS Loops-MODE 4," for shutdown cooling made inoperable by SW System. -------------------- Restore SW subsystem to OPERABLE status.	72 hours

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.7.1	-------------------NOTE------------------- Isolation of SW System flow to individual components does not render SW inoperable. -- Verify each SW System 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 3.7.7.2	Verify each SW System automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.7.7.3	Verify each SW System pump starts automatically on an actual or simulated actuation signal.	24 months

3.7 PLANT SYSTEMS

3.7.8 Control Room Emergency Ventilation System (CREVS)

LCO 3.7.8 Two CREVS trains shall be OPERABLE.

-----NOTE-----
Only one CREVS redundant component is required to be OPERABLE during movement of irradiated fuel assemblies when both Units are in MODE 5 or 6, or defueled.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more ducts with one outside air intake isolation valve inoperable in MODE 1, 2, 3, or 4.	A.1 Close the OPERABLE outside air intake valve in each affected duct.	Immediately
B. Toilet area exhaust isolation valve inoperable.	B.1 Restore valve to OPERABLE status.	24 hours
C. One exhaust to atmosphere isolation valve inoperable in MODE 1, 2, 3, or 4.	C.1 Restore valve to OPERABLE status.	7 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One CREVS train inoperable for reasons other than Condition A, B, or C in MODE 1, 2, 3, or 4.	D.1 Restore CREVS train to OPERABLE status.	7 days
E. Required Action and associated Completion Time of Condition A, B, C, or D not met in MODE 1, 2, 3, or 4.	E.1 Be in MODE 3. AND E.2 Be in MODE 5.	6 hours 36 hours
F. Required Action and associated Completion Time of Condition B not met during movement of irradiated fuel assemblies. OR Required CREVS inoperable for reasons other than Condition B during movement of irradiated fuel assemblies.	F.1 Suspend movement of irradiated fuel assemblies.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. Two CREVS trains inoperable for reasons other than Condition A, B, or C in MODE 1, 2, 3, or 4. <u>OR</u> One or more ducts with two outside air intake isolation valves inoperable in MODE 1, 2, 3, or 4. <u>OR</u> Two exhaust to atmosphere isolation valves inoperable in MODE 1, 2, 3, or 4.	G.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.8.1	Operate each required CREVS filter train for ≥ 15 minutes.	31 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.8.2	Perform required CREVS filter testing in accordance with Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.8.3	Verify each CREVS train actuates on an actual or simulated actuation signal.	24 months

3.7 PLANT SYSTEMS

3.7.9 Control Room Emergency Temperature System (CRETS)

LCO 3.7.9 Two CRETS trains shall be OPERABLE.

------------------------------------NOTE------------------------------------
Only one CRETS train is required to be OPERABLE during movement of irradiated fuel assemblies when both Units are in MODE 5 or 6, or defueled.

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

ACTIONS

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two CRETS trains inoperable in MODE 1, 2, 3, or 4.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Verify each required CRETS train has the capability to maintain control room temperature within limits.	24 months

3.7 PLANT SYSTEMS

3.7.10 Emergency Core Cooling System (ECCS) Pump Room Exhaust Filtration System (PREFS)

LCO 3.7.10 ECCS PREFS shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ECCS PREFS exhaust fan inoperable.	A.1 Restore ECCS PREFS exhaust fan to OPERABLE status.	7 days
B. ECCS PREFS inoperable for reasons other than Condition A.	B.1 Restore ECCS PREFS to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Operate ECCS PREFS for $\geq$ 15 minutes.	31 days
SR 3.7.10.2	Perform required ECCS PREFS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP

3.7 PLANT SYSTEMS

3.7.11 Spent Fuel Pool Exhaust Ventilation System (SFPEVS)

LCO 3.7.11 The SFPEVS shall be OPERABLE and in operation.

APPLICABILITY: During movement of irradiated fuel assemblies in the Auxiliary Building.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SFPEVS charcoal adsorber bank inoperable. <u>OR</u> One SFPEVS exhaust fan inoperable. <u>OR</u> One SFPEVS charcoal adsorber bank and one SFPEVS exhaust fan inoperable.	A.1 Verify OPERABLE SFPEVS train is in operation. <u>OR</u> A.2 Suspend movement of irradiated fuel assemblies in the Auxiliary Building.	Immediately Immediately
B. No OPERABLE SFPEVS train. <u>OR</u> No OPERABLE SFPEVS train in operation.	B.1 Suspend movement of irradiated fuel assemblies in the Auxiliary Building.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Verify an OPERABLE SFPEVS train is in operation.	12 hours
SR 3.7.11.2	Perform required SFPEVS filter testing in accordance with the Ventilation Filter Testing Program.	In accordance with the Ventilation Filter Testing Program
SR 3.7.11.3	Verify each SFPEVS fan can maintain a measurable negative pressure with respect to atmospheric pressure.	24 months

3.7 PLANT SYSTEMS

3.7.12 Penetration Room Exhaust Ventilation System (PREVS)

LCO 3.7.12 Two PREVS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One PREVS train inoperable.	A.1 Restore PREVS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.12.1	Operate each PREVS train for ≥ 15 minutes.	31 days
SR 3.7.12.2	Verify required PREVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.12.3	Verify each PREVS train actuates on an actual or simulated actuation signal.	24 months

3.7 PLANT SYSTEMS

3.7.13 Spent Fuel Pool (SFP) Water Level

LCO 3.7.13 The SFP water level shall be ≥ 21.5 ft over the top of irradiated fuel assemblies seated in the storage racks, and ≥ 19.8 ft over the top of fuel assemblies seated on rack spacers in the storage racks for reconstitution activities.

APPLICABILITY: During movement of irradiated fuel assemblies in the SFP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SFP water level not within limits.	A.1 --------NOTE------- LCO 3.0.3 is not applicable. -------------------- Suspend movement of irradiated fuel assemblies in SFP and suspend reconstitution activities.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.13.1	Verify the SFP water level is ≥ 21.5 ft above the top of irradiated fuel assemblies seated in the storage racks.	7 days

3.7 PLANT SYSTEMS

3.7.14 Secondary Specific Activity

LCO 3.7.14 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 3.7.14.1	Verify the specific activity of the secondary coolant is within limit.	31 days

3.7 PLANT SYSTEMS

3.7.15 Main Feedwater Isolation Valves (MFIVs)

LCO 3.7.15 Two MFIVs shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more MFIVs inoperable.	A.1 Restore MFIV to OPERABLE status.	72 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 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.15.1	Verify the closure time of each MFIV is in accordance with the Inservice Testing Program.	In accordance with the Inservice Testing Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources-Operating

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

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

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

c. One qualified circuit between the offsite transmission network and the other unit's onsite Class 1E AC electrical power distribution subsystems needed to supply power to the Control Room Emergency Ventilation System (CREVS), Control Room Emergency Temperature System (CRETS), and H_2 Analyzer and one DG from the other unit capable of supplying power to the CREVS, CRETS, and H_2 Analyzer.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required LCO 3.8.1.a offsite circuit inoperable.	A.1	Perform SR 3.8.1.1 or SR 3.8.1.2 for required OPERABLE offsite circuits.	1 hour __AND__ Once per 8 hours thereafter
	__AND__		
	A.2	Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)
	__AND__		
	A.3	Restore required offsite circuit to OPERABLE status.	72 hours __AND__ 6 days from discovery of failure to meet LCO 3.8.1.a or LCO 3.8.1.b

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One LCO 3.8.1.b DG inoperable.	B.1	Perform SR 3.8.1.1 or SR 3.8.1.2 for the OPERABLE required offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND		
	B.2	Declare required feature(s) supported by the inoperable DG inoperable when 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(s) is not inoperable due to common cause failure.	24 hours
		OR	
	B.3.2	Perform SR 3.8.1.3 for OPERABLE DG(s).	24 hours
	AND		

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.4 Restore DG to OPERABLE status.	72 hours AND 6 days from discovery of failure to meet LCO 3.8.1.a or LCO 3.8.1.b
C. LCO 3.8.1.c offsite circuit inoperable.	----------- NOTE ------------ Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems-Operating," when Condition C is entered with no AC power source to a train. ---------------------------- C.1 Perform SR 3.8.1.1 or SR 3.8.1.2 for required OPERABLE offsite circuit(s). AND	 1 hour AND Once per 8 hours thereafter

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2 Declare, CREVS, CRETS, or H_2 Analyzer with no offsite power available inoperable when the redundant CREVS, CRETS, or H_2 Analyzer is inoperable.	24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)
	<u>AND</u>	
	C.3 Declare CREVS, CRETS, and H2 Analyzer supported by the inoperable offsite circuit inoperable.	72 hours
D. LCO 3.8.1.c DG inoperable.	----------- NOTE ------------ Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems-Operating," when Condition D is entered with no AC power source to a train. ----------------------------	
	D.1 Perform SR 3.8.1.1 or SR 3.8.1.2 for the OPERABLE required offsite circuit(s).	1 hour <u>AND</u> One per 8 hours thereafter
	<u>AND</u>	

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. (continued)	D.2	Declare CREVS, CRETS, or H_2 Analyzer supported by the inoperable DG inoperable when the redundant CREVS, CRETS, or H_2 Analyzer is inoperable.	4 hours from discovery of Condition D concurrent with inoperability of redundant required feature(s)
	AND		
	D.3.1	Determine OPERABLE DG(s) is not inoperable due to common cause failures.	24 hours
		OR	
	D.3.2	Perform SR 3.8.1.3 for OPERABLE DG(s).	24 hours
	AND		
	D.4	Declare CREVS, CRETS, and H_2 Analyzer supported by the inoperable DG inoperable.	72 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two required LCO 3.8.1.a offsite circuits inoperable. OR One required LCO 3.8.1.a offsite circuit that provides power to the CREVS, CRETS, and H_2 Analyzer inoperable and the required LCO 3.8.1.c offsite circuit inoperable.	E.1 Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition E concurrent with inoperability of redundant required feature(s)
	AND	
	E.2 Restore one required offsite circuit to OPERABLE status.	24 hours
F. One required LCO 3.8.1.a offsite circuit inoperable. AND One LCO 3.8.1.b DG inoperable.	----------- NOTE ----------- Enter applicable Conditions and Required Actions of LCO 3.8.9, when Condition F is entered with no AC power source to any train. ----------------------------	
	F.1 Restore required offsite circuit to OPERABLE status.	12 hours
	OR	
	F.2 Restore DG to OPERABLE status.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. Two LCO 3.8.1.b DGs inoperable. OR LCO 3.8.1.b DG that provides power to the CREVS, CRETS, and H_2 Analyzer inoperable and LCO 3.8.1.c DG inoperable.	G.1 Restore one DG to OPERABLE status.	2 hours
H. Required Action and associated Completion Time of Condition A, B, D, E, F, or G not met.	H.1 Be in MODE 3. AND H.2 Be in MODE 5.	6 hours 36 hours
I. Three or more required LCO 3.8.1.a and LCO 3.8.1.b AC sources inoperable.	I.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

-------------------------------------NOTE-------------------------------------
SR 3.8.1.1 through SR 3.8.1.15 are only applicable to LCO 3.8.1.a and LCO 3.8.1.b AC sources. SR 3.8.1.16 is only applicable to LCO 3.8.1.c AC sources.

	SURVEILLANCE	FREQUENCY
SR 3.8.1.1	-------------------NOTE------------------- Only required to be performed when SMECO is being credited for an offsite source. -- Verify correct breaker alignment and indicated power availability for the 69 kV SMECO offsite circuit.	Once within 1 hour after substitution for a 500 kV offsite circuit <u>AND</u> 8 hours thereafter
SR 3.8.1.2	Verify correct breaker alignment and indicated power availability for each required 500 kV offsite circuit.	7 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.3	------------------ NOTES ------------------ 1. Performance of SR 3.8.1.9 satisfies this Surveillance Requirement. 2. All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. 3. A modified DG start involving idling and gradual acceleration to synchronous speed may be used for this Surveillance Requirement as recommended by the manufacturer. When modified start procedures are not used, the voltage and frequency tolerances of SR 3.8.1.9 must be met. --	
	Verify each DG starts and achieves steady state voltage ≥ 4060 V and ≤ 4400 V, and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	31 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.4	------------------ NOTES ------------------ 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients below the load limit do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This Surveillance Requirement shall be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.3 or SR 3.8.1.9. -- Verify each DG is synchronized and loaded, and operates for ≥ 60 minutes at a load ≥ 4000 kW for DG 1A and ≥ 2700 kW for DGs 1B, 2A, and 2B.	31 days
SR 3.8.1.5	Verify each day tank contains ≥ 325 gallons of fuel oil for DG 1A and ≥ 275 gallons of fuel oil for DGs 1B, 2A, and 2B.	31 days
SR 3.8.1.6	Check for and remove accumulated water from each day tank.	31 days
SR 3.8.1.7	Verify the fuel oil transfer system operates to automatically transfer fuel oil from storage tank[s] to the day tank.	31 days

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.8	Verify interval between each sequenced load block is within ± 10% of design interval for the load sequencer.	31 days
SR 3.8.1.9	-------------------NOTE------------------- All DG starts may be preceded by an engine prelube period. -- Verify each DG starts from standby condition and achieves, in ≤ 10 seconds, voltage > 4060 V and frequency > 58.8 Hz, and after steady state conditions are reached, maintains voltage ≥ 4060 V and ≤ 4400 V and frequency of > 58.8 Hz and ≤ 61.2 Hz.	 184 days
SR 3.8.1.10	Verify manual transfer of AC power sources from the normal offsite circuit to the alternate offsite circuit.	24 months
SR 3.8.1.11	-------------------NOTE------------------- Momentary transients outside the load and power factor limits do not invalidate this test. -- Verify each DG, operating at a power factor of ≤ 0.85, operates for ≥ 60 minutes while loaded to ≥ 4000 kW for DG 1A and ≥ 3000 kW for DGs 1B, 2A, and 2B.	 24 months
SR 3.8.1.12	Verify each DG rejects a load ≥ 500 hp without tripping.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.13	Verify that automatically bypassed DG trips are automatically bypassed on an actual or simulated required actuation signal.	24 months
SR 3.8.1.14	Verify each DG: a. Synchronizes with offsite power source while loaded upon a simulated restoration of offsite power; b. Manually transfers loads to offsite power source; and c. Returns to ready-to-load operation.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.15	-------------------NOTE------------------- All DG starts may be preceded by an engine prelube period. -- Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated Engineered Safety Feature actuation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected emergency loads through load sequencer, 3. maintains steady state voltage ≥ 4060 V and ≤ 4400 V, 4. maintains steady state frequency of ≥ 58.8 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.16	For the LCO 3.8.1.c AC electrical sources, SR 3.8.1.1, SR 3.8.1.2, SR 3.8.1.3, SR 3.8.1.5, SR 3.8.1.6, and SR 3.8.1.7 are required to be performed.	In accordance with applicable Surveillance Requirements

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources-Shutdown

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

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

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

c. One qualified circuit between the offsite transmission network and the other unit's onsite Class 1E AC electrical power distribution subsystems that supply power to the required Control Room Emergency Ventilation System and the Control Room Emergency Temperature System; and

d. One DG from the other unit capable of supplying the other unit's onsite Class 1E AC electrical power distribution subsystems that supply power to the required Control Room Emergency Ventilation System and Control Room Emergency Temperature System, if the DG required by LCO 3.8.2.b is not capable of supplying power to the onsite Class 1E AC electrical power distribution subsystems that supply power to the required Control Room Emergency Ventilation System and Control Room Emergency Temperature System.

APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

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

1. LCO 3.0.3 is not applicable.

2. Performance of Required Actions shall not preclude completion of actions to establish a safe conservative position.

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>	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	<u>AND</u>	

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (Continued)	A.2.3	Initiate action to suspend operations involving positive reactivity additions.	Immediately
		<u>AND</u>	
	A.2.4	Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately
B. One required DG inoperable.	B.1	Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>		
	B.2	Suspend movement of irradiated fuel assemblies.	Immediately
	<u>AND</u>		
	B.3	Initiate action to suspend operations involving positive reactivity additions.	Immediately
	<u>AND</u>		
	B.4	Initiate action to restore required DG to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.2.1	-------------------NOTE------------------- The following Surveillance Requirements (SRs) are not required to be performed: SR 3.8.1.11, SR 3.8.1.12, and SR 3.8.1.14. -- For the LCO 3.8.2.a and LCO 3.8.2.b AC sources required to be OPERABLE, the SRs of Specification 3.8.1, "AC Sources-Operating," except SR 3.8.1.4, SR 3.8.1.8, SR 3.8.1.10, SR 3.8.1.13, 3.8.1.15, and SR 3.8.1.16, are applicable.	In accordance with applicable SRs
SR 3.8.2.2	For the LCO 3.8.2.c and LCO 3.8.2.d AC sources required to be OPERABLE, the SRs required by SR 3.8.1.16, are applicable.	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil

LCO 3.8.3 The stored diesel fuel oil 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. Fuel oil storage tank (FOST) 1A with fuel oil volume < 49,500 gallons and ≥ 42,430 gallons.	A.1 Restore fuel oil volume to within limits.	48 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. --------- NOTE --------- Only applicable to Unit 1. ---------------------- FOST 21 with fuel oil volume < 85,000 gallons.	B.1	Verify combined available fuel oil volume of FOST 21 and OPERABLE FOST 11 ≥ 72,860 gallons.	1 hour
	<u>AND</u>		
	B.2	Verify combined available fuel oil volume of FOST 21 and OPERABLE FOST 11 ≥ 85,000 gallons.	48 hours <u>AND</u> Once per 31 days thereafter

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. -------- NOTE -------- Only applicable to Unit 2. -------------------- FOST 21 with fuel oil volume < 85,000 gallons.	C.1 Verify combined available fuel oil volume of FOST 21 and OPERABLE FOST 11 ≥ 72,860 gallons.	1 hour
	<u>AND</u>	
	C.2 ------- NOTES ------- 1. Only applicable during MODE 1, 2, 3, or 4. 2. Only applicable between April 1 and September 30. -------------------- Restore FOST 21 fuel oil volume to within limits.	2 hours
	<u>AND</u>	
	C.3 Restore FOST 21 fuel oil volume 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

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. Required Action and associated Completion Time not met. OR One or more DGs with diesel fuel oil not within limits for reasons other than Condition A, B, C, D, or E.	F.1 Declare associated DG(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.3.1	Verify fuel oil volume of: a. FOST 1A ≥ 49,500 gallons, and b. FOST 21 ≥ 85,000 gallons.	31 days
SR 3.8.3.2	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

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.3.3	Check for and remove accumulated water from each FOST.	92 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources-Operating

LCO 3.8.4 Four channels of DC electrical sources shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One DC channel inoperable due to an inoperable battery and the reserve battery available.	A.1 Replace inoperable battery with reserve battery.	4 hours
B. One DC channel inoperable for reasons other than Condition A.	B.1 Restore DC channel to OPERABLE status.	2 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. __AND__ C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is ≥ 125 V on float charge.	7 days
SR 3.8.4.2	Verify no visible corrosion at battery terminals and connectors. <u>OR</u> Verify battery connection resistance is within limits.	92 days
SR 3.8.4.3	Verify battery cells, cell plates, and racks show no visual indication of physical damage or abnormal deterioration that degrades performance.	18 months
SR 3.8.4.4	Remove visible terminal corrosion and verify battery cell to cell and terminal connections are coated with anti-corrosion material.	18 months
SR 3.8.4.5	Verify battery connection resistance is within limits.	18 months
SR 3.8.4.6	Verify each battery charger supplies ≥ 400 amps at ≥ 125 V for ≥ 30 minutes.	24 months

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.4.7	-------------------NOTE------------------- The modified performance discharge test in SR 3.8.4.8 may be performed in lieu of the service test in SR 3.8.4.7. -- Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.8	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 AND 12 months when battery shows degradation or has reached 85% of the expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached 85% of the expected life with capacity ≥ 100% of manufacturer's rating

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources-Shutdown

LCO 3.8.5 The required channels of DC electrical sources 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 irradiated fuel assemblies.

ACTIONS

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

1. LCO 3.0.3 is not applicable.

2. Performance of Required Actions shall not preclude completion of actions to establish a safe conservative position.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required DC channels inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2.2	Suspend movement of irradiated fuel assemblies. AND	Immediately
	A.2.3	Initiate action to suspend operations involving positive reactivity additions. AND	Immediately
	A.2.4	Initiate action to restore required DC electrical power subsystems to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

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

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Cell Parameters

LCO 3.8.6 Battery cell parameters for the batteries shall be within the limits of Table 3.8.6-1.

<u>AND</u>

Battery cell average electrolyte temperature for the batteries shall be within the required limit.

APPLICABILITY: When associated DC electrical source channels are required to be OPERABLE.

ACTIONS

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

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. __OR__ One or more batteries with average electrolyte temperature of the representative cells < 69°F. __OR__ One or more batteries with one or more battery cell parameters not within Category C limits.	B.1 Declare associated battery inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.6.1	Verify battery cell parameters meet Table 3.8.6-1 Category A limits.	7 days
SR 3.8.6.2	Verify battery cell parameters meet Table 3.8.6-1 Category B limits.	92 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.6.3	Verify average electrolyte temperature of representative cells is ≥ 69°F.	92 days

Table 3.8.6-1 (page 1 of 2)
Battery Surveillance Requirements

PARAMETER	CATEGORY A: LIMITS FOR EACH DESIGNATED PILOT CELL	CATEGORY B: LIMITS FOR EACH CONNECTED CELL	CATEGORY C: LIMITS FOR EACH CONNECTED CELL
Electrolyte Level	> Minimum level indication mark, and ≤ 1/4 inch above maximum level indication mark[a]	> Minimum level indication mark, and ≤ 1/4 inch above maximum level indication mark[a]	Above top of plates, and not overflowing
Individual Cell Float Voltage	≥ 2.13 V	≥ 2.13 V	≥ 2.08 V
Specific Gravity[b] [c]	≥ 1.200	≥ 1.195 AND Average of all connected cells ≥ 1.205	Not more than 0.020 below average connected cells AND Average of all connected cells ≥ 1.195

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

(b) Corrected for electrolyte temperature and level. Level correction is not required, however, when battery charging current is < 1 amp when on float charge.

Table 3.8.6-1 (page 2 of 2)
Battery Surveillance Requirements

(c) A battery charging current of < 1 amp when on float charge is acceptable for meeting specific gravity limits following a battery recharge, for a maximum of 7 days. When charging current is used to satisfy specific gravity requirements, specific gravity of each connected cell shall be measured prior to expiration of the 7 day allowance.

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters-Operating

LCO 3.8.7 Four inverters shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required inverter inoperable.	A.1	--------NOTE------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems-Operating" with any vital bus de-energized. -------------------- Restore inverter to OPERABLE status.	24 hours
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 Inverter(s) 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 irradiated fuel assemblies.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more required inverters inoperable.	A.1	Declare affected required feature(s) inoperable.	Immediately
	<u>OR</u>		
	A.2.1	Suspend CORE ALTERATIONS.	Immediately
		<u>AND</u>	
	A.2.2	Suspend movement of irradiated fuel assemblies.	Immediately
		<u>AND</u>	

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2.3	Initiate action to suspend operations involving positive reactivity additions.	Immediately
		<u>AND</u>	
	A.2.4	Initiate action to restore required inverters to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

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

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems-Operating

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

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more AC electrical power distribution subsystems inoperable.	A.1 Restore AC electrical power distribution subsystems to OPERABLE status.	8 hours AND 16 hours from discovery of failure to meet Limiting Condition for Operation
B. One or more AC vital bus subsystem(s) inoperable.	B.1 Restore AC vital bus subsystems to OPERABLE status.	2 hours AND 16 hours from discovery of failure to meet Limiting Condition for Operation

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One DC electrical power distribution subsystem inoperable.	C.1 Restore DC electrical power distribution subsystem to OPERABLE status.	2 hours AND 16 hours from discovery of failure to meet Limiting Condition for Operation
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
E. Two or more electrical power distribution subsystems inoperable that result in a loss of function.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.9.1	Verify correct breaker alignments and voltage to AC, DC, and AC vital bus electrical power distribution subsystems.	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 subsystems shall be OPERABLE to support equipment required to be OPERABLE.

APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

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

1. LCO 3.0.3 is not applicable.

2. Performance of Required Actions shall not preclude completion of actions to establish a safe conservative position.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required AC, DC, or AC vital bus electrical power distribution subsystems inoperable.	A.1 Declare associated supported required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2.2	Suspend movement of irradiated fuel assemblies.	Immediately
		<u>AND</u>	
	A.2.3	Initiate action to suspend operations involving positive reactivity additions.	Immediately
		<u>AND</u>	
	A.2.4	Initiate actions to restore required AC, DC, and AC vital bus electrical power distribution subsystems to OPERABLE status.	Immediately
		<u>AND</u>	
	A.2.5	Declare associated required shutdown cooling subsystem(s) inoperable and not in operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.10.1	Verify correct breaker alignments and voltage to required AC, DC, and AC vital bus electrical power distribution subsystems.	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 pool 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.	Immediately
	<u>AND</u>	
	A.2 Suspend positive reactivity additions.	Immediately
	<u>AND</u>	
	A.3 Initiate action to restore boron concentration to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.1.1	Verify boron concentration is within the limit specified in the COLR.	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 required SRM inoperable.	A.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2 Suspend positive reactivity additions.	Immediately
B. Two required SRMs inoperable.	B.1 Initiate action to restore one SRM to OPERABLE status.	Immediately
	<u>AND</u>	
	B.2 Perform SR 3.9.1.1.	Once per 12 hours

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;

b. One door in the emergency air lock is closed;

---------------------------- NOTE ----------------------------
The emergency air lock temporary closure device can be used in place of an emergency air lock door.
----

c. The personnel air lock shall be either:

1. closed by one personnel air lock door, or

2. capable of being closed by an OPERABLE personnel air lock door under administrative control when there is 23 feet of water above the fuel.

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

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

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

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment penetrations not in required status.	A.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2 Suspend movement of irradiated 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 --------------------------

1. The required SDC loop may be not in operation for ≤ 1 hour per 8 hour period, provided no operations are permitted that would cause reduction of the Reactor Coolant System boron concentration.

2. The shutdown cooling pumps may be removed from operation during the time required for local leak rate testing of containment penetration number 41 pursuant to the requirements of SR 3.6.1.1 or to permit maintenance on valves located in the common SDC suction line, provided:

   a. no operations are permitted that would cause a reduction to Reactor Coolant System boron concentration,

   b. CORE ALTERATIONS are suspended, and

   c. all containment penetrations providing direct access from containment atmosphere to outside atmosphere are closed.

APPLICABILITY: MODE 6 with the water level ≥ 23 ft above the top of the irradiated fuel assemblies seated in the reactor vessel.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required SDC loop inoperable or not in operation.	A.1	Initiate action to restore SDC loop to OPERABLE status and operation.	Immediately
	<u>AND</u>		
	A.2	Suspend operations involving a reduction in reactor coolant boron concentration.	Immediately
	<u>AND</u>		
	A.3	Suspend loading of irradiated fuel assemblies in the core.	Immediately
	<u>AND</u>		
	A.4	Close all containment penetrations providing direct access from containment atmosphere to outside atmosphere.	4 hours

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 ≥ 1500 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 ----------------------------
One SDC loop may be replaced by one spent fuel pool cooling loop provided it is lined up to provide cooling flow to irradiated fuel in the reactor core and the core heat generation rate is less than the heat removal capacity of the spent fuel cooling loop.

APPLICABILITY: MODE 6 with the water level < 23 ft above the top of the irradiated fuel assemblies seated in the reactor vessel.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SDC loop inoperable.	A.1 Initiate action to restore SDC loop to OPERABLE status.	Immediately
	<u>OR</u>	
	A.2 Initiate action to establish ≥ 23 ft of water above the top of irradiated fuel assemblies seated in the reactor vessel.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. No SDC loop OPERABLE or in operation.	B.1 Suspend operations involving a reduction in reactor coolant boron concentration.	Immediately
	<u>AND</u>	
	B.2 Initiate action to restore one SDC loop to OPERABLE status and to operation.	Immediately
	<u>AND</u>	
	B.3 Close all containment penetrations providing direct access from containment atmosphere to outside atmosphere.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.5.1	Verify required SDC loops are OPERABLE and one SDC loop is in operation.	12 hours
SR 3.9.5.2	Verify SDC loop in operation is circulating reactor coolant at a flow rate of ≥ 1500 gpm.	12 hours

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.9.5.3	Verify correct breaker alignment and indicated power available to the required SDC loop components that are not in operation.	7 days

3.9 REFUELING OPERATIONS

3.9.6 Refueling Pool Water Level

LCO 3.9.6 Refueling pool water level shall be maintained ≥ 23 ft above the top of the irradiated fuel assemblies seated in the reactor vessel.

APPLICABILITY: During CORE ALTERATIONS, except during coupling and uncoupling of control element assembly drive shafts,
During movement of irradiated fuel assemblies within containment.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.6.1	Verify refueling pool water level is ≥ 23 ft above the top of the irradiated fuel assemblies seated in the reactor vessel.	24 hours

4.0 DESIGN FEATURES

4.1 Site Location

The site for the Calvert Cliffs Nuclear Power Plant is located on the western shore of the Chesapeake Bay in Calvert County, Maryland, about 10-1/2 miles Southeast of Prince Frederick, Maryland. The site is approximately 45 miles southeast of Washington, DC, and 60 miles south of Baltimore, Maryland. The exclusion area boundary has a minimum radius of 1,150 meters from the center of the plant.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 217 fuel assemblies. Each assembly shall consist of a matrix of Zircalloy or ZIRLO fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions. For Unit 1 Cycles 13, 14, and 15 only, advanced cladding material may be used in four lead test assemblies as described in an approved temporary exemption dated November 28, 1995.

4.2.2 Control Element Assemblies

The reactor core shall contain 77 control element assemblies.

4.0 DESIGN FEATURES

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 4.52 weight percent;

b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.7.2 of the Updated Final Safety Analysis Report (UFSAR);

c. A nominal 10-3/32-inch center-to-center distance between fuel assemblies placed in the high density fuel storage racks;

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

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

b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.7.1 of the UFSAR;

c. $k_{eff} \leq 0.95$ if moderated by aqueous foam, which includes an allowance for uncertainties as described in Section 9.7.1. of the UFSAR; and

d. A nominal 18-inch center-to-center distance between fuel assemblies placed in the storage racks.

4.0 DESIGN FEATURES

4.3.2 Drainage

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 63 ft.

4.3.3 Capacity

The spent fuel storage pool is designed and shall be maintained with a storage capacity, for both Units 1 and 2, limited to no more than 1830 fuel assemblies.

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

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

The plant manager or his designee shall approve, prior to implementation, each proposed test, experiment, or modification to systems or equipment that affects nuclear safety.

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

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

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

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

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

c. The Vice President-Nuclear Energy shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety; and

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

5.2 Organization

5.2.2 Unit Staff

The unit staff organization shall include the following:

a. A total of three non-licensed operators shall be assigned to the Units 1 and 2 shift crews.

b. Those licensed operators counted toward minimum shift crew composition required by 10 CFR 50.54(m)(2)(i) shall be licensed for both units.

c. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i), 5.2.2.a, and 5.2.2.g 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 onsite 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. The amount of overtime worked by unit staff members performing safetyrelated functions shall be limited and controlled in accordance with the Nuclear Regulatory Commission (NRC) Policy Statement on working hours (Generic Letter 82-12).

f. The operations manager shall hold or have held an SRO license at Calvert Cliffs. The General Supervisor-Nuclear Plant Operations shall hold an SRO license.

5.2 Organization

g. One Shift Technical Advisor (STA) shall be assigned to the shift crew when either unit is in MODE 1, 2, 3, or 4, and shall be filled as follows:

1. By the Shift Supervisor (SS) or an on-shift SRO license holder, provided the individual meets the Commission Policy Statement on Engineering Expertise on Shift; or

2. By an individual with a Bachelors Degree or equivalent in a scientific or engineering discipline with specific training in plant design, and response and analysis of the plant transient and accidents; or

3. By an SRO license holder previously approved by the Nuclear Regulatory Commission as an exception to the minimum STA education requirements of Specification 5.2.2.g.2, provided the following conditions are met:

   i. With both units in MODE 1, 2, 3, or 4, the STA shall be an SRO license holder in addition to the two SRO license holders required,

   ii. With one unit in MODE 1, 2, 3, or 4, and the other unit in MODE 5 or 6, the STA shall be an SRO license holder other than the SS, and

   iii. With one unit in MODE 1, 2, 3, or 4, and the other unit defueled, the STA shall be an SRO license holder in addition to the one SRO license holder required.

5.0 ADMINISTRATIVE CONTROLS

5.3 Unit Staff Qualifications

5.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971, for comparable positions, except for the Radiation Protection Manager, who shall meet or exceed the requirements of Regulatory Guide 1.8, September 1975, and the Shift Technical Advisor, who shall meet the requirements of Specification 5.2.2.g.

5.0 ADMINISTRATIVE CONTROLS

5.4 Procedures

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

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

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

c. Quality assurance for effluent and environmental monitoring;

d. Fire Protection Program implementation; and

e. All programs specified in Specification 5.5.

5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

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

5.5.1 Offsite Dose Calculation Manual

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

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

c. Licensee initiated changes to the ODCM:

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

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

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

2. Shall become effective after the approval of the plant manager; and

5.5 Programs and Manuals

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

5.5.2 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include Containment Spray, Safety Injection, and Chemical and Volume Control. The program shall include the following:

a. Preventive maintenance and periodic visual inspection requirements; and

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

5.5.3 Post-Accident Sampling

This program provides controls that ensure the capability to obtain and analyze reactor coolant, radioactive gases, and particulates in plant gaseous effluents and containment atmosphere samples under accident conditions. The program shall include the following:

a. Training of personnel;

b. Procedures for sampling and analysis; and

5.5 Programs and Manuals

c. Provisions for maintenance of sampling and analysis equipment.

5.5.4 Radioactive Effluent Controls Program

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

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

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

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

d. Limitations on the annual and quarterly doses or dose commitment to a member of the public from radioactive materials in liquid effluents released from each unit to unrestricted areas to be limited:

   1. During any calendar quarter: Less than or equal to 3 mrems to the total body, and to less than or equal to 10 mrems to any organ; and

   2. During any calendar year: Less than or equal to 6 mrems to the total body, and to less than or equal to 20 mrems to any organ;

5.5 Programs and Manuals

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 Radwaste Treatment System to ensure that appropriate portions of this system are used to reduce releases of radioactivity when the projected doses to unrestricted areas exceeds 0.36 mrem to the total body, or 1.20 mrem to any organ in a 92-day period;

g. Limitations on the functional capability and use of the Gaseous Radwaste Treatment System and the Ventilation Exhaust Treatment System to ensure that appropriate portions of these systems are used to reduce releases of radioactivity when the calculated doses to unrestricted areas exceeds 1.20 mrad for gamma radiation, and 2.40 mrad for beta radiation in a 92-day period;

h. Limitations on the functional capability and use of the Ventilation Exhaust Treatment System to ensure that appropriate portions of this system are used to reduce releases of radioactivity when the calculated doses due to gaseous releases to unrestricted areas exceeds 1.8 mrem to any organ in a 92-day period;

i. Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the site boundary, to be limited:

   1. For noble gases: Less than or equal to 500 mrems/yr to the total body, and less than or equal to 3000 mrems/yr to the skin; and

   2. For Iodine-131 and for all radionuclides in particulate form with half lives greater than 8 days: Less than or equal to 1500 mrems/yr to any organ;

5.5 Programs and Manuals

j. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents to areas beyond the site boundary, to be limited to:

1. During any calendar quarter: Less than or equal to 10 mrads for gamma radiation, and less than or equal to 20 mrads for beta radiation; and

2. During any calendar year: Less than or equal to 20 mrads for gamma radiation, and less than or equal to 40 mrads for beta radiation;

k. Limitations on the annual and quarterly doses to a member of the public from Iodine-131 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, to be limited:

1. During any calendar quarter: Less than or equal to 15 mrems to any organ:

2. During any calendar year: Less than or equal to 30 mrems to any organ; and

3. Less than 0.1% of the limits of 5.5.4.k(1) and (2) as a result of burning-contaminated oil; and

l. 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 to be limited to less than or equal to 25 mrems to the total body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrems.

5.5.5 Component Cyclic or Transient Limit

This program provides controls to track the UFSAR, Section 4.1 cyclic and transient occurrences to ensure that components are maintained within the design limits.

5.5 Programs and Manuals

5.5.6 Concrete Containment Tendon Surveillance Program

This program provides controls for monitoring any tendon degradation in pre-stressed concrete containments, including effectiveness of its corrosion protection medium, to ensure containment structural integrity. The program shall include baseline measurements prior to initial operation. The Tendon Surveillance Program, inspection frequencies, and acceptance criteria shall be in accordance with Regulatory Guide 1.35, Revision 2, 1976.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Tendon Surveillance Program inspection frequencies.

5.5.7 Reactor Coolant Pump Flywheel Inspection Program

This program shall provide for the inspection of each reactor coolant pump flywheel per the recommendations of regulatory position c.4.b of Regulatory Guide 1.14, Revision 1, August 1975.

5.5.8 Inservice Testing Program

This program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components including applicable supports. The program shall include the following:

5.5 Programs and Manuals

a. Testing frequencies specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as follows:

ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice testing activities	Required Frequencies for performing inservice testing activities
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Every 9 months	At least once per 276 days
Yearly or annually	At least once per 366 days
Biennially or every 2 years	At least once per 731 days

b. The provisions of SR 3.0.2 are applicable to the above required Frequencies for performing inservice testing activities;

c. The provisions of SR 3.0.3 are applicable to inservice testing activities; and

d. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical Specification.

5.5.9 Steam Generator Tube Surveillance Program

The provisions of SR 3.0.2 are applicable to the SG Tube Surveillance Program except as specified for individual requirements. This program provides controls for the inservice inspection of steam generator tubes to ensure that structural

5.5 Programs and Manuals

integrity of this portion of the Reactor Coolant System is maintained. The program shall contain the requirements listed below.

a. Steam Generator Sample Selection and Inspection - The minimum number of steam generators to be inspected shall be determined as specified in Table 5.5.9-1.

b. Steam Generator Tube Sample Selection and Inspection - The steam generator tube minimum sample size, inspection result classification, and the corresponding action required shall be as specified in Tables 5.5.9-2 and 5.5.9-3. The inservice inspection of steam generator tubes shall be performed at the Frequencies specified in Specification 5.5.9.c and the inspected tubes shall be verified acceptable per the acceptance criteria of Specification 5.5.9.d. When applying the exceptions of 5.5.9.b.1 through 5.5.9.b.3, previous defects or imperfections in the area repaired by sleeving are not considered an area requiring reinspection. The tubes selected for each inservice inspection shall include at least 3% of the total number of tubes in all steam generators; the tubes selected for these inspections shall be selected on a random basis except:

1. Where experience in similar plants with similar water chemistry indicates critical areas to be inspected, then at least 50% of the tubes inspected shall be from these critical areas.

2. The first inservice inspection (subsequent to the preservice inspection) of each steam generator shall include:

   i. All nonplugged tubes that previously had detectable wall penetrations (> 20%); and

   ii. Tubes in those areas where experience has indicated potential problems.

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3. The second and third inservice inspections may be less than a full tube inspection by concentrating (selecting at least 50% of the tubes to be inspected) the inspection on those areas of the tube sheet array and on those portions of the tubes where tubes with imperfections were previously found.

The results of each sample inspection shall be classified into one of the three categories specified below. In all inspections, previously degraded tubes must exhibit significant (> 10%) further wall penetrations to be included in the percentage calculations.

Category	Inspection Results
C-1	Less than 5% of the total tubes inspected are degraded tubes and none of the inspected tubes are defective.
C-2	One or more tubes, but not more than 1% of the total tubes inspected, are defective, or between 5% and 10% of the total tubes inspected are degraded tubes.
C-3	More than 10% of the total tubes inspected are degraded tubes, or more than 1% of the inspected tubes are defective.

c. Inspection Frequencies - The above required inservice inspections of steam generator tubes shall be performed at the following Frequencies:

1. The first inservice inspection shall be performed after 6 Effective Full Power Months, but within 24 calendar months of initial criticality. Subsequent inservice inspections shall be performed at intervals of not less than 12 nor more than 24 calendar months after the previous inspection. If at least 20 percent of the

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tubes were inspected and the results were in the C-1 Category, or if at least 40 percent of the tubes were inspected and were in the C-2 Category during the previous inspection, the next inspection may be extended up to a maximum of 30 months in order to correspond with the next refueling outage if the results of the two previous inspections were not in the C-3 Category. However, if the results of either of the previous two inspections were in the C-2 Category, an engineering assessment shall be performed before operation beyond 24 months and shall provide assurance that all tubes will retain adequate structural margins against burst throughout normal operating, transient, and accident conditions until the end of the fuel cycle or 30 months, whichever occurs first. If two consecutive inspections following service under all-volatile treatment conditions, not including the preservice inspection result in all inspection results falling into the C-1 category or if two consecutive inspections demonstrate that previously observed degradation has not continued and no additional degradation has occurred, the inspection interval may be extended to a maximum of once per 40 months.

2. If the inservice inspection results of a steam generator conducted in accordance with Tables 5.5.9-2 and 5.5.9-3 at 40-month intervals fall in Category C-3, the inspection frequency shall be increased to at least once per 20 months. The increase in inspection frequency shall apply until the subsequent inspections satisfy the criteria of Specification 5.5.9.c.1; the interval may then be extended to a maximum of once per 30 or 40 months, as applicable.

3. Additional, unscheduled inservice inspections shall be performed on each steam generator in accordance with the first sample inspection specified in Tables 5.5.9-2 and

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5.5.9-3 during the shutdown subsequent to any of the following conditions:

i. Primary-to-secondary tube leaks (not including leaks originating from tube-to-tube sheet welds) in excess of the limits of Specification 3.4.13;

ii. A seismic occurrence greater than the Operating Basis Earthquake;

iii. A loss-of-coolant accident requiring actuation of the engineered safeguards; or

iv. A main steam line or feedwater line break.

4. The provisions of Specification SR 3.0.2 do not apply for extending the Frequency for performing inservice inspections as stated in Specifications 5.5.9.c.1 and 5.5.9.c.2.

d. Acceptance Criteria - As used in this Specification:

1. Tubing or Tube means that portion of the tube or sleeve which forms the primary system to secondary system pressure boundary.

2. Imperfection means an exception to the dimension, finish, or contour of a tube from that required by fabrication drawings or specifications. Eddy-current testing indications below 20% of the nominal tube wall thickness, if detectable, may be considered as imperfections.

3. Degradation means a service-induced cracking, wastage, wear, or general corrosion occurring on either inside or outside of a tube.

4. Degraded Tube means a tube containing imperfections ≥ 20% of the nominal wall thickness caused by degradation.

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5. % Degradation means the percentage of the tube wall thickness affected or removed by degradation.

6. Defect means an imperfection of such severity that it exceeds the plugging or repair limit. A tube containing a defect is defective. Any tube which does not permit the passage of the eddy-current inspection probe shall be deemed a defective tube.

7. Plugging or Repair Limit means the imperfection depth at or beyond which the tube shall be removed from service by plugging, or repaired by sleeving in the affected area because it may become unserviceable prior to the next inspection. The plugging or repair limit imperfection depths are specified in percentage of nominal wall thickness as follows:

i.	original tube wall	40%
ii.	Westinghouse laser welded sleeve wall	40%
iii.	ABB-Combustion Engineering leak tight sleeve wall	28%
iv.	ABB-Combustion Engineering Alloy 800 leak-limiting sleeve wall	35%

8. Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break as specified in 5.5.9.c.3 above.

9. Tube Inspection means an inspection of the steam generator tube from the point of entry (hot leg side) completely around the U-bend to the top support of the cold leg.

-shall be implemented during the spring 2000 refueling outage

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10. Tube Repair refers to a process that reestablishes tube serviceability. Acceptable tube repairs will be performed by the following processes:

    i. Westinghouse Laser Welded Sleeving as described in the proprietary Westinghouse Reports WCAP-13698, Revision 2, "Laser Welded Sleeves for 3/4 Inch Diameter Tube Feedring-Type and Westinghouse Preheater Steam Generators, Generic Sleeving Report," April 1995; and WCAP-14469, "Specific Application of Laser Welded Sleeving for the Calvert Cliffs Power Plant Steam Generators," November 1995.

    ii. ABB-Combusting Engineering Leak Tight Sleeving as described in the proprietary ABB-Combustion Engineering Report CEN-630-P, Revision 01, "Repair of 3/4" O.D. Steam Generator Tubes Using Leak Tight Sleeves," August 1996. A post-weld heat treatment during installation will be performed.

    iii. ABB-Combustion Engineering Alloy 800 leak-limiting sleeving as described in the Proprietary ABB Combustion Engineering Report CEN-633-P, Revision 03-P, "Steam Generator Tube Repair For Combustion Engineering Designed Plants with 3/4-.048 Inch Wall Inconel 600 Tubes Using Leak Limiting Alloy 800 Sleeves, " October 1998.

    Tube repair includes the removal of plugs that were previously installed as a corrective or preventive measure. A tube inspection per 5.5.9.d.9 is required prior to returning previously plugged tubes to service.

e. Surveillance Completion - The Steam Generator Tube Surveillance Program is met after completing the corresponding actions (plug or repair all tubes exceeding the plugging limit and all tubes containing through-wall cracks) required by Tables 5.5.9-2 and 5.5.9-3.

-shall be implemented during the spring 2000 refueling outage

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Table 5.5.9-1
Minimum Number of Steam Generators to be Inspected During Inservice Inspection

Preservice Inspection	No			Yes		
No. Steam Generators per Unit	Two	Three	Four	Two	Three	Four
First Inservice Inspection	All			One	Two	Two
Second & Subsequent Inservice Inspections	One[1]			One[1]	One[2]	One[3]

Table Notation:

1 The inservice inspection may be limited to one steam generator on a rotating schedule encompassing 3 N % of the tubes (where N is the number of steam generators in the plant) if the results of the first or previous inspections indicate that all steam generators are performing in a like manner. Note that under some circumstances, the operating conditions in one or more steam generators may be found to be more severe than those in other steam generators. Under such circumstances, the sample sequence shall be modified to inspect the most severe conditions.

2 The other steam generator not inspected during the first inservice inspection shall be inspected. The third and subsequent inspections should follow the instructions described in 1 above.

3 Each of the other two steam generators not inspected during the first inservice inspections shall be inspected during the second and third inspections. The fourth and subsequent inspections shall follow the instructions described in 1 above.

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Table 5.5.9-2
Steam Generator Tube Inspection

1ST SAMPLE INSPECTION			2ND SAMPLE INSPECTION		3RD SAMPLE INSPECTION	
Sample Size	Result	Action Required	Result	Action Required	Result	Action Required
A minimum of S Tubes per steam generator	C-1	None	N/A	N/A	N/A	N/A
	C-2	Plug or repair defective tubes and inspect additional 2S tubes in this steam generators	C-1	None	N/A	N/A
			C-2	Plug or repair defective tubes and inspect additional 4S tubes in this steam generator.	C-1	None
					C-2	Plug or repair defective tubes
					C-3	Perform action for C-3 result of first sample
			C-3	Perform action for C-3 result of first sample	N/A	N/A
	C-3	Inspect all tubes in this steam generator, plug or repair defective tubes and inspect 2S tubes in each other steam generator. 24 hour verbal notification to NRC with written follow-up pursuant to Specification 5.6.9.c	All other steam generators are C-1	None	N/A	N/A
			Same steam generators C-2 but no additional steam generator are C-3	Perform action for C-2 result of second sample	N/A	N/A
			Additional steam generator is C-3	Inspect all tubes in each steam generator and plug or repair defective tubes. 24 hour verbal notification to NRC with written follow-up pursuant to Specification 5.6.9.c	N/A	N/A

$S = 3 \frac{N}{n} \%$ Where N is the number of steam generators in the unit, and n is the number of steam generators inspected during an inspection.

Table 5.5.9-3
Steam Generator Repaired Tube Inspection

1ST SAMPLE INSPECTION			2ND SAMPLE INSPECTION	
Sample Size	Result	Action Required	Result	Action Required
A Minimum of 20% of repaired tubes[1][2]	C-1	None	N/A	N/A
	C-2	Plug defective repaired tubes and inspect 100% of the repaired tubes in this SG.	C-1	None
			C-2	Plug defective repaired tubes
			C-3	Perform action for C-3 result of first sample
	C-3	Inspect all repaired tubes in this SG, plug defective tubes and inspect 20% of the repaired tubes in the other SG. 24-Hour verbal notification to NRC with written follow-up, pursuant to 10 CFR 50.4	Other SG is C-1	None
			Other SG is C-2	Perform action for C-2 result of first sample
			Other SG is C-3	Inspect all repaired tubes in each SG and plug defective tubes. 24-hour verbal notification to NRC with written follow-up, pursuant to 10 CFR 50.4

(1) Each repair method is considered a separate population for determination of scope expansion.
(2) The inspection of repaired tubes may be performed on tubes from either SG based on outage plans.

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5.5.10 Secondary Water Chemistry Program

This program provides controls for monitoring secondary water chemistry to inhibit steam generator tube degradation and low pressure turbine disc stress corrosion cracking. The program shall include:

a. Identification of a sampling schedule for the critical variables and control points for these variables;

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

c. Identification of process sampling points which shall include monitoring the discharge of the condensate pumps for evidence of condenser in leakage;

d. Procedures for the recording and management of data;

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

f. A procedure identifying the authority responsible for the interpretation of the data and the sequence and timing of administrative events, which are required to initiate corrective action.

5.5.11 Ventilation Filter Testing Program

A program shall be established to implement the following required testing of engineered safety feature (ESF) filter ventilation systems. Tests described in Specifications 5.5.11.a and 5.5.11.b shall be performed once per 18 months for ventilation systems other than the Iodine Removal System (IRS) and 24 months for the IRS; after each complete or partial replacement of the high efficiency particulate air (HEPA) filter bank or charcoal adsorber bank; after any structural maintenance on the HEPA filter or charcoal adsorber housing; and following painting, fire, or

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chemical release in any ventilation zone communicating with the system.

Tests described in Specification 5.5.11.c shall be performed once per 18 months for ventilation systems other than the IRS and 24 months for the IRS; after 720 hours of system operation; after any structural maintenance on the HEPA filter or charcoal adsorber housing; and following painting, fire, or chemical release in any ventilation zone communicating with the system.

Tests described in Specification 5.5.11.d shall be performed once per 18 months for ventilation systems other than the IRS and 24 months for the IRS.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Ventilation Filter Testing Program test frequencies.

a. Demonstrate for each of the ESF systems that an inplace test of the HEPA filters shows a penetration and system bypass ≤ 1.0% when tested in accordance with Regulatory Positions C.5.a and C.5.c of Regulatory Guide 1.52, Revision 2, and ANSI N510-1975, at the system flowrate specified as follows ± 10%:

ESF Ventilation System	Flowrate
Control Room Emergency Ventilation System (CREVS)	2,000 cfm
Emergency Core Cooling System (ECCS) Pump Room Exhaust Filtration System (PREFS)	3,000 cfm
Penetration Room Exhaust Ventilation System (PREVS)	2,000 cfm
Spent Fuel Pool Exhaust Ventilation System (SFPEVS)	32,000 cfm
IRS	20,000 cfm

b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass ≤ 1.0% when tested in accordance with Regulatory Positions C.5.a and C.5.d of Regulatory Guide 1.52,

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Revision 2, and ANSI N510-1975, at the system flowrate specified as follows ± 10%:

ESF Ventilation System	Flowrate
CREVS	2,000 cfm
ECCS PREFS	3,000 cfm
PREVS	2,000 cfm
SFP Ventilation System	32,000 cfm
IRS	20,000 cfm

c. Demonstrate for each of the ESF systems within 31 days after removal that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, shows the methyl iodide (elemental iodine for the IRS) penetration less than or equal to the value specified below when tested in accordance with ANSI N510-1975 and the testing protocol of ANSI D3803-89 at a temperature of ≤ 30°C (130°C for the IRS) and greater than or equal to the relative humidity specified as follows:

ESF Ventilation System	Penetrations	RH
CREVS	10%	95%
ECCS PREFS	10%	95%
PREVS	10%	95%
SFP Ventilation System	10%	95%
IRS	5%	95%

d. For each of the ESF systems, demonstrate the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below when tested in accordance with Regulatory Guide 1.52,

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Revision 2, and ANSI N510-1975 at the system flowrate specified as follows ± 10%:

ESF Ventilation System	Delta P	Flowrate
CREVS	4 inwg	2,000 cfm
ECCS PREFS	4 inwg	3,000 cfm
PREVS	6 inwg	2,000 cfm
SFP Ventilation System	4 inwg	32,000 cfm
IRS	6 inwg	20,000 cfm

5.5.12 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides control for potentially explosive gas mixtures contained in the Waste Gas Holdup System and the quantity of radioactivity contained in gas storage tanks. The gaseous radioactivity quantities shall be determined following the methodology in the ODCM.

The program shall include:

a. The limits for concentrations of oxygen in the Waste Gas Holdup 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 gas storage tank is less than or equal to 58,500 curies noble gases (considered as Xe-133).

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.

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5.5.13 Diesel Fuel Oil Testing Program

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

a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:

   1. An American Petroleum Institute gravity or an absolute specific gravity within limits,

   2. A flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and

   3. Water and sediment ≤ 0.05%.

b. Within 31 days following addition of new fuel oil to the storage tanks, verify that the properties of the new fuel oil, other than those addressed in a., above, are within limits for ASTM 2D fuel oil; and

c. Total particulate concentration of the fuel oil, when determined by gravimetric analysis based on ASTM D2276-1989, is ≤ 10 mg/l when tested every 92 days.

d. The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Frequencies.

5.5.14 Technical Specifications Bases Control Program

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

a. Changes to the Bases of the Technical Specifications shall be made under appropriate administrative controls and reviews.

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b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve either of the following:

   1. A change in the Technical Specifications incorporated in the license; or

   2. A change to the UFSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.

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

d. Proposed changes that meet the criteria of Specification 5.5.14b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.15 Safety Function Determination Program (SFDP)

This program ensures loss of safety function is detected and appropriate actions taken. Upon entry into Limiting Condition for Operation (LCO) 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate limitations and remedial or compensatory actions may be identified to be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6. The SFDP shall contain the following:

a. Provisions for cross-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;

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

d. Other appropriate limitations and remedial or compensatory actions.

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

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

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

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

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

5.5.16 Containment Leakage Rate Testing Program

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

The peak calculated containment internal pressure for the design basis loss-of-coolant accident, P_a, is 49.4 psig. The containment design pressure is 50 psig.

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The maximum allowable containment leakage rate, L_a, shall be 0.20 percent of containment air weight per day at P_a.

Leakage rate acceptance criteria are:

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

b. Air lock testing acceptance criteria are:

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

  2. For each door, leakage rate is $\leq 0.0002\ L_a$ when pressurized to ≥ 15 psig.

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

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

5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

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

5.6.1 Occupational Radiation Exposure Report

-------------------------------NOTE-------------------------------
A single submittal may be made for both units, but shall not include the occupational radiation exposure from the Independent Spent Fuel Storage Installation. The submittal should combine sections common to both units at the station.

A tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) receiving exposures > 100 mrem/yr and their associated man rem exposure according to work and job functions (e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance, waste processing, and refueling). This tabulation supplements the requirements of 10 CFR 20.2206. The dose assignments to various duty functions may be estimated based on pocket dosimeter, electronic personal dosimeter, or thermoluminescent dosimeter. Small exposures totaling < 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources should be assigned to specific major work functions. The report shall be submitted by April 30 of each year.

5.6.2 Annual Radiological Environmental Operating Report

-------------------------------NOTE-------------------------------
A single submittal may be made for both units. The submittal should combine sections common to both 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

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of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the ODCM, and in 10 CFR Part 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 results that represent collocated dosimeters in relation to the NRC thermoluminescent dosimeter 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.

5.6.3 <u>Radioactive Effluent Release Report</u>

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

The Radioactive Effluent Release Report covering the operation of the unit shall be submitted in accordance with 10 CFR 50.36a, as modified by approved exemptions. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the units. The material provided shall be consistent with the objectives outlined in the ODCM, Process Control Program, and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

5.6.4 Monthly Operating Reports

Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis no later than the 15th of each month following the calendar month covered by the report.

5.6.5 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

3.1.1	SHUTDOWN MARGIN
3.1.3	Moderator Temperature Coefficient
3.1.4	CEA Alignment
3.1.6	Regulating Control Element Assembly Insertion Limit
3.2.1	Linear Heat Rate
3.2.2	Total Planar Radial Peaking Factor
3.2.3	Total Integrated Radial Peaking Factor
3.2.5	AXIAL SHAPE INDEX
3.3.1	RPS Instrumentation - Operating
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:

1. CENPD-199-P, Latest Approved Revision, "C-E Setpoint Methodology: C-E Local Power Density and DNB LSSS and LCO Setpoint Methodology for Analog Protection Systems," January 1986

2. CEN-124(B)-P, "Statistical Combination of Uncertainties Methodology Part 1: C-E Calculated Local Power Density and Thermal Margin/Low Pressure LSSS for Calvert Cliffs Units I and II," December 1979

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3. CEN-124(B)-P, "Statistical Combination of Uncertainties Methodology Part 2: Combination of System Parameter Uncertainties in Thermal Margin Analyses for Calvert Cliffs Units 1 and 2," January 1980

4. CEN-124(B)-P, "Statistical Combination of Uncertainties Methodology Part 3: C-E Calculated Departure from Nucleate Boiling and Linear Heat Rate Limiting Conditions for Operation for Calvert Cliffs Units 1 and 2," March 1980

5. CEN-191(B)-P, "CETOP-D Code Structure and Modeling Methods for Calvert Cliffs Units 1 and 2," December 1981

6. Letter from Mr. D. H. Jaffe (NRC) to Mr. A. E. Lundvall, Jr. (BG&E), dated June 24, 1982, Unit 1 Cycle 6 License Approval (Amendment No. 71 to DPR-53 and SER)

7. CEN-348(B)-P, "Extended Statistical Combination of Uncertainties," January 1987

8. Letter from Mr. S. A. McNeil, Jr. (NRC) to Mr. J. A. Tiernan (BG&E), dated October 21, 1987, Docket Nos. 50-317 and 50-318, "Safety Evaluation of Topical Report CEN-348(B)-P, Extended Statistical Combination of Uncertainties"

9. CENPD-161-P-A, "TORC Code, A Computer Code for Determining the Thermal Margin of a Reactor Core," April 1986

10. CENPD-162-P-A, Latest Approved Revision, "Critical Heat Flux Correlation of C-E Fuel Assemblies with Standard Spacer Grids Part 1, Uniform Axial Power Distribution"

11. CENPD-207-P-A, Latest Approved Revision, "Critical Heat Flux Correlation of C-E Fuel Assemblies with Standard Spacer Grids Part 2, Non-Uniform Axial Power Distribution"

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12. CENPD-206-P-A, Latest Approved Revision, "TORC Code, Verification and Simplified Modeling Methods"

13. CENPD-225-P-A, Latest Approved Revision, "Fuel and Poison Rod Bowing"

14. CENPD-266-P-A, Latest Approved Revision, "The ROCS and DIT Computer Code for Nuclear Design"

15. CENPD-275-P-A, Latest Approved Revision, "C-E Methodology for Core Designs Containing Gadolinia - Urania Burnable Absorbers"

16. CENPD-382-P-A, Latest Approved Revision, "C-E Methodology for Core Designs Containing Erbium Burnable Absorbers"

17. CENPD-139-P-A, Latest Approved Revision, "C-E Fuel Evaluation Model Topical Report"

18. CEN-161-(B)-P-A, Latest Approved Revision, "Improvements to Fuel Evaluation Model"

19. CEN-161-(B)-P, Supplement 1-P, "Improvements to Fuel Evaluation Model," April 1989

20. Letter from Mr. S. A. McNeil, Jr. (NRC) to Mr. J. A. Tiernan (BG&E), dated February 4, 1987, Docket Nos. 50-317 and 50-318, "Safety Evaluation of Topical Report CEN-161-(B)-P, Supplement 1-P, Improvements to Fuel Evaluation Model"

21. CEN-372-P-A, Latest Approved Revision, "Fuel Rod Maximum Allowable Gas Pressure"

22. Letter from Mr. A. E. Scherer (CE) to Mr. J. R. Miller (NRC), dated December 15, 1981, LD-81-095, Enclosure 1-P, "C-E ECCS Evaluation Model Flow Blockage Analysis"

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5.6 Reporting Requirements

23. CENPD-132, Supplement 3-P-A, Latest Approved Revision, "Calculative Methods for the C-E Large Break LOCA Evaluation Model for the Analysis of C-E and W Designed NSSS"

24. CENPD-133, Supplement 5, "CEFLASH-4A, a FORTRAN77 Digital Computer Program for Reactor Blowdown Analysis," June 1985

25. CENPD-134, Supplement 2, "COMPERC-II, a Program for Emergency Refill-Reflood of the Core," June 1985

26. Letter from Mr. D. M. Crutchfield (NRC) to Mr. A. E. Scherer (CE), dated July 31, 1986, "Safety Evaluation of Combustion Engineering ECCS Large Break Evaluation Model and Acceptance for Referencing of Related Licensing Topical Reports"

27. CENPD-135, Supplement 5-P, "STRIKIN-II, A Cylindrical Geometry Fuel Rod Heat Transfer Program," April 1977

28. Letter from Mr. R. L. Baer (NRC) to Mr. A. E. Scherer (CE), dated September 6, 1978, "Evaluation of Topical Report CENPD-135, Supplement 5"

29. CENPD-137, Supplement 1-P, "Calculative Methods for the C-E Small Break LOCA Evaluation Model," January 1977

30. CENPD-133, Supplement 3-P, "CEFLASH-4AS, A Computer Program for the Reactor Blowdown Analysis of the Small Break Loss of Coolant Accident," January 1977

31. Letter from Mr. K. Kniel (NRC) to Mr. A. E. Scherer (CE), dated September 27, 1977, "Evaluation of Topical Reports CENPD-133, Supplement 3-P and CENPD-137, Supplement 1-P"

5.6 Reporting Requirements

32. CENPD-138, Supplement 2-P, "PARCH, A FORTRAN-IV Digital Program to Evaluate Pool Boiling, Axial Rod and Coolant Heatup," January 1977

33. Letter from Mr. C. Aniel (NRC) to Mr. A. E. Scherer, dated April 10, 1978, "Evaluation of Topical Report CENPD-138, Supplement 2-P"

34. Letter from Mr. A. E. Lundvall, Jr. (BG&E) to Mr. J. R. Miller (NRC) dated February 22, 1985, "Calvert Cliffs Nuclear Power Plant Unit 1; Docket No. 50-317, Amendment to Operating License DPR-53, Eighth Cycle License Application"

35. Letter from Mr. D. H. Jaffe (NRC) to Mr. A. E. Lundvall, Jr. (BG&E), dated May 20, 1985, "Safety Evaluation Report Approving Unit 1 Cycle 8 License Application"

36. Letter from Mr. A. E. Lundvall, Jr. (BG&E) to Mr. R. A. Clark (NRC), dated September 22, 1980, "Amendment to Operating License No. 50-317, Fifth Cycle License Application"

37. Letter from Mr. R. A. Clark (NRC) to Mr. A. E. Lundvall, Jr. (BG&E), dated December 12, 1980, "Safety Evaluation Report Approving Unit 1, Cycle 5 License Application".

38. Letter from Mr. J. A. Tiernan (BG&E) to Mr. A. C. Thadani (NRC), dated October 1, 1986, "Calvert Cliffs Nuclear Power Plant Unit Nos. 1 & 2, Docket Nos. 50-317 & 50-318, Request for Amendment"

39. Letter from Mr. S. A. McNeil, Jr. (NRC) to Mr. J. A. Tiernan (BG&E), dated July 7, 1987; Docket Nos. 50-317 and 50-318, Approval of Amendments 127 (Unit 1) and 109 (Unit 2)

40. CENPD-188-A, Latest Approved Revision, "HERMITE: A Multi-Dimensional Space-Time Kinetics Code for PWR Transients"

5.6 Reporting Requirements

41. The power distribution monitoring system referenced in various specifications and the BASES, is described in the following documents:

    i. CENPD-153-P, Latest Approved Revision, "Evaluation of Uncertainty in the Nuclear Power Peaking Measured by the Self-Powered, Fixed Incore Detector System"

    ii. CEN-119(B)-P, "BASSS, Use of the Incore Detector System to Monitor the DNB-LCO on Calvert Cliffs Unit 1 and Unit 2," November 1979

    iii. Letter from Mr. G. C. Creel (BG&E) to NRC Document Control Desk, dated February 7, 1989, "Calvert Cliffs Nuclear Power Plant Unit No. 2; Docket 50-318, Request for Amendment, Unit 2 Ninth Cycle License Application"

    iv. Letter from Mr. S. A. McNeil, Jr. (NRC) to Mr. G. C. Creel (BG&E), dated January 10, 1990, "Safety Evaluation Report Approving Unit 2 Cycle 9 License Application"

42. Letter from Mr. D. G. McDonald, Jr. (NRC) to Mr. R. E. Denton (BGE), dated May 11, 1995, "Approval to Use Convolution Technique in Main Steam Line Break Analysis - Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 (TAC Nos. M90897 and M90898)

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, 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.

5.6 Reporting Requirements

5.6.6 Pressurizer Power-Operated Relief Valve and Safety Valve Report

A report shall be submitted prior to March 1 of each year documenting all failures of and challenges to the pressurizer power-operated relief valves, or safety valves.

5.6.7 Post-Accident Monitoring Report

When a report is required by Condition B or G of LCO 3.3.10, "Post Accident Monitoring Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

5.6.8 Tendon Surveillance Report

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.

5.6.9 Steam Generator Tube Inspection Report

a. Following each inservice inspection of steam generator tubes, the number of tubes plugged or repaired in each steam generator shall be reported to the NRC within 15 days.

b. The complete results of the steam generator tube inservice inspection during the report period shall be submitted to the NRC prior to March 1 of each year. This report shall include:

   1. Number and extent of tubes inspected;

5.6 Reporting Requirements

2. Location and percent of wall-thickness penetration for each indication of an imperfection; and

3. Identification of tubes plugged or repaired.

c. Results of steam generator tube inspections which fall into Category C-3 require verbal notification of the NRC Regional Administrator by telephone within 24 hours prior to resumption of plant operation. The written follow-up of this report shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence and shall be submitted within the next 30 days.

CALVERT CLIFFS

NUCLEAR POWER PLANT

UNIT 1

TECHNICAL SPECIFICATIONS

APPENDIX "B"
TO
LICENSE NO. DPR-53

ENVIRONMENTAL PROTECTION PLAN

(NON-RADIOLOGICAL)

TECHNICAL SPECIFICATIONS

ISSUED BY THE UNITED STATES NUCLEAR REGULATORY COMMISSION

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, the staff considered the environmental impacts associated with the operation of the Calvert Cliffs Plant. Certain environmental issues were identified which required study or license conditions to resolve environmental concerns and to assure adequate protection of the environment. The Appendix B Environmental Technical Specifications issued with the licenses included discharge restrictions and monitoring programs to resolve the issues. Prior to issuance of this EPP, the requirements remaining in the ETS were:

1. Protection of the aquatic environment by limiting the discharge of dissolved solids and acids and bases and an annual inventory of treatment chemicals added or used in the plant. (ETS 2.2.1, 2.2.2)

2. Surveillance programs for fish, crabs and oysters, and water quality to establish impact of plant operation on the aquatic environment. (ETS 3.1)

3. Special studies to document levels of intake entrainment and impingement in relation to the densities of important species in the plant vicinity. (ETS 3.1.2.b)

Aquatic issues are now addressed by the effluent limitations and monitoring requirements continued in the effective NPDES Permit issued by the State of Maryland Department of Health and Mental Hygiene. The NRC will rely on this agency for regulation of matters involving water quality and aquatic biota.

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.

Before engaging in unauthorized construction or operational activities which may affect the environment, the licensee shall perform an environmental evaluation of such activity.* When the evaluation indicates that such activity involves an unreviewed environmental question, the licensee shall provide a written evaluation of such activities and obtain prior approval from the 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 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 51.2(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 provides bases for the determination that the change, test, or experiment does not involve an unreviewed environmental question.

Activities governed by Section 3.3 of this EPP are not subject to the requirements of this section.

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* Activities are excluded from this requirement if all measurable nonradiological effects are confined to the onsite areas previously disturbed during site preparation, plant construction and previous plant operation.

3.2 Reporting Related to the NPDES Permit and State Certification (pursuant to Section 401 of the Clean Water Act)

1. Violations of the NPDES Permit or the State 401 Certification Conditions shall be reported to the NRC by submittal of copies of the reports required by the NPDES Permit or State 401 Certification.

2. The licensee shall provide the NRC with a copy of any 316(a) or (b) studies and/or related documentation at the same time it is submitted to the permitting agency.

3. Changes and additions to the NPDES Permit or the State 401 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.

4. The NRC shall be notified of changes to the effective NPDES Permit proposed by the licensee by providing NRC with a copy of the proposed change at the same time it is submitted to the permitting agency. The licensee shall provide the NRC a copy of the application for renewal of the NPDES Permit at the same time the application is submitted to the permitting agency.

3.3 Changes Required for Compliance with Other Environmental Regulations

Changes in plant design or operation and performance of tests or experiments which are required to achieve compliance with other Federal, State, or local environmental regulations are not subject to the requirements of Section 3.1.

4.0 Environmental Conditions

4.1 Significant Environmental Events

Any occurrence of a significant 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 correct the reported event, (d) indicate the corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar components or systems, and (e) indicate the agencies notified and their preliminary responses.

Events reportable under this subsection which also require reports to other Federal, State or local agencies shall be reported in accordance with those reporting requirements in lieu of the requirements of this subsection. The NRC shall be provided a copy of such report at the same time it is submitted to the other agency.

The following are examples of significant environmental 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; and increase in nuisance organisms or conditions.

Appendix C

Additional Conditions

Facility Operating License No. DPR-53

Baltimore Gas and Electric Company (BGE, the licensee) shall comply with the following condition on the schedule noted below:

Amendment Number	Additional Condition	Implementation Date
227	The licensee is authorized to relocate certain Technical Specification requirements to licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the appropriate documents as described in the licensee's application dated December 4, 1996, as supplemented by letters dated March 27, June 9, June 18, July 21, August 14, August 19, September 10, October 6, October 20, October 23, November 5, 1997, and January 12, January 28, and March 16, 1998, evaluated in the NRC staff's Safety Evaluation enclosed with this amendment.	This amendment is effective immediately and shall be implemented by August 31, 1998.
228	The licensee is authorized to incorporate in the USFAR certain changes regarding Main Steam Line Break, Steam Generator Tube Rupture, Seized Rotor, and Boron Dilution Analyses.	The updated UFSAR shall be implemented within 6 months after restart from the spring 1998 refueling outage.