PALISADES PLANT

FACILITY OPERATING LICENSE DPR-20

APPENDIX A

TECHNICAL SPECIFICATIONS

As Amended through Amendment No. 223

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1.0 USE AND APPLICATION

1.1 Definitions

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

Term	Definition
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
AVERAGE DISINTEGRATION ENERGY - $\bar{E}$	$\bar{E}$ shall be the average (weighted in proportion to the concentration of each radionuclide in the primary coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives > 15 minutes, making up at least 95% of the total noniodine activity in the coolant.
AXIAL OFFSET (AO)	AO 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 (determined using the incore monitoring system).
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 (determined using the excore monitoring system).

1.1 Definitions

CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY and the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with Resistance Temperature Detector (RTD) or thermocouple sensors may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. Whenever a RTD or thermocouple sensing element is replaced, the next required CHANNEL CALIBRATION shall include an inplace cross calibration that compares the other sensing elements with the recently installed sensing element. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps.
CHANNEL CHECK	A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.
CHANNEL FUNCTIONAL TEST	A CHANNEL FUNCTIONAL TEST shall be: a. Analog and bistable channels - the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY, of all devices in the channel required for channel OPERABILITY;

1.1 Definitions

CHANNEL FUNCTIONAL TEST (continued)	b. Digital channels - the use of diagnostic programs to test digital hardware and the injection of simulated process data into the channel to verify OPERABILITY, of all devices in the channel required for channel OPERABILITY. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps so that the entire channel is tested.
CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or control rods 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 plant specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific parameter limits shall be determined for each reload cycle in accordance with Specification 5.6.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/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."
LEAKAGE	LEAKAGE shall be: a. <u>Identified LEAKAGE</u> 1. LEAKAGE, such as that from pump seals or valve packing (except Primary Coolant Pump seal water leakoff), that is captured and conducted to collection systems or a sump or collecting tank;

1.1 Definitions

LEAKAGE	a. Identified LEAKAGE (continued) 2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known not to interfere with the operation of leakage detection systems and not to be pressure boundary LEAKAGE; and 3. Primary Coolant System (PCS) LEAKAGE through a Steam Generator to the Secondary System (primary to secondary LEAKAGE). b. Unidentified LEAKAGE All LEAKAGE (except Primary Coolant Pump seal leakoff) that is not identified LEAKAGE; c. Pressure Boundary LEAKAGE LEAKAGE (except primary to secondary LEAKAGE) through a nonisolable fault in an PCS component body, pipe wall, or vessel wall.
MODE	A MODE shall correspond to any one inclusive combination of core reactivity condition, power level, average primary coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.
OPERABLE - OPERABILITY	A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

1.1 Definitions

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 FSAR; b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
QUADRANT POWER TILT (T_q)	T_q shall be the maximum positive ratio of the power generated in any quadrant minus the average quadrant power, to the average quadrant power.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the primary coolant of 2565.4 MWt.
REFUELING BORON CONCENTRATION	REFUELING BORON CONCENTRATION shall be a Primary Coolant System boron concentration of $\geq$ 1720 ppm and sufficient to assure the reactor is subcritical by $\geq$ 5% $\Delta\rho$ with all control rods withdrawn.
SHUTDOWN MARGIN (SDM)	SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming: a. All full length control rods (shutdown and regulating) are fully inserted except for the single rod of highest reactivity worth, which is assumed to be fully withdrawn. However, with all full length control rods verified fully inserted by two independent means, it is not necessary to account for a stuck rod in the SDM calculation. With any full length control rods not capable of being fully inserted, the reactivity worth of these rods must be accounted for in the determination of SDM; and b. There is no change in part length rod position.

1.1 Definitions

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 primary coolant.
TOTAL RADIAL PEAKING FACTOR (F_R^T)	F_R^T shall be the maximum ratio of the individual fuel pin power to the core average pin power integrated over the total core height, including tilt.

Table 1.1-1 (page 1 of 1)
MODES

MODE	TITLE	REACTIVITY CONDITION (k_{eff})	% RATED THERMAL POWER(a)	AVERAGE PRIMARY 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_{ave} > 200
5	Cold Shutdown(b)	< 0.99	NA	≤ 200
6	Refueling(c)	NA	NA	NA

(a) Excluding decay heat.

(b) All reactor vessel head closure bolts fully tensioned.

(c) One or more reactor vessel head closure bolts less than fully tensioned.

1.0 USE AND APPLICATION

1.2 Logical Connectors

PURPOSE

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

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

BACKGROUND

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

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

EXAMPLES The following examples illustrate the use of logical connectors.

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.

EXAMPLES
(continued)

EXAMPLE 1.2-2

ACTIONS

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

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

1.0 USE AND APPLICATION

1.3 Completion Times

PURPOSE

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

BACKGROUND

Limiting Conditions for Operation (LCOs) specify minimum requirements for ensuring safe operation of the plant. 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 plant 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 plant is not within the LCO Applicability.

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

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

1.3 Completion Times

DESCRIPTION (continued)

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 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.

EXAMPLES

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

EXAMPLE 1.3-1

ACTIONS

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

Condition B has two Required Actions. Each Required Action has its own separate Completion Time. Each Completion Time is referenced to the time that Condition B is entered.

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

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

EXAMPLES
(continued)

EXAMPLE 1.3-2

ACTIONS

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

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

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

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

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.

EXAMPLES

EXAMPLE 1.3-2 (continued)

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.

EXAMPLES
(continued)

EXAMPLE 1.3-3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Function X train inoperable.	A.1 Restore Function X train to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the LCO
B. One Function Y train inoperable.	B.1 Restore Function Y train to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet the LCO
C. One Function X train inoperable. AND One Function Y train inoperable.	C.1 Restore Function X train to OPERABLE status. OR C.2 Restore Function Y train to OPERABLE status.	12 hours 12 hours

EXAMPLES

EXAMPLE 1.3-3 (continued)

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

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

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

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve(s) to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 30 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.

EXAMPLES (continued)

EXAMPLE 1.3-5

ACTIONS

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

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

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

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

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

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

EXAMPLE
(continued)

EXAMPLE 1.3-6

ACTIONS

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

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

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.

EXAMPLES
(continued)

EXAMPLE 1.3-7

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Verify affected subsystem isolated. AND A.2 Restore subsystem to OPERABLE status.	1 hour AND Once per 8 hours thereafter 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

EXAMPLES

EXAMPLE 1.3-7 (continued)

The Completion Time clock for Condition A does not stop after Condition B is entered, but continues from the time Condition A was initially entered. If Required Action A.1 is met after Condition B is entered, Condition B is exited and operation may continue in accordance with Condition A, provided the Completion Time for Required Action A.2 has not expired.

IMMEDIATE COMPLETION TIME

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

1.0 USE AND APPLICATION

1.4 Frequency

PURPOSE

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

DESCRIPTION

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

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

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

EXAMPLES

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

EXAMPLES (continued)

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the stated Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the plant is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the plant 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 plant 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.

EXAMPLES
(continued)

EXAMPLE 1.4-2

SURVEILLANCE REQUIREMENTS

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

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

The use of "once" indicates a single performance will satisfy the specified Frequency (assuming no other Frequencies are connected by "AND"). This type of Frequency does not qualify for the 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.

EXAMPLES (continued)

EXAMPLE 1.4-3

SURVEILLANCE REQUIREMENTS

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

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." The interval continues, whether or not the plant operation is < 25% RTP between performances. 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 plant reaches 25% RTP, 12 hours would be allowed for completing the Surveillance. If the Surveillance were not performed within this 12 hour interval, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 In MODES 1 and 2, the Departure from Nucleate Boiling Ratio (DNBR) shall be maintained at or above the following DNB correlation safety limits:

Correlation	Safety Limit
XNB	1.17
ANFP	1.154
HTP	1.141

2.1.1.2 In MODES 1 and 2, the peak Linear Heat Rate (LHR) (adjusted for fuel rod dynamics) shall be maintained at ≤ 21.0 kW/ft.

2.1.2 Primary Coolant System (PCS) Pressure SL

In MODES 1, 2, 3, 4, 5, and 6, the PCS pressure shall be maintained at ≤ 2750 psia.

2.2 SL Violations

2.2.1 If SL 2.1.1.1 or SL 2.1.1.2 is violated, restore compliance and be in MODE 3 within 1 hour.

2.2.2 If SL 2.1.2 is violated:

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

2.2.2.2 In MODE 3, 4, 5, or 6, restore compliance within 5 minutes.

3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

LCO 3.0.1

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

LCO 3.0.2

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

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

LCO 3.0.3

When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, the plant 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 plant, as applicable, in:

a. MODE 3 within 7 hours;

b. MODE 4 within 31 hours; and

c. MODE 5 within 37 hours.

Exceptions to this Specification are stated in the individual Specifications.

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

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

LCO 3.0.4

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

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

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

3.0 LCO APPLICABILITY

LCO 3.0.4 (continued)

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

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

LCO 3.0.5

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

LCO 3.0.6

When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, an evaluation shall be performed in accordance with Specification 5.5.13, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

LCO 3.0.7

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

3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

SR 3.0.1

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

SR 3.0.2

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

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

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

Exceptions to this Specification are stated in the individual Specifications.

SR 3.0.3

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

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

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

3.0 SR APPLICABILITY

SR 3.0.4

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

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

3.1 REACTIVITY CONTROL SYSTEMS

3.1.1 SHUTDOWN MARGIN (SDM)

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

APPLICABILITY: MODE 3, 4, and 5.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.1.1	Verify SDM to be within limits.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 Reactivity Balance

LCO 3.1.2 The core reactivity balance shall be within ± 1% $\Delta\rho$ 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
	AND		
	A.2	Establish appropriate operating restrictions and SRs.	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 (EFPD) after each fuel loading. ----------	
	Verify overall core reactivity balance is within ± 1% $\Delta\rho$ of predicted values.	Prior to entering MODE 1 after each fuel loading AND ----------NOTE---------- Only required after initial 60 EFPD ---------- 31 EFPD

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Moderator Temperature Coefficient (MTC)

LCO 3.1.3 The MTC shall be maintained less positive than 0.5 E-4 $\Delta\rho$/°F at $\leq$ 2% RATED THERMAL POWER (RTP).

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 less positive than 0.5 E-4 $\Delta\rho$/°F at $\leq$ 2% RTP.	Prior to exceeding 2% RTP after each fuel loading

3.1 REACTIVITY CONTROL SYSTEMS

3.1.4 Control Rod Alignment

LCO 3.1.4 All control rods, including their position indication channels, shall be OPERABLE and aligned to within 8 inches of all other rods in their respective group, and the control rod position deviation alarm shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One channel of rod position indication inoperable for one or more control rods.	A.1	Perform SR 3.1.4.1 (rod position verification).	Once within 15 minutes following any rod motion in that group
B. Rod position deviation alarm inoperable.	B.1	Perform SR 3.1.4.1 (rod position verification).	Once within 15 minutes of movement of any control rod
C. One control rod misaligned by > 8 inches.	C.1	Perform SR 3.2.2.1 (peaking factor verification).	2 hours
	OR		
	C.2	Reduce THERMAL POWER to ≤ 75% RTP.	2 hours
D. One full-length control rod immovable, but trippable.	D.1	Restore control rod to OPERABLE status.	Prior to entering MODE 2 following next MODE 3 entry

ACTIONS

E. Required Action and associated Completion Time not met. OR One or more control rods inoperable for reasons other than Condition D. OR Two or more control rods misaligned by > 8 inches. OR Both rod position indication channels inoperable for one or more control rods.	E.1	Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.4.1	Verify the position of each control rod to be within 8 inches of all other control rods in its group.	12 hours
SR 3.1.4.2	Perform a CHANNEL CHECK of the control rod position indication channels.	12 hours
SR 3.1.4.3	Verify control rod freedom of movement by moving each individual full-length control rod that is not fully inserted into the reactor core $\geq$ 6 inches in either direction.	92 days
SR 3.1.4.4	Verify the rod position deviation alarm is OPERABLE.	18 months
SR 3.1.4.5	Perform a CHANNEL CALIBRATION of the control rod position indication channels.	18 months
SR 3.1.4.6	Verify each full-length control rod drop time is $\leq$ 2.5 seconds.	Prior to reactor criticality, after each reinstallation of the reactor head

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Shutdown and Part-Length Control Rod Group Insertion Limits

LCO 3.1.5 All shutdown and part-length rod groups shall be withdrawn to ≥ 128 inches.

APPLICABILITY: MODE 1,
MODE 2 with any regulating rod withdrawn above 5 inches.

----------NOTE----------
This LCO is not applicable while performing SR 3.1.4.3 (rod exercise test).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more shutdown or part-length rods not within limit.	A.1 Declare affected control rod(s) inoperable and enter the applicable Conditions and Required Actions of LCO 3.1.4.	Immediately
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.5.1	Verify each shutdown and part-length rod group is withdrawn ≥ 128 inches.	12 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Regulating Rod Group Position Limits

LCO 3.1.6 The Power Dependent Insertion Limit (PDIL) alarm circuit and the Control Rod Out Of Sequence (CROOS) alarm circuit shall be OPERABLE, and the regulating rod groups shall be limited to the withdrawal sequence, overlap, and insertion limits specified in the COLR.

APPLICABILITY: MODES 1 and 2.

----------NOTE----------
This LCO is not applicable while performing SR 3.1.4.3 (rod exercise test).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Regulating rod groups inserted beyond the insertion limit.	A.1 Restore regulating rod groups to within limits. OR	2 hours
	A.2 Reduce THERMAL POWER to less than or equal to the fraction of RTP allowed by the regulating rod group position and insertion limits specified in the COLR.	2 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Regulating rod groups not within sequence or overlap limits.	B.1 Restore regulating rod groups to within appropriate sequence and overlap limits.	2 hours
C. PDIL or CROOS alarm circuit inoperable.	C.1 Perform SR 3.1.6.1 (group position verification).	Once within 15 minutes following any rod motion
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.6.1	Verify each regulating rod group is within its withdrawal sequence, overlap, and insertion limits.	12 hours
SR 3.1.6.2	Verify PDIL alarm circuit is OPERABLE.	31 days
SR 3.1.6.3	Verify CROOS alarm circuit is OPERABLE.	31 days

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Special Test Exceptions (STE)

LCO 3.1.7 During the performance of PHYSICS TESTS, the requirements of

LCO 3.1.4, "Control Rod Alignment";
LCO 3.1.5, "Shutdown and Part-Length Rod Group Insertion Limits";
LCO 3.1.6, "Regulating Rod Group Position Limits"; and
LCO 3.4.2, "PCS Minimum Temperature for Criticality"

may be suspended, provided:

a. THERMAL POWER is ≤ 2% RTP;

b. ≥ 1% shutdown reactivity, based on predicted control rod worth, is available for trip insertion; and

c. T_{ave} is ≥ 500°F.

APPLICABILITY: MODE 2 during PHYSICS TESTS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. THERMAL POWER not within limit.	A.1 Reduce THERMAL POWER to within limit.	15 minutes
B. Shutdown reactivity not within limit.	B.1 Initiate boration to restore shutdown reactivity to within limit.	15 minutes
C. T_{ave} not within limit.	C.1 Restore T_{ave} to within limit.	15 minutes

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.7.1	Verify THERMAL POWER is ≤ 2% RTP.	1 hour
SR 3.1.7.2	Verify T_{ave} is ≥ 500°F.	1 hour
SR 3.1.7.3	Verify ≥ 1% shutdown reactivity is available for trip insertion.	24 hours

3.2 POWER DISTRIBUTION LIMITS

3.2.1 Linear Heat Rate (LHR)

LCO 3.2.1 LHR shall be within the limits specified in the COLR, and the Incore Alarm System or Excore Monitoring System shall be OPERABLE to monitor LHR.

APPLICABILITY: MODE 1 with THERMAL POWER > 25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LHR, as determined by the automatic Incore Alarm System, not within limits specified in the COLR, as indicated by four or more coincident incore channels. OR LHR, as determined by the Excore Monitoring System, not within limits specified in the COLR. OR LHR, as determined by manual incore detector readings, not within limits specified in the COLR.	A.1 Restore LHR to within limits.	1 hour

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Incore Alarm and Excore Monitoring Systems inoperable for monitoring LHR.	B.1 Reduce THERMAL POWER to ≤ 85% RTP. AND	2 hours
	B.2 Verify LHR is within limits using manual incore readings.	4 hours AND Once per 2 hours thereafter
C. Required Action and associated Completion Time not met.	C.1 Reduce THERMAL POWER to ≤ 25% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.1.1	----------NOTE---------- Only required to be met when the Incore Alarm System is being used to monitor LHR. ---------- Verify LHR is within the limits specified in the COLR.	12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.2.1.2	----------NOTE---------- Only required to be met when the Incore Alarm System is being used to monitor LHR. ---------- Adjust incore alarm setpoints based on a measured power distribution.	Prior to operation > 50% RTP after each fuel loading AND 31 EFPD thereafter
SR 3.2.1.3	----------NOTE---------- Only required to be met when the Excore Monitoring System is being used to monitor LHR. ---------- Verify measured ASI has been within 0.05 of target ASI for last 24 hours.	Prior to each initial use of Excore Monitoring System to monitor LHR
SR 3.2.1.4	----------NOTE---------- Only required to be met when the Excore Monitoring System is being used to monitor LHR. ---------- Verify THERMAL POWER is less than the APL.	1 hour

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.2.1.5	----------NOTE---------- Only required to be met when the Excore Monitoring System is being used to monitor LHR. ---------- Verify measured ASI is within 0.05 of target ASI.	1 hour
SR 3.2.1.6	----------NOTE---------- Only required to be met when the Excore Monitoring System is being used to monitor LHR. ---------- Verify $T_q \leq 0.03$.	24 hours

3.2 POWER DISTRIBUTION LIMITS

3.2.2 TOTAL RADIAL PEAKING FACTOR (F_R^T)

LCO 3.2.2 F_R^T shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1 with THERMAL POWER > 25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. F_R^T not within limits specified in the COLR.	A.1 Restore F_R^T to within limits.	6 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to ≤ 25% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.2.2.1 Verify F_R^T is within limits specified in the COLR.	Prior to operation > 50% RTP after each fuel loading AND 31 EFPD thereafter

3.2 POWER DISTRIBUTION LIMITS

3.2.3 QUADRANT POWER TILT (T_q)

LCO 3.2.3 T_q shall be ≤ 0.05.

APPLICABILITY: MODE 1 with THERMAL POWER > 25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. T_q > 0.05.	A.1 Verify F_R^T is within the limits of LCO 3.2.2, "TOTAL RADIAL PEAKING FACTOR ".	2 hours AND Once per 8 hours thereafter
B. T_q > 0.10.	B.1 Reduce THERMAL POWER to < 50% RTP.	4 hours
C. Required Action and associated Completion Time not met. OR T_q > 0.15.	C.1 Reduce THERMAL POWER to ≤ 25% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.2.3.1 Verify T_q is ≤ 0.05.	12 hours

3.2 POWER DISTRIBUTION LIMITS

3.2.4 AXIAL SHAPE INDEX (ASI)

LCO 3.2.4 The ASI shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1 with THERMAL POWER > 25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ASI not within limits specified in COLR.	A.1 Restore ASI to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to ≤ 25% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.4.1	Verify ASI is within limits specified in the COLR.	12 hours

3.3 INSTRUMENTATION

3.3.1 Reactor Protective System (RPS) Instrumentation

LCO 3.3.1 Four RPS trip units, associated instrument channels, and associated Zero Power Mode (ZPM) Bypass removal channels for each Function in Table 3.3.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ----------NOTE---------- Not applicable to High Startup Rate, Loss of Load, or ZPM Bypass Removal Functions. ---------- One or more Functions with one RPS trip unit or associated instrument channel inoperable.	A.1 Place affected trip unit in trip.	7 days
B. One High Startup Rate trip unit or associated instrument channel inoperable.	B.1 Restore trip unit and associated instrument channel to OPERABLE status.	Prior to entering MODE 2 from MODE 3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One Loss of Load trip unit or associated instrument channel inoperable.	C.1 Restore trip unit and associated instrument channel to OPERABLE status.	Prior to increasing THERMAL POWER to ≥ 17% RTP following entry into MODE 3
D. One or more ZPM Bypass Removal channels inoperable.	D.1 Remove the affected ZPM Bypasses. OR D.2 Declare affected trip units inoperable.	Immediately Immediately
E. ----------NOTE---------- Not applicable to ZPM Bypass Removal Function. ---------- One or more Functions with two RPS trip units or associated instrument channels inoperable.	E.1 Place one trip unit in trip. AND ----------NOTE---------- Not applicable to High Startup Rate or Loss of Load Functions. ---------- E.2 Restore one trip unit and associated instrument channel to OPERABLE status.	1 hour 7 days
F. Two power range channels inoperable.	F.1 Restrict THERMAL POWER to ≤ 70% RTP.	2 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. Required Action and associated Completion Time not met. OR Control room ambient air temperature > 90°F.	G.1 Be in MODE 3. AND	6 hours
	G.2.1 Verify no more than one full-length control rod is capable of being withdrawn. OR	6 hours
	G.2.2 Verify PCS boron concentration is at REFUELING BORON CONCENTRATION.	6 hours

SURVEILLANCE REQUIREMENTS

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

SURVEILLANCE		FREQUENCY
SR 3.3.1.1	Perform a CHANNEL CHECK.	12 hours
SR 3.3.1.2	Verify control room temperature is ≤ 90°F.	12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.1.3	----------NOTE---------- Not required to be performed until 12 hours after THERMAL POWER is ≥ 15% RTP. ---------- Perform calibration (heat balance only) and adjust the power range excore and ΔT power channels to agree with calorimetric calculation if the absolute difference is ≥ 1.5%.	24 hours
SR 3.3.1.4	----------NOTE---------- Not required to be performed until 12 hours after THERMAL POWER is ≥ 25% RTP. ---------- Calibrate the power range excore channels using the incore detectors.	31 days
SR 3.3.1.5	Perform a CHANNEL FUNCTIONAL TEST and verify the Thermal Margin Monitor Constants.	92 days
SR 3.3.1.6	Perform a calibration check of the power range excore channels with a test signal.	92 days
SR 3.3.1.7	Perform a CHANNEL FUNCTIONAL TEST of High Startup Rate and Loss of Load Functions.	Once within 7 days prior to each reactor startup

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.1.8	----------NOTE---------- Neutron detectors are excluded from the CHANNEL CALIBRATION. ----------	
	Perform a CHANNEL CALIBRATION.	18 months

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

FUNCTION	APPLICABLE MODES	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Variable High Power Trip	1,2,3[(a)],4[(a)],5[(a)]	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 3.3.1.6 SR 3.3.1.8	≤ 15% RTP above current THERMAL POWER with a minimum of ≤ 30% RTP and a maximum of ≤ 109.4% RTP
2. High Startup Rate Trip[(b)]	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.8	NA
3. Low Primary Coolant System Flow Trip[(c)]	1,2,3[(a)],4[(a)],5[(a)]	SR 3.3.1.1 SR 3.3.1.5 SR 3.3.1.8	≥ 95%
4. Low Steam Generator A Level Trip	1,2,3[(a)],4[(a)],5[(a)]	SR 3.3.1.1 SR 3.3.1.5 SR 3.3.1.8	≥ 25.9% narrow range
5. Low Steam Generator B Level Trip	1,2,3[(a)],4[(a)],5[(a)]	SR 3.3.1.1 SR 3.3.1.5 SR 3.3.1.8	≥ 25.9% narrow range
6. Low Steam Generator A Pressure Trip[(c)]	1,2,3[(a)],4[(a)],5[(a)]	SR 3.3.1.1 SR 3.3.1.5 SR 3.3.1.8	≥ 500 psia
7. Low Steam Generator B Pressure Trip[(c)]	1,2,3[(a)],4[(a)],5[(a)]	SR 3.3.1.1 SR 3.3.1.5 SR 3.3.1.8	≥ 500 psia
8. High Pressurizer Pressure Trip	1,2,3[(a)],4[(a)],5[(a)]	SR 3.3.1.1 SR 3.3.1.5 SR 3.3.1.8	≤ 2255 psia

(a) With more than one full-length control rod capable of being withdrawn and PCS boron concentration less than REFUELING BORON CONCENTRATION.
(b) Trip may be bypassed when Wide Range Power is < 1E-4% RTP or when THERMAL POWER is > 13% RTP.
(c) Trips may be bypassed when Wide Range Power is < 1E-4% RTP. Bypass shall be automatically removed when Wide Range Power is ≥ 1E-4% RTP.

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

FUNCTION	APPLICABLE MODES	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
9. Thermal Margin/ Low Pressure Trip[(c)]	1,2,3[(a)],4[(a)],5[(a)]	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 3.3.1.6 SR 3.3.1.8	Table 3.3.1-2
10. Loss of Load Trip	1[(d)]	SR 3.3.1.7 SR 3.3.1.8	NA
11. Containment High Pressure Trip	1,2,3[(a)],4[(a)],5[(a)]	SR 3.3.1.5 SR 3.3.1.8	≤ 3.70 psig
12. Zero Power Mode Bypass Automatic Removal	1,2,3[(a)],4[(a)],5[(a)]	SR 3.3.1.8	NA

(a) With more than one full-length control rod capable of being withdrawn and PCS boron concentration less than REFUELING BORON CONCENTRATION.

(c) Trips may be bypassed when Wide Range Power is < 1E-4% RTP. Bypass shall be automatically removed when Wide Range Power is ≥ 1E-4% RTP.

(d) When THERMAL POWER is ≥ 17% RTP.

Table 3.3.1-2 (page 1 of 1)
Thermal Margin/Low Pressure Trip Function Allowable Value

The Allowable Value for the Thermal Margin/Low Pressure Trip, P_{trip}, is the higher of two values, P_{min} and P_{var}, both in psia:

$P_{min} = 1750$
$P_{var} = 2012(QA)(QR_1) + 17.0(T_{in}) - 9559$

Where:

$QA = - 0.720(ASI) + 1.028;$	when $- 0.628 \leq ASI < - 0.100$
$QA = - 0.333(ASI) + 1.067;$	when $- 0.100 \leq ASI < + 0.200$
$QA = + 0.375(ASI) + 0.925;$	when $+ 0.200 \leq ASI \leq + 0.565$
ASI = Measured ASI	when $Q \geq 0.0625$
$ASI = 0.0$	when $Q < 0.0625$
$QR_1 = 0.412(Q) + 0.588;$	when $Q \leq 1.0$
$QR_1 = Q;$	when $Q > 1.0$

Q = THERMAL POWER/RATED THERMAL POWER

T_{in} = Maximum primary coolant inlet temperature, in °F

ASI, T_{in}, and Q are the existing values as measured by the associated instrument channel.

3.3 INSTRUMENTATION

3.3.2 Reactor Protective System (RPS) Logic and Trip Initiation

LCO 3.3.2 Six channels of RPS Matrix Logic, four channels of RPS Trip Initiation Logic, and two channels of RPS Manual Trip shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODES 3, 4, and 5, with more than one full-length control rod capable of being withdrawn and Primary Coolant System (PCS) boron concentration less than REFUELING BORON CONCENTRATION.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One Matrix Logic channel inoperable.	A.1	Restore channel to OPERABLE status.	48 hours
B. One channel of Trip Initiation Logic inoperable.	B.1	De-energize the affected clutch power supplies.	1 hour
C. One channel of Manual Trip inoperable.	C.1	Restore channel to OPERABLE status.	Prior to entering MODE 2 from MODE 3
D. Two channels of Trip Initiation Logic affecting the same trip leg inoperable.	D.1	De-energize the affected clutch power supplies.	Immediately

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. Required Action and associated Completion Time not met. OR One or more Functions with two or more Manual Trip, Matrix Logic or Trip Initiation Logic channels inoperable for reasons other than Condition D.	E.1 AND	Be in MODE 3.	6 hours
	E.2.1 OR	Verify no more than one full-length control rod is capable of being withdrawn.	6 hours
	E.2.2	Verify PCS boron concentration is at REFUELING BORON CONCENTRATION.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.2.1	Perform a CHANNEL FUNCTIONAL TEST on each RPS Matrix Logic channel and each RPS Trip Initiation Logic channel.	92 days
SR 3.3.2.2	Perform a CHANNEL FUNCTIONAL TEST on each RPS Manual Trip channel.	Once within 7 days prior to each reactor startup

3.3 INSTRUMENTATION

3.3.3 Engineered Safety Features (ESF) Instrumentation

LCO 3.3.3 Four ESF bistables and associated instrument channels for each Function in Table 3.3.3-1 shall be OPERABLE.

APPLICABILITY: As specified in Table 3.3.3-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ----------NOTE---------- Not applicable to RAS. ---------- One or more Functions with one ESF bistable or associated instrument channel inoperable.	A.1 Place affected bistable in trip.	7 days
B. ----------NOTE---------- Not applicable to RAS. ---------- One or more Functions with two ESF bistables or associated instrument channels inoperable.	B.1 Place one bistable in trip. AND B.2 Restore one bistable and associated instrument channel to OPERABLE status.	8 hours 7 days

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One RAS bistable or associated instrument channel inoperable.	C.1	Bypass affected bistable.	8 hours
	AND		
	C.2	Restore bistable and associated instrument channel to OPERABLE status.	7 days
D. Required Action and associated Completion Time not met for Functions 1, 2, 3, 4, or 7.	D.1	Be in MODE 3.	6 hours
	AND		
	D.2	Be in MODE 4.	30 hours
E. Required Action and associated Completion Time not met for Functions 5 or 6.	E.1	Be in MODE 3.	6 hours
	AND		
	E.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

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

Refer to Table 3.3.3-1 to determine which SR shall be performed for each Function.

SURVEILLANCE		FREQUENCY
SR 3.3.3.1	Perform a CHANNEL CHECK.	12 hours
SR 3.3.3.2	Perform a CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.3.3	Perform a CHANNEL CALIBRATION.	18 months

Table 3.3.3-1 (page 1 of 2)
Engineered Safety Features Instrumentation

FUNCTION	APPLICABLE MODES	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Safety Injection Signal (SIS)			
a. Pressurizer Low Pressure	1,2,3	SR 3.3.3.1 SR 3.3.3.2 SR 3.3.3.3	≥ 1593 psia
2. Steam Generator Low Pressure Signal (SGLP)			
a. Steam Generator A Low Pressure	1,2[(a)],3[(a)]	SR 3.3.3.1 SR 3.3.3.2 SR 3.3.3.3	≥ 500 psia
b. Steam Generator B Low Pressure	1,2[(a)],3[(a)]	SR 3.3.3.1 SR 3.3.3.2 SR 3.3.3.3	≥ 500 psia
3. Recirculation Actuation Signal (RAS)			
a. SIRWT Low Level	1,2,3	SR 3.3.3.3	≥ 21 inches and ≤ 27 inches above tank bottom
4. Auxiliary Feedwater Actuation Signal (AFAS)			
a. Steam Generator A Low Level	1,2,3	SR 3.3.3.1 SR 3.3.3.2 SR 3.3.3.3	≥ 25.9% narrow range
b. Steam Generator B Low Level	1,2,3	SR 3.3.3.1 SR 3.3.3.2 SR 3.3.3.3	≥ 25.9% narrow range

(a) Not required to be OPERABLE when all Main Steam Isolation Valves (MSIVs) are closed and deactivated, and all Main Feedwater Regulating Valves (MFRVs) and MFRV bypass valves are either closed and deactivated, or isolated by closed manual valves.

Table 3.3.3-1 (page 2 of 2)
Engineered Safety Features Instrumentation

FUNCTION	APPLICABLE MODES	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
5. Containment High Pressure (CHP)			
a. Containment High Pressure — Left Train	1,2,3,4	SR 3.3.3.2 SR 3.3.3.3	≥ 3.7 psig and ≤ 4.3 psig
b. Containment High Pressure — Right Train	1,2,3,4	SR 3.3.3.2 SR 3.3.3.3	≥ 3.7 psig and ≤ 4.3 psig
6. Containment High Radiation Signal (CHR)			
a. Containment High Radiation	1,2,3,4	SR 3.3.3.1 SR 3.3.3.2 SR 3.3.3.3	≤ 20 R/hour
7. Automatic Bypass Removals			
a. Pressurizer Low Pressure Bypass	1,2,3	SR 3.3.3.3	≤ 1700 psia
b. Steam Generator A Low Pressure Bypass	1,2[(a)],3[(a)]	SR 3.3.3.3	≤ 565 psia
c. Steam Generator B Low Pressure Bypass	1,2[(a)],3[(a)]	SR 3.3.3.3	≤ 565 psia

(a) Not required to be OPERABLE when all Main Steam Isolation Valves (MSIVs) are closed and deactivated, and all Main Feedwater Regulating Valves (MFRVs) and MFRV bypass valves are either closed and deactivated, or isolated by closed manual valves.

3.3 INSTRUMENTATION

3.3.4 Engineered Safety Features (ESF) Logic and Manual Initiation

LCO 3.3.4 Two ESF Manual Initiation and two ESF Actuation Logic channels and associated bypass removal channels shall be OPERABLE for each ESF Function specified in Table 3.3.4-1.

APPLICABILITY: According to Table 3.3.4-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one Manual Initiation, Bypass Removal, or Actuation Logic channel inoperable.	A.1 Restore channel to OPERABLE status.	48 hours
B. One or more Functions with two Manual Initiation, Bypass Removal, or Actuation Logic channels inoperable for Functions 1, 2, 3, or 4. OR Required Action and associated Completion Time of Condition A not met for Functions 1, 2, 3, or 4.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 30 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more Functions with two Manual Initiation, or Actuation Logic channels inoperable for Functions 5 or 6. OR Required Action and associated Completion Time of Condition A not met for Functions 5 or 6.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.4.1	Perform functional test of each SIS actuation channel normal and standby power functions.	92 days
SR 3.3.4.2	Perform a CHANNEL FUNCTIONAL TEST of each AFAS actuation logic channel.	92 days
SR 3.3.4.3	Perform a CHANNEL FUNCTIONAL TEST.	18 months

Table 3.3.4-1 (page 1 of 1)
Engineered Safety Features Actuation Logic and Manual Initiation

	FUNCTION	APPLICABLE MODES
1.	Safety Injection Signal (SIS)[a]	1,2,3
2.	Steam Generator Low Pressure Signal (SGLP)[b][c]	1,2[d],3[d]
3.	Recirculation Actuation Signal (RAS)	1,2,3
4.	Auxiliary Feedwater Actuation Signal (AFAS)	1,2,3
5.	Containment High Pressure Signal (CHP)[c]	1,2,3,4
6.	Containment High Radiation Signal (CHR)	1,2,3,4

(a) SIS actuation by Pressurizer Low Pressure may be manually bypassed when pressurizer pressure is ≤ 1700 psia. The bypass shall be automatically removed whenever pressurizer pressure is > 1700 psia.

(b) SGLP actuation may be manually bypassed when SG pressure is ≤ 565 psia. The bypass shall be automatically removed whenever steam generator pressure is > 565 psia.

(c) Manual Initiation may be achieved by individual component controls.

(d) Not required to be OPERABLE when all Main Steam Isolation Valves (MSIVs) are closed and deactivated, and all Main Feedwater Regulating Valves (MFRVs) and MFRV bypass valves are either closed and deactivated, or isolated by closed manual valves.

3.3 INSTRUMENTATION

3.3.5 Diesel Generator (DG) - Undervoltage Start (UV Start)

LCO 3.3.5 Three channels of Loss of Voltage Function and three channels of Degraded Voltage Function auto-initiation instrumentation and associated logic channels for each DG shall be OPERABLE.

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one channel per DG inoperable.	A.1 Enter applicable Conditions and Required Actions for the associated DG made inoperable by DG - UV Start instrumentation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.5.1	Perform a CHANNEL FUNCTIONAL TEST on each DG-UV start logic channel.	18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.5.2	Perform CHANNEL CALIBRATION on each Loss of Voltage and Degraded Voltage channel with setpoints as follows: a. Degraded Voltage Function ≥ 2187 V and ≤ 2264 V Time delay: ≥ 0.5 seconds and ≤ 0.8 seconds; and b. Loss of Voltage Function ≥ 1780 V and ≤ 1940 V Time delay: ≥ 5.45 seconds and ≤ 8.15 seconds at 1400 V.	18 months

3.3 INSTRUMENTATION

3.3.6 Refueling Containment High Radiation (CHR) Instrumentation

LCO 3.3.6 Two Refueling CHR Automatic Actuation Function channels and two CHR Manual Actuation Function channels shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one channel inoperable.	A.1 Place the affected channel in trip. OR A.2.1 Suspend CORE ALTERATIONS. AND A.2.2 Suspend movement of irradiated fuel assemblies within containment.	4 hours 4 hours 4 hours
B. One or more Functions with two channels inoperable.	B.1 Suspend CORE ALTERATIONS. AND B.2 Suspend movement of irradiated fuel assemblies within containment.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.6.1	Perform a CHANNEL CHECK of each refueling CHR monitor channel.	12 hours
SR 3.3.6.2	Perform a CHANNEL FUNCTIONAL TEST of each refueling CHR monitor channel.	31 days
SR 3.3.6.3	Perform a CHANNEL FUNCTIONAL TEST of each CHR Manual Initiation channel.	18 months
SR 3.3.6.4	Perform a CHANNEL CALIBRATION of each refueling CHR monitor channel.	18 months

3.3 INSTRUMENTATION

3.3.7 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.7 The PAM instrumentation for each Function in Table 3.3.7-1 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 channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.6.	Immediately
C. One or more Functions with two required channels inoperable.	C.1 Restore one channel to OPERABLE status.	7 days

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. (Not Used)			
E. Required Action and associated Completion Time of Condition C not met.	E.1	Enter the Condition referenced in Table 3.3.7-1 for the channel.	Immediately
F. As required by Required Action E.1 and referenced in Table 3.3.7-1.	F.1 AND	Be in MODE 3.	6 hours
	F.2	Be in MODE 4.	30 hours
G. As required by Required Action E.1 and referenced in Table 3.3.7-1.	G.1	Initiate action in accordance with Specification 5.6.6.	Immediately

SURVEILLANCE REQUIREMENTS

----------NOTE----------
These SRs apply to each PAM instrumentation Function in Table 3.3.7-1.

	SURVEILLANCE	FREQUENCY
SR 3.3.7.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days
SR 3.3.7.2	----------NOTE---------- Neutron detectors are excluded from the CHANNEL CALIBRATION. --- Perform CHANNEL CALIBRATION.	18 months

Table 3.3.7-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

	FUNCTION	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTION E.1
1.	Primary Coolant System Hot Leg Temperature (wide range)	2	F
2.	Primary Coolant System Cold Leg Temperature (wide range)	2	F
3.	Wide Range Neutron Flux	2	F
4.	Containment Floor Water Level (wide range)	2	F
5.	Subcooled Margin Monitor	2	F
6.	Pressurizer Level (wide range)	2	F
7.	(Deleted)		
8.	Condensate Storage Tank Level	2	F
9.	Primary Coolant System Pressure (wide range)	2	F
10.	Containment Pressure (wide range)	2	F
11.	Steam Generator A Water Level (wide range)	2	F
12.	Steam Generator B Water Level (wide range)	2	F
13.	Steam Generator A Pressure	2	F
14.	Steam Generator B Pressure	2	F
15.	Containment Isolation Valve Position	1 per valve[(a)]	F
16.	Core Exit Temperature - Quadrant 1	4	F
17.	Core Exit Temperature - Quadrant 2	4	F
18.	Core Exit Temperature - Quadrant 3	4	F
19.	Core Exit Temperature - Quadrant 4	4	F
20.	Reactor Vessel Water Level	2	G
21.	Containment Area Radiation (high range)	2	G

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

3.3 INSTRUMENTATION

3.3.8 Alternate Shutdown System

LCO 3.3.8 The Alternate Shutdown System Functions in Table 3.3.8-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

---NOTE---

Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more 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 30 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.8.1	Perform CHANNEL FUNCTIONAL TEST of the Source Range Neutron Flux Function.	Once within 7 days prior to each reactor startup
SR 3.3.8.2	Verify each required control circuit and transfer switch is capable of performing the intended function.	18 months
SR 3.3.8.3	----------NOTES---------- 1. Not required for Functions 16, 17, and 18. 2. Neutron detectors are excluded from the CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION for each required instrumentation channel.	18 months

Table 3.3.8-1 (page 1 of 1)
Alternate Shutdown System Instrumentation and Controls

	FUNCTION, INSTRUMENT OR CONTROL PARAMATER	REQUIRED CHANNELS
1.	Source Range Neutron Flux	1
2.	Pressurizer Pressure	1
3.	Pressurizer Level	1
4.	Primary Coolant System (PCS) #1 Hot Leg Temperature	1
5.	PCS #2 Hot Leg Temperature	1
6.	PCS #1 Cold Leg Temperature	1
7.	PCS #2 Cold Leg Temperature	1
8.	Steam Generator (SG) A Pressure	1
9.	SG B Pressure	1
10.	SG A Wide Range Level	1
11.	SG B Wide Range Level	1
12.	Safety Injection Refueling Water (SIRW) Tank Level	1
13.	Auxiliary Feedwater (AFW) Flow Indication to SG A	1
14.	AFW Flow Indication to SG B	1
15.	AFW Low Suction Pressure Alarm (P-8B)	1
16.	AFW Pump P-8B Steam Supply Valve Control	1
17.	AFW Flow Control to SG A	1
18.	AFW Flow Control to SG B	1

3.3 INSTRUMENTATION

3.3.9 Neutron Flux Monitoring Channels

LCO 3.3.9 Two channels of neutron flux monitoring instrumentation shall be OPERABLE.

APPLICABILITY: MODES 3, 4, and 5.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more required channel(s) 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 3.3.9.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.9.2	----------NOTE---------- Neutron detectors are excluded from the CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION.	18 months

3.3 INSTRUMENTATION

3.3.10 Engineered Safeguards Room Ventilation (ESRV) Instrumentation

LCO 3.3.10 Two channels of ESRV Instrumentation shall be OPERABLE.

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

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Initiate action to isolate the associated ESRV System.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.10.1	Perform a CHANNEL CHECK.	12 hours
SR 3.3.10.2	Perform a CHANNEL FUNCTIONAL TEST.	31 days
SR 3.3.10.3	Perform a CHANNEL CALIBRATION. Verify high radiation setpoint on each ESRV Instrumentation radiation monitoring channel is ≤ 2.2E+5 cpm.	18 months

3.4 PRIMARY COOLANT SYSTEM (PCS)

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

LCO 3.4.1 PCS DNB parameters for pressurizer pressure, cold leg temperature, and PCS total flow rate shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Pressurizer pressure, PCS cold leg temperature, or PCS total flow rate not within limits.	A.1 Restore parameter(s) to within limit.	2 hours
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 within the limits specified in the COLR.	12 hours
SR 3.4.1.2	Verify PCS cold leg temperature within the limit specified in the COLR.	12 hours
SR 3.4.1.3	----------NOTE---------- Not required to be performed until 31 EFPD after THERMAL POWER is ≥ 90% RTP. ---------- Verify PCS total flow rate within the limit specified in the COLR.	18 months AND After each plugging of 10 or more steam generator tubes

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.2 PCS Minimum Temperature for Criticality

LCO 3.4.2 Each PCS loop average temperature (T_{ave}) shall be $\geq$ 525°F.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. T_{ave} in one or more PCS 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 PCS T_{ave} in each loop $\geq$ 525°F.	12 hours

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.3 PCS Pressure and Temperature (P/T) Limits

LCO 3.4.3 PCS pressure, PCS temperature, and PCS heatup and cooldown rates shall be maintained within the limits of Figure 3.4.3-1 and Figure 3.4.3-2.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. ----------NOTE---------- Required Action A.2 shall be completed whenever this Condition is entered. ---------- Requirements of LCO not met in MODE 1, 2, 3, or 4.	A.1	Restore parameter(s) to within limits.	30 minutes
	AND		
	A.2	Determine PCS is acceptable for continued operation.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 5 with PCS pressure < 270 psia.	36 hours

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.3.1	----------NOTE---------- Only required to be performed during PCS heatup and cooldown operations. ---------- Verify PCS pressure, PCS temperature, and PCS heatup and cooldown rates are within the limits of Figure 3.4.3-1 and Figure 3.4.3-2.	30 minutes

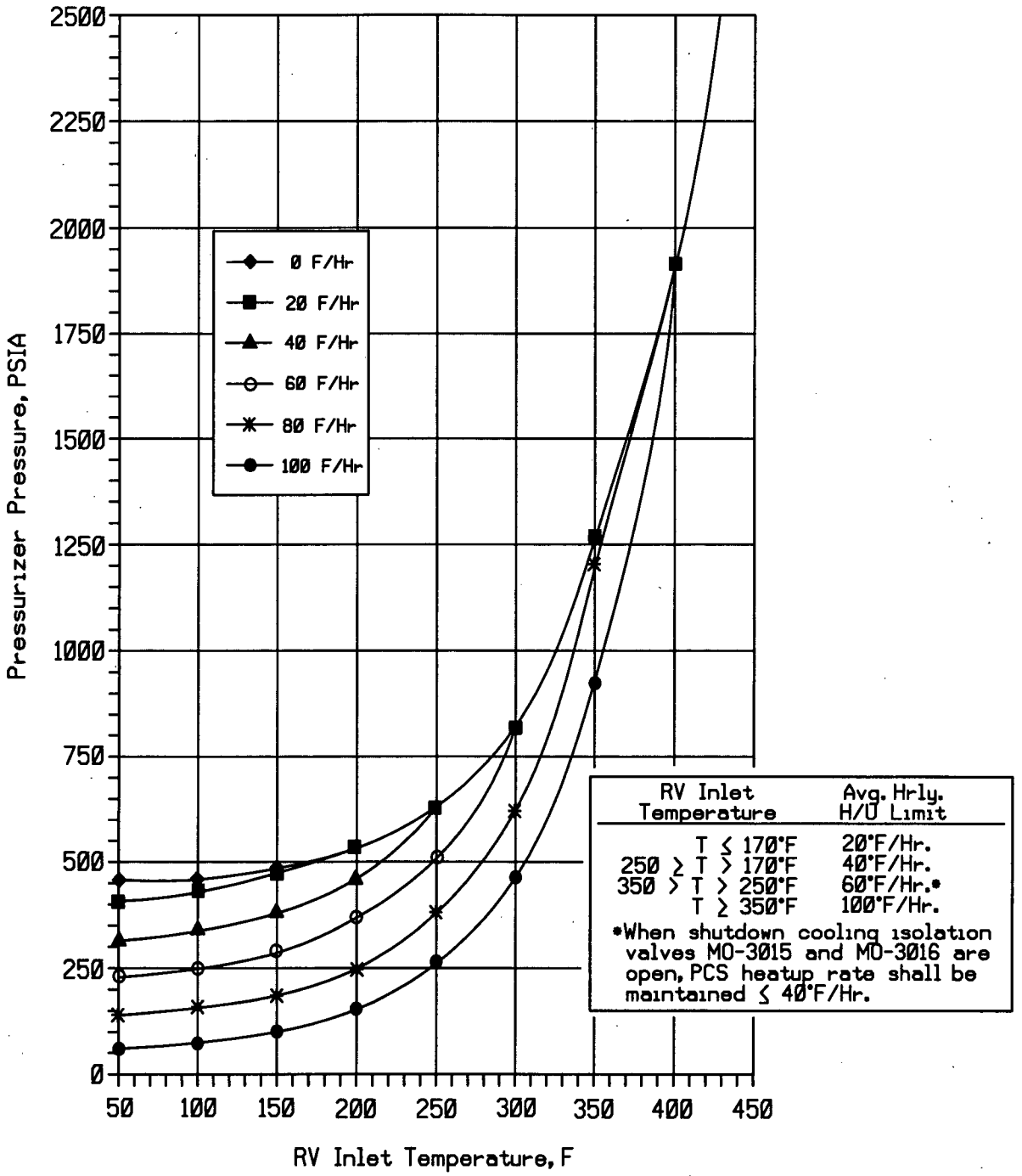
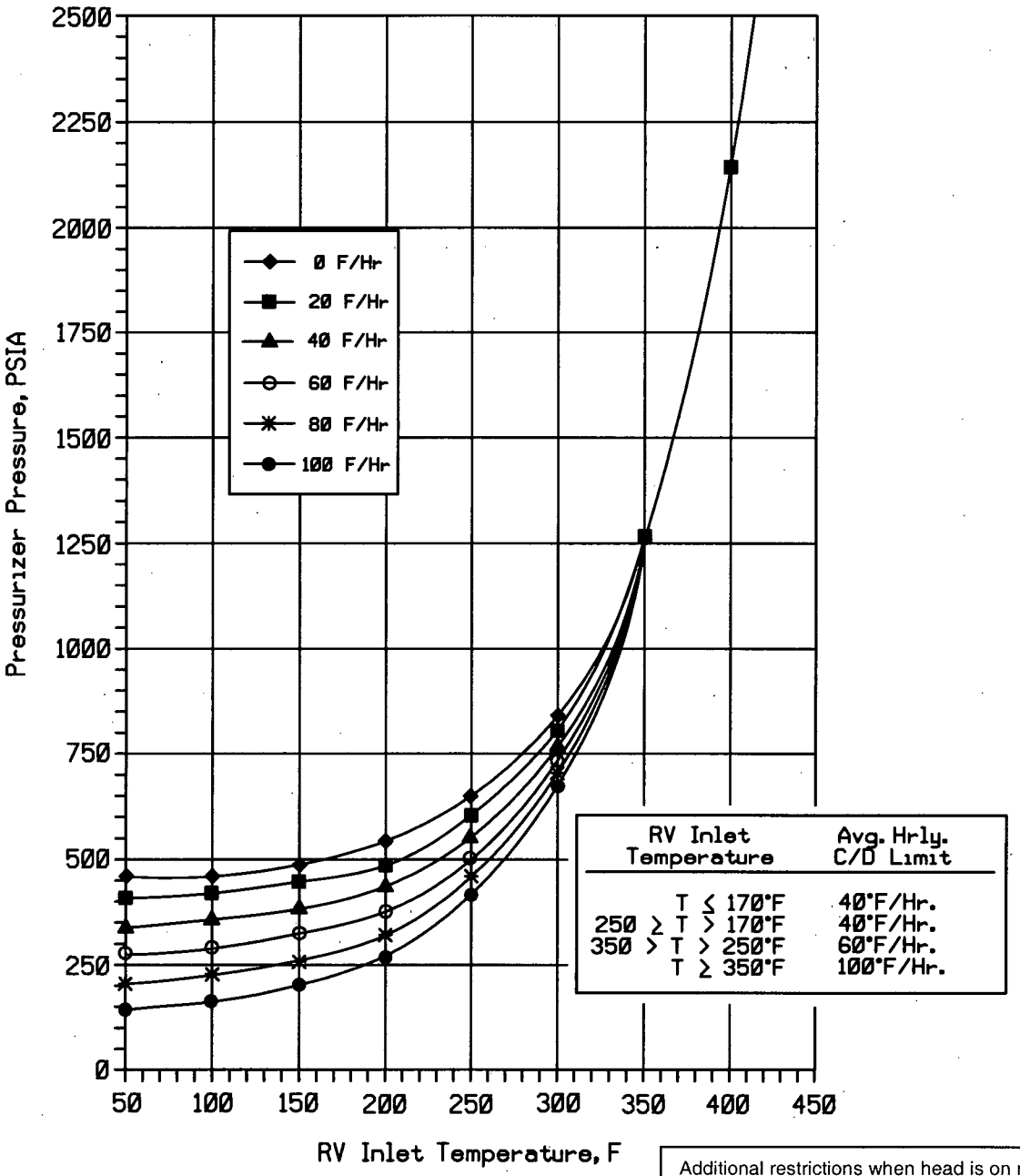


Figure 3.4.3-1 (Page 1 of 1)
Pressure – Temperature Limits for Heatups



Additional restrictions when head is on reactor vessel:

1. Maintain average core exit temperature: 135°F ≥ T ≥ 110°F for ≥ 3 hours.
2. Following completion of item 1, maintain average hourly cooldown (C/D) limit of 20°F/hour based on core exit temperature indication.

Figure 3.4.3-2 (Page 1 of 1)
Pressure – Temperature Limits for Cooldown

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.4 PCS Loops - MODES 1 and 2

LCO 3.4.4 Two PCS loops shall be OPERABLE and in operation.

APPLICABILITY: MODES 1 and 2.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.4.1	Verify each PCS loop is in operation.	12 hours

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.5 PCS Loops - MODE 3

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

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

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

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

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

2. Forced circulation (starting the first primary coolant pump) shall not be initiated unless one of the following conditions is met:

   a. PCS cold leg temperature (T_c) is > 430°F;

   b. Steam Generator (SG) secondary temperature is equal to or less than the reactor inlet temperature (T_c);

   c. SG secondary temperature is < 100°F above T_c, and shutdown cooling is isolated from the PCS, and PCS heatup/cooldown rate is ≤ 10°F/hour; or

   d. SG secondary temperature is < 100°F above T_c, and shutdown cooling is isolated from the PCS, and pressurizer level is ≤ 57%.

APPLICABILITY: MODE 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required PCS loop inoperable.	A.1 Restore required PCS loop to OPERABLE status.	72 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 4.	24 hours
C. No PCS loop OPERABLE. OR No PCS loop in operation.	C.1 Suspend all operations involving a reduction of PCS boron concentration. AND C.2 Initiate action to restore one PCS loop to OPERABLE status and operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.5.1	Verify required PCS loop is in operation.	12 hours
SR 3.4.5.2	Verify secondary side water level in each steam generator ≥ -84%.	12 hours
SR 3.4.5.3	Verify correct breaker alignment and indicated power available to the required primary coolant pump that is not in operation.	7 days

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.6 PCS Loops - MODE 4

LCO 3.4.6 Two loops or trains consisting of any combination of PCS loops and Shutdown Cooling (SDC) trains shall be OPERABLE, and either:

a. One PCS loop shall be in operation; or

b. One SDC train shall be in operation with ≥ 2810 gpm flow through the reactor core.

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

1. All Primary Coolant Pumps (PCPs) and SDC pumps may not be in operation for ≤ 1 hour per 8 hour period, provided:

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

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

2. Forced circulation (starting the first PCP) shall not be initiated unless one of the following conditions is met:

   a. Steam Generator (SG) secondary temperature is equal to or less than the reactor inlet temperature (T_c),

   b. SG secondary temperature is < 100°F above T_c, and shutdown cooling is isolated from the PCS, and PCS heatup/cooldown rate is ≤ 10°F/hour,

   c. SG secondary temperature is < 100°F above T_c, and shutdown cooling is isolated from the PCS, and pressurizer level is ≤ 57%.

3. Primary coolant pumps P-50A and P-50B shall not be operated simultaneously.

APPLICABILITY: MODE 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One PCS loop inoperable. AND Two SDC trains inoperable.	A.1 Initiate action to restore a second PCS loop or one SDC train to OPERABLE status.	Immediately
B. One SDC train inoperable. AND Two PCS loops inoperable.	B.1 Be in MODE 5.	24 hours
C. No PCS loops or SDC trains OPERABLE. OR No PCS loop in operation with SDC flow through the reactor core not within limits.	C.1 Suspend all operations involving reduction of PCS boron concentration. AND C.2.1 Initiate action to restore one PCS loop to OPERABLE status and operation. OR C.2.2 Initiate action to restore one SDC train to OPERABLE status and operation with ≥ 2810 gpm flow through the reactor core.	Immediately Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	Verify one SDC train is in operation with ≥ 2810 gpm flow through the reactor core, or one PCS loop is in operation.	12 hours
SR 3.4.6.2	Verify secondary side water level in required SG(s) is ≥ -84%.	12 hours
SR 3.4.6.3	Verify correct breaker alignment and indicated power available to the required pump that is not in operation.	7 days

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.7 PCS Loops - MODE 5, Loops Filled

LCO 3.4.7 One Shutdown Cooling (SDC) train shall be OPERABLE and in operation, with ≥ 2810 gpm flow through the reactor core, and either:

a. One additional SDC train shall be OPERABLE; or

b. The secondary side water level of each Steam Generator (SG) shall be ≥ -84%.

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

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

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

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

2. Both SDC trains may be inoperable for up to 2 hours for surveillance testing or maintenance provided:

   a. One SDC train is providing the required flow through the reactor core;

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

   c. Each SG secondary side water level is ≥ -84%.

3. Forced circulation (starting the first primary coolant pump) shall not be initiated unless one of the following conditions is met:

   a. SG secondary temperature is equal to or less than the reactor inlet temperature (T_c);

   b. SG secondary temperature is < 100°F above T_c, and shutdown cooling is isolated from the PCS, and PCS heatup/cooldown rate is ≤ 10°F/hour; or

   c. SG secondary temperature is < 100°F above T_c, and shutdown cooling is isolated from the PCS, and pressurizer level is ≤ 57%.

4. Primary coolant pumps P-50A and P-50B shall not be operated simultaneously.

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

APPLICABILITY: MODE 5 with PCS loops filled.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SDC train inoperable. AND Any SG with secondary side water level not within limit.	A.1 Initiate action to restore a second SDC train to OPERABLE status. OR A.2 Initiate action to restore SG secondary side water levels to within limits.	Immediately Immediately
B. Two SDC trains inoperable. OR SDC flow through the reactor core not within limits.	B.1 Suspend all operations involving reduction in PCS boron concentration. AND B.2 Initiate action to restore one SDC train to OPERABLE status and operation with ≥ 2810 gpm flow through the reactor core.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.7.1	Verify one SDC train is in operation with ≥ 2810 gpm flow through the reactor core.	12 hours
SR 3.4.7.2	Verify required SG secondary side water level is ≥ - 84%.	12 hours
SR 3.4.7.3	Verify correct breaker alignment and indicated power available to the required SDC pump that is not in operation.	7 days

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.8 PCS Loops - MODE 5, Loops Not Filled

LCO 3.4.8 Two Shutdown Cooling (SDC) trains shall be OPERABLE, and either:

a. One SDC train in operation with ≥ 2810 gpm flow through the reactor core; or

b. One SDC train in operation with ≥ 650 gpm flow through the reactor core with two of the three charging pumps incapable of reducing the boron concentration in the PCS below the minimum value necessary to maintain the required SHUTDOWN MARGIN.

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

1. All SDC pumps may not be in operation for ≤ 1 hour provided:

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

   b. Core outlet temperature is maintained > 10°F below saturation temperature; and

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

2. One SDC train may be inoperable for ≤ 2 hours for surveillance testing provided the other SDC train is OPERABLE and in operation.

APPLICABILITY: MODE 5 with PCS loops not filled.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SDC train inoperable.	A.1 Initiate action to restore SDC train to OPERABLE status.	Immediately
B. Two SDC trains inoperable. OR SDC flow through the reactor core not within limits.	B.1 Suspend all operations involving reduction of PCS boron concentration. AND B.2 Initiate action to restore one SDC train to OPERABLE status and operation with SDC flow through the reactor core within limit.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.8.1	----------NOTE---------- Only required to be met when complying with LCO 3.4.8.a. ---------- Verify one SDC train is in operation with ≥ 2810 gpm flow through the reactor core.	12 hours

	SURVEILLANCE	FREQUENCY
SR 3.4.8.2	----------NOTE---------- Only required to be met when complying with LCO 3.4.8.b. ---------- Verify one SDC train is in operation with ≥ 650 gpm flow through the reactor core.	12 hours
SR 3.4.8.3	----------NOTE---------- Only required to be met when complying with LCO 3.4.8.b. ---------- Verify two of three charging pumps are incapable of reducing the boron concentration in the PCS below the minimum value necessary to maintain the required SHUTDOWN MARGIN.	12 hours
SR 3.4.8.4	Verify correct breaker alignment and indicated power available to the SDC pump that is not in operation.	7 days

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.9 Pressurizer

LCO 3.4.9 The pressurizer shall be OPERABLE with:

a. Pressurizer water level < 62.8%;

----------NOTE----------
The pressurizer water level limit does not apply in MODE 3 until after a bubble has been established in the pressurizer and the pressurizer water level has been lowered to within its normal operating band.
---

b. ≥ 375 kW of pressurizer heater capacity available from electrical bus 1D, and

c. ≥ 375 kW of pressurizer heater capacity available from electrical bus 1E with the capability 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 tripped.	6 hours
	AND		
	A.2	Be in MODE 4.	30 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. < 375 kW pressurizer heater capacity available from electrical bus 1D, or electrical bus 1E, OR Required pressurizer heater capacity from electrical bus 1E not capable of being powered from an emergency power supply.	B.1 Restore required pressurizer heaters to OPERABLE status.	72 hours
C. Required Action and associated Completion Time of Condition B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	6 hours 30 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	----------NOTE---------- Not required to be met until 1 hour after establishing a bubble in the pressurizer and the pressurizer water level has been lowered to within its normal operating band. ---------- Verify pressurizer water level is < 62.8%.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.2	Verify the capacity of pressurizer heaters from electrical bus 1D, and electrical bus 1E is $\geq$ 375 kW.	18 months
SR 3.4.9.3	Verify the required pressurizer heater capacity from electrical bus 1E is capable of being powered from an emergency power supply.	18 months

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.10 Pressurizer Safety Valves

LCO 3.4.10 Three pressurizer safety valves shall be OPERABLE with lift settings as specified in Table 3.4.10-1.

APPLICABILITY: MODES 1 and 2,
MODE 3 with all PCS cold leg temperatures ≥ 430°F.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One pressurizer safety valve inoperable.	A.1	Restore valve to OPERABLE status.	15 minutes
B. Required Action and associated Completion Time not met. OR Two or more pressurizer safety valves inoperable.	B.1 AND	Be in MODE 3.	6 hours
	B.2	Reduce any PCS cold leg temperature < 430°F.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.10.1	Verify each pressurizer safety valve is OPERABLE in accordance with the Inservice Testing Program. Following testing, lift settings shall be within ± 1% of required setpoint.	In accordance with the Inservice Testing Program

Table 3.4.10-1 (page 1 of 1)
Pressurizer Safety Valve Lift Settings

VALVE NUMBER	LIFT SETTING (psia ± 3%)
RV-1039	2580
RV-1040	2540
RV-1041	2500

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.11 Pressurizer Power Operated Relief Valves (PORVs)

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

APPLICABILITY: MODES 1 and 2,
MODE 3 with all PCS cold leg temperatures ≥ 430°F.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One PORV inoperable.	A.1	Close associated block valve.	1 hour
	AND		
	A.2	Restore PORV to OPERABLE status.	72 hours
B. One block valve inoperable.	B.1	Place associated PORV in manual control.	1 hour
	AND		
	B.2	Restore block valve to OPERABLE status.	72 hours

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Two PORVs inoperable.	C.1	Close associated block valves.	1 hour
	AND		
	C.2	Restore at least one PORV to OPERABLE status.	2 hours
D. Two block valves inoperable.	D.1	Place associated PORVs in manual control.	1 hour
	AND		
	D.2	Restore at least one block valve to OPERABLE status.	2 hours
E. Required Action and associated Completion Time not met.	E.1	Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.11.1	Perform a complete cycle of each block valve.	Once prior to entering MODE 4 from MODE 5 if not performed within previous 92 days
SR 3.4.11.2	Perform a complete cycle of each PORV with PCS average temperature > 200°F.	18 months

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.12 Low Temperature Overpressure Protection (LTOP) System

LCO 3.4.12 An LTOP System shall be OPERABLE with:

a. Both High Pressure Safety Injection (HPSI) pumps incapable of injecting into the PCS, and

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

1. LCO 3.4.12.a is only required when any PCS cold leg temperature is < 300°F.

2. LCO 3.4.12.a does not prohibit the use of the HPSI pumps for emergency addition of makeup to the PCS.

---

b. One of the following pressure relief capabilities:

1. Two Power Operated Relief Valves (PORVs) with lift settings as specified in Figure 3.4.12-1; or

2. The PCS depressurized and a PCS vent capable of relieving ≥ 167 gpm at a pressure of 315 psia.

APPLICABILITY: MODE 3 when any PCS cold leg temperature is < 430°F,
MODES 4 and 5,
MODE 6 when the reactor vessel head is on.

ACTIONS

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

LCO 3.0.4.b is not applicable to PORVs when entering MODE 4.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two HPSI pumps capable of injecting into the PCS.	A.1 Initiate action to verify no HPSI pump is capable of injecting into the PCS.	Immediately

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One required PORV inoperable and pressurizer water level ≤ 57%.	B.1 Restore required PORV to OPERABLE status.	7 days
C. One required PORV inoperable and pressurizer water level > 57%.	C.1 Restore required PORV to OPERABLE status.	24 hours
D. Two required PORVs inoperable. OR Required Action and associated Completion Time not met. OR LTOP System inoperable for any reason other than Condition A, B, or C.	D.1 Depressurize PCS and establish PCS vent capable of relieving ≥ 167 gpm at a PCS pressure of 315 psia.	8 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.12.1	----------NOTE---------- Only required to be met when complying with LCO 3.4.12.a. ---------- Verify both HPSI pumps are incapable of injecting into the PCS.	12 hours
SR 3.4.12.2	Verify required PCS vent, capable of relieving ≥ 167 gpm at a PCS pressure of 315 psia, is open.	12 hours for unlocked open vent valve(s) AND 31 days for locked open vent valve(s)
SR 3.4.12.3	Verify PORV block valve is open for each required PORV.	72 hours
SR 3.4.12.4	----------NOTE---------- Not required to be performed until 12 hours after decreasing any PCS cold leg temperature to < 430°F. ---------- Perform CHANNEL FUNCTIONAL TEST on each required PORV, excluding actuation.	31 days
SR 3.4.12.5	Perform CHANNEL CALIBRATION on each required PORV actuation channel.	18 months

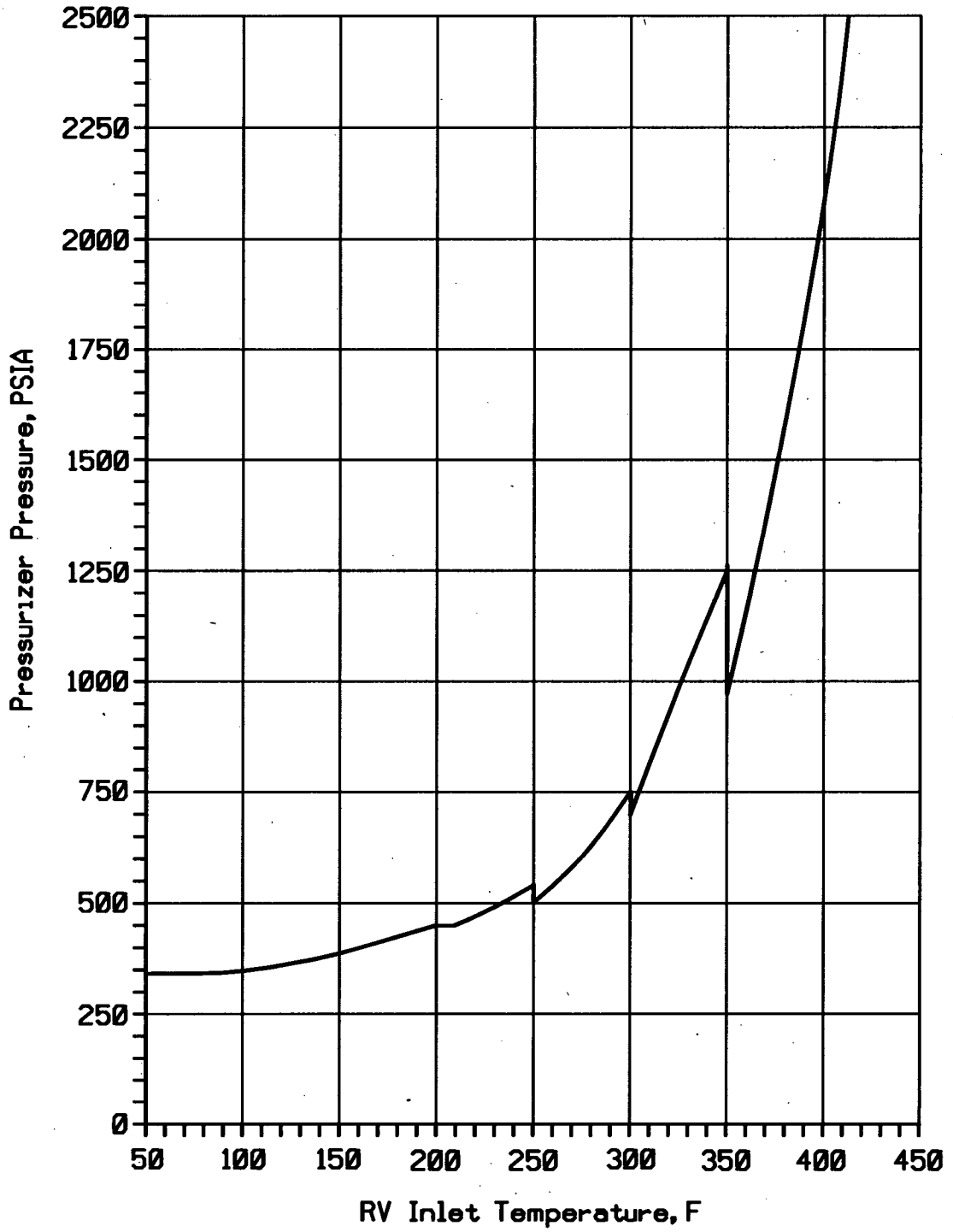


Figure 3.4.12-1 (Page 1 of 1)
LTOP Setpoint Limit

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.13 PCS Operational LEAKAGE

LCO 3.4.13 PCS operational LEAKAGE shall be limited to:

a. No pressure boundary LEAKAGE;

b. 1 gpm unidentified LEAKAGE;

c. 10 gpm identified LEAKAGE; and

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

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. PCS operational LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE or primary to secondary leakage.	A.1 Reduce LEAKAGE to within limits.	4 hours
B. Required Action and associated Completion Time not met. OR Pressure boundary LEAKAGE exists. OR Primary to secondary LEAKAGE not within limit.	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	----------NOTES---------- 1. Not required to be performed in MODE 3 or 4 until 12 hours of steady state operation. 2. Not applicable to primary to secondary LEAKAGE. ---------- Verify PCS operational LEAKAGE is within limits by performance of PCS water inventory balance.	----------NOTE-------- Only required to be performed during steady state operation ---------- 72 hours
SR 3.4.13.2	----------NOTE---------- Not required to be performed until 12 hours after establishment of steady state operation. ---------- Verify primary to secondary LEAKAGE is ≤150 gallons per day through any one SG.	72 Hours

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.14 PCS Pressure Isolation Valve (PIV) Leakage

LCO 3.4.14 Leakage from each PCS PIV shall be within limits and both Shutdown Cooling (SDC) suction valve interlocks shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4, except during the SDC mode of operation, or transition to or from, the SDC mode of operation.

ACTIONS

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

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

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more flow paths with leakage from one or more PCS PIVs not within limit.	----------NOTE---------- Each valve used to satisfy Required Action A.1 must have been verified to meet SR 3.4.14.1 and be on the PCS pressure boundary or the high pressure portion of the system. ----------	(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.1	Isolate the high pressure portion of the affected system from the low pressure portion by use of one closed manual, deactivated automatic, or check valve.	4 hours
	AND		
	A.2	Restore PCS PIV to within limits.	72 hours
B. Required Action and associated Completion Time for Condition A not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 5.	36 hours
C. One or both SDC suction valve interlocks inoperable.	C.1	Isolate the affected penetration by use of one closed deactivated valve.	4 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.14.1	----------NOTES---------- 1. Only required to be performed in MODES 1 and 2. 2. Leakage rates ≤ 5.0 gpm are unacceptable if the latest measured rate exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible leakage rate of 5.0 gpm by 50% or greater. 3. Minimum test differential pressure shall not be less than 150 psid. ---------- Verify leakage from each PCS PIV is equivalent to ≤ 5 gpm at a PCS pressure of 2060 psia.	18 months AND Once prior to entering MODE 2 whenever the plant has been in MODE 5 for 7 days or more, if leakage testing has not been performed in the previous 9 months
SR 3.4.14.2	Verify each SDC suction valve interlock prevents its associated valve from being opened with a simulated or actual PCS pressure signal ≥ 280 psia.	18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.14.3	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Verify each of the four Low Pressure Safety Injection (LPSI) check valves are closed.	Prior to entering MODE 2 after each use of the LPSI check valves for SDC

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.15 PCS Leakage Detection Instrumentation

LCO 3.4.15 Three of the following PCS leakage detection instrumentation channels shall be OPERABLE:

a. One containment sump level indicating channel;

b. One containment atmosphere gaseous activity monitoring channel;

c. One containment air cooler condensate level switch channel;

d. One containment atmosphere humidity monitoring channel.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or two required leak detection instrument channels inoperable.	A.1	Perform SR 3.4.13.1 (PCS water inventory balance).	Once per 24 hours
	AND		
	A.2	Restore inoperable channel(s) to OPERABLE status.	30 days
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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. All required channels inoperable.	C.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.15.1	Perform CHANNEL CHECK of the required containment sump level indicator.	12 hours
SR 3.4.15.2	Perform CHANNEL CHECK of the required containment atmosphere gaseous activity monitor.	12 hours
SR 3.4.15.3	Perform CHANNEL CHECK of the required containment atmosphere humidity monitor.	12 hours
SR 3.4.15.4	Perform CHANNEL FUNCTIONAL TEST of the required containment air cooler condensate level switch.	18 months
SR 3.4.15.5	Perform CHANNEL CALIBRATION of the required containment sump level indicator.	18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.15.6	Perform CHANNEL CALIBRATION of the required containment atmosphere gaseous activity monitor.	18 months
SR 3.4.15.7	Perform CHANNEL CALIBRATION of the required containment atmosphere humidity monitor.	18 months

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.16 PCS Specific Activity

LCO 3.4.16 The specific activity of the primary coolant shall be within limits.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DOSE EQUIVALENT I-131 > 1.0 μCi/gm.	----------NOTE---------- LCO 3.0.4.c is applicable. ----------	
	A.1 Verify DOSE EQUIVALENT I-131 < 40 μCi/gm.	Once per 4 hours
	AND	
	A.2 Restore DOSE EQUIVALENT I-131 to within limit.	48 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. OR DOSE EQUIVALENT I-131 $\geq$ 40 μCi/gm. OR Gross specific activity of the primary coolant not within limit.	B.1 Be in MODE 3 with T_{ave} < 500°F.	6 hours

SURVEILLANCE REQUIREMENTS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.16.2	----------NOTE---------- Only required to be performed in MODE 1. ---------- Verify primary coolant DOSE EQUIVALENT I-131 specific activity ≤ 1.0 μCi/gm.	14 days AND Once between 2 and 6 hours after THERMAL POWER change of ≥ 15% RTP within a 1 hour period
SR 3.4.16.3	----------NOTE---------- Not required to be performed until 31 days after a minimum of 2 EFPD and 20 days of MODE 1 operation have elapsed since the reactor was last subcritical for ≥ 48 hours. ---------- Determine $\bar{E}$ from a sample taken in MODE 1 after a minimum of 2 EFPD and 20 days of MODE 1 operation have elapsed since the reactor was last subcritical for ≥ 48 hours.	184 days

3.4 PRIMARY COOLANT SYSTEM (PCS)

3.4.17 Steam Generator (SG) Tube Integrity

LCO 3.4.17 SG Tube Integrity shall be maintained.

AND

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

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more SG tubes satisfying the tube repair criteria and not plugged in accordance with the Steam Generator Program.	A.1 Verify tube integrity of the affected tube(s) is maintained until the next refueling outage or SG tube inspection. AND A.2 Plug the affected tube(s) in accordance with the Steam Generator Program.	7 days Prior to entering MODE 4 following the next refueling outage or SG tube inspection
B. Required Action and associated Completion Time of Condition A not met. OR SG tube integrity not maintained.	B.1 Be in MODE 3 AND B.2 Be in Mode 5	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

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

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.1 Safety Injection Tanks (SITs)

LCO 3.5.1 Four SITs shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SIT inoperable due to boron concentration not within limits. OR One SIT inoperable due to the inability to verify level or pressure.	A.1 Restore SIT to OPERABLE status.	72 hours
B. One SIT inoperable for reasons other than Condition A.	B.1 Restore SIT to OPERABLE status.	24 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3.	6 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 $\geq$ 1040 ft^3 and $\leq$ 1176 ft^3.	12 hours
SR 3.5.1.3	Verify nitrogen cover pressure in each SIT is $\geq$ 200 psig.	12 hours
SR 3.5.1.4	Verify boron concentration in each SIT is $\geq$ 1720 ppm and $\leq$ 2500 ppm.	31 days
SR 3.5.1.5	Verify power is removed from each SIT isolation valve operator.	31 days

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.2 ECCS - Operating

LCO 3.5.2 Two ECCS trains shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with Primary Coolant System (PCS) temperature ≥ 325°F.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One LPSI subsystem inoperable.	A.1	Restore LPSI subsystem to OPERABLE status.	7 days
B. One or more ECCS trains inoperable for reasons other than Condition A.	B.1	Restore train(s) to OPERABLE status.	72 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 AND	Be in MODE 3.	6 hours
	C.2	Reduce PCS temperature to < 325°F.	24 hours
D. Less than 100% of the required ECCS flow available.	D.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1	Verify the following valves and hand switches are in the open position. Valve/Hand Switch Number — Function CV-3027 — SIRWT Recirc Valve HS-3027A — Hand Switch For CV-3027 HS-3027B — Hand Switch For CV-3027 CV-3056 — SIRWT Recirc Valve HS-3056A — Hand Switch For CV-3056 HS-3056B — Hand Switch For CV-3056	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 CV-3006, "SDC Flow Control Valve," is open and its air supply is isolated.	31 days
SR 3.5.2.4	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.5.2.5	Verify each ECCS automatic valve 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.	18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.6	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	18 months
SR 3.5.2.7	Verify each LPSI pump stops on an actual or simulated actuation signal.	18 months
SR 3.5.2.8	Verify, for each ECCS throttle valve listed below, each position stop is in the correct position. Valve Number — Function MO-3008 — LPSI to Cold leg 1A MO-3010 — LPSI to Cold leg 1B MO-3012 — LPSI to Cold leg 2A MO-3014 — LPSI to Cold leg 2B MO-3082 — HPSI to Hot leg 1 MO-3083 — HPSI to Hot leg 1	18 months
SR 3.5.2.9	Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet screens show no evidence of structural distress or abnormal corrosion.	18 months

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.3 ECCS - Shutdown

LCO 3.5.3 One Low Pressure Safety Injection (LPSI) train shall be OPERABLE.

---NOTE---
A LPSI train may be considered OPERABLE during alignment and operation for shutdown cooling if capable of being manually realigned to the ECCS mode of operation.

APPLICABILITY: MODE 3 with Primary Coolant System (PCS) temperature < 325°F, MODE 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required LPSI train inoperable.	A.1 Initiate action to restore one LPSI train to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.3.1	The following SRs of Specification 3.5.2, "ECCS - Operating," are applicable: SR 3.5.2.2 SR 3.5.2.4 SR 3.5.2.9	In accordance with applicable SRs

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.4 Safety Injection Refueling Water Tank (SIRWT)

LCO 3.5.4 The SIRWT shall be OPERABLE.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.4.1	Verify SIRWT borated water temperature is ≥ 40°F and ≤ 100°F.	24 hours
SR 3.5.4.2	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Verify SIRWT borated water volume is ≥ 250,000 gallons.	7 days
SR 3.5.4.3	----------NOTE---------- Only required to be met in MODE 4. ---------- Verify SIRWT borated water volume is ≥ 200,000 gallons.	7 days
SR 3.5.4.4	Verify SIRWT boron concentration is ≥ 1720 ppm and ≤ 2500 ppm.	31 days

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.5 Trisodium Phosphate (TSP)

LCO 3.5.5 The TSP baskets shall contain ≥ 8,300 lbs and ≤ 11,000 lbs of active TSP.

APPLICABILITY: MODES 1, 2, and 3.

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.	6 hours
	AND		
	B.2	Be in MODE 4.	30 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.5.1	Verify the TSP baskets contain ≥ 8,300 lbs and ≤ 11,000 lbs of TSP.	18 months
SR 3.5.5.2	Verify that a sample from the TSP baskets provides adequate pH adjustment of borated water.	18 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 Leak Rate Testing Program.	In accordance with the Containment Leak Rate Testing Program
SR 3.6.1.2	Verify containment structural integrity in accordance with the Containment Structural Integrity Surveillance Program.	In accordance with the Containment Structural Integrity 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 through a "locked" air lock door to perform repairs on the affected air lock components.
2. Separate Condition entry is allowed for each air lock.
3. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage rate acceptance criteria.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 Lock the OPERABLE door closed in the affected air lock. AND ----------NOTE---------- Air lock doors in high radiation areas may be verified locked closed by administrative means. ---------- A.3 Verify the OPERABLE door is locked closed in the affected air lock.	24 hours 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 (continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	B.2	Lock an OPERABLE door closed in the affected air lock. AND ----------NOTE---------- Air lock doors in high radiation areas may be verified locked closed by administrative means. ----------	24 hours
	B.3	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. AND	Immediately
	C.2	Verify a door is closed in the affected air lock. AND	1 hour
	C.3	Restore air lock to OPERABLE status.	24 hours
D. Required Action and associated Completion Time not met.	D.1	Be in MODE 3. AND	6 hours
	D.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.2.1	----------NOTES---------- 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1. ---------- Perform required air lock leakage rate testing in accordance with the Containment Leak Rate Testing Program.	In accordance with the Containment Leak 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, except for 8 inch purge exhaust valves and 12 inch air room supply valves 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.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ----------NOTE---------- Only applicable to penetration flow paths with two containment isolation valves. ---------- One or more penetration flow paths with one containment isolation valve inoperable (except for purge exhaust valve or air room supply valve not locked closed).	A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured. AND	4 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	----------NOTE---------- Isolation devices in high radiation areas may be verified by use of administrative means. ----------	
	A.2 Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment
B. ----------NOTE---------- Only applicable to penetration flow paths with two containment isolation valves. ---------- One or more penetration flow paths with two containment isolation valves inoperable (except for purge exhaust valve or air room supply valve not locked closed).	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

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. ----------NOTE---------- Only applicable to penetration flow paths with only one containment isolation valve and a closed system. ---------- One or more penetration flow paths with one containment isolation valve inoperable.	C.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange. AND ----------NOTE---------- Isolation devices in high radiation areas may be verified by use of administrative means. ---------- C.2 Verify the affected penetration flow path is isolated.	72 hours Once per 31 days
D. One or more purge exhaust or air room supply valves not locked closed.	D.1 Lock closed the affected valves.	1 hour
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3. AND E.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.3.1	Verify each 8 inch purge valve and 12 inch air room supply valve is locked closed.	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 manual containment isolation valve and blind flange that is located outside containment and not locked, sealed, or otherwise secured in position, and is required to be closed during accident conditions, is closed, except for containment isolation valves that are open under administrative controls.	31 days
SR 3.6.3.3	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. ----------	
	Verify each manual containment isolation valve and blind flange that is located inside containment and not locked, sealed, or otherwise secured in position, and required to be closed during accident conditions, is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
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 containment 8 inch purge exhaust and 12 inch air room supply valve is closed by performance of a leakage rate test.	184 days
SR 3.6.3.6	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.	18 months

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure

LCO 3.6.4 Containment pressure shall be ≤ 1.0 psig in MODES 1 and 2 and ≤ 1.5 psig in MODES 3 and 4.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment pressure not within limit.	A.1 Restore containment pressure to within limit.	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 limit.	12 hours

3.6 CONTAINMENT SYSTEMS

3.6.5 Containment Air Temperature

LCO 3.6.5 Containment average air temperature shall be ≤ 140°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 Cooling Systems

LCO 3.6.6 Two containment cooling trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment cooling trains inoperable.	A.1 Restore train(s) to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 30 hours
C. Less than 100% of the required post accident containment cooling capability available.	C.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6.1	Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.6.2	Operate each Containment Air Cooler Fan Unit for ≥ 15 minutes.	31 days
SR 3.6.6.3	Verify the containment spray piping is full of water to the 735 ft elevation in the containment spray header.	31 days
SR 3.6.6.4	Verify total service water flow rate, when aligned for accident conditions, is ≥ 4800 gpm to Containment Air Coolers VHX-1, VHX-2, and VHX-3.	18 months
SR 3.6.6.5	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 3.6.6.6	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to its correct position on an actual or simulated actuation signal.	18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6.7	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	18 months
SR 3.6.6.8	Verify each containment cooling fan starts automatically on an actual or simulated actuation signal.	18 months
SR 3.6.6.9	Verify each spray nozzle is unobstructed.	Following maintenance which could result in nozzle blockage

LCO 3.6.7 AND BASES DELETED: REFER TO AMENDMENT 221 DATED 1/11/05

3.7 PLANT SYSTEMS

3.7.1 Main Steam Safety Valves (MSSVs)

LCO 3.7.1 Twenty-three MSSVs shall be OPERABLE as specified in Table 3.7.1-1.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more required MSSVs inoperable.	A.1	Restore required MSSVs 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.	30 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	Verify each required MSSV lift setting is within the limits of Table 3.7.1-1 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 (page 1 of 1)
Main Steam Safety Valve Lift Settings

VALVE NUMBER		LIFT SETTING (psig ± 3%)
Steam Generator A	Steam Generator B	
RV-0703 RV-0704 RV-0705 RV-0706	RV-0701 RV-0702 RV-0707 RV-0708	1025
RV-0713 RV-0714 RV-0715 RV-0716	RV-0709 RV-0710 RV-0711 RV-0712	1005
RV-0717 RV-0718 RV-0723 RV-0724	RV-0719 RV-0720 RV-0721 RV-0722	985

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 both MSIVs are closed and de-activated.

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.	8 hours
	AND		
	C.2	Verify MSIV is closed.	Once per 7 days
D. Required Action and associated Completion Time of Condition C not met.	D.1	Be in MODE 3.	6 hours
	AND		
	D.2	Be in MODE 4.	30 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.2.1	Verify closure time of each MSIV is ≤ 5 seconds on an actual or simulated actuation signal from each train under no flow conditions.	18 months

3.7 PLANT SYSTEMS

3.7.3 Main Feedwater Regulating Valves (MFRVs) and MFRV Bypass Valves

LCO 3.7.3 Two MFRVs and two MFRV bypass valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3 except when both MFRVs and both MFRV bypass valves are either closed and de-activated, or isolated by closed manually actuated valves.

ACTIONS

---NOTE---

Separate Condition entry is allowed for each valve.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more MFRVs or MFRV bypass valves inoperable.	A.1	Close or isolate inoperable MFRV(s) or MFRV bypass valve(s).	8 hours
	AND		
	A.2	Verify inoperable MFRV(s) or MFRV bypass valve(s) is closed or isolated.	Once per 7 days
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 4.	30 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify the closure time of each MFRV and MFRV bypass valve is ≤ 22 seconds on a actual or simulated actuation signal.	18 months

3.7 PLANT SYSTEMS

3.7.4 Atmospheric Dump Valves (ADVs)

LCO 3.7.4 One ADV per steam generator shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required ADV inoperable.	A.1	Restore ADV to OPERABLE status.	7 days
B. Two required ADVs inoperable.	B.1	Restore one ADV to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 4 without reliance upon steam generator for heat removal.	30 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Verify one complete cycle of each ADV.	18 months

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

LCO 3.7.5 Two AFW trains shall be OPERABLE.

---NOTES---

1. Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4.
2. The steam driven pump is only required to be OPERABLE prior to making the reactor critical.
3. Two AFW pumps may be placed in manual for testing, for a period of up to 4 hours.

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

ACTIONS

---NOTE---

LCO 3.0.4.b is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more AFW trains inoperable in MODE 1, 2, or 3.	A.1 Restore train(s) to OPERABLE status.	72 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. OR Less than 100% of the required AFW flow available to either steam generator. OR Less than two AFW pumps OPERABLE in MODE 1, 2, OR 3.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 30 hours
C. Less than 100% of the required AFW flow available, to both steam generators.	----------NOTE---------- LCO 3.0.3 and all other LCO Required Actions requiring MODE changes or power reductions are suspended until at least 100% of the required AFW flow is available. ---------- C.1 Initiate action to restore one AFW train to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.5.1	Verify each required AFW manual, power operated, and automatic valve in each water flow path and in the steam supply flow path to the steam turbine driven pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.5.2	----------NOTE---------- Not required to be met for the turbine driven AFW pump in MODE 3 below 800 psig in the steam generators. ---------- Verify the developed head of each required AFW pump at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.7.5.3	----------NOTE---------- Only required to be met in MODES 1, 2 or 3 when AFW is not in operation. ---------- Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	18 months
SR 3.7.5.4	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Verify each required AFW pump starts automatically on an actual or simulated actuation signal.	18 months

3.7 PLANT SYSTEMS

3.7.6 Condensate Storage and Supply

LCO 3.7.6 The combined useable volume of the Condensate Storage Tank (CST) and Primary Makeup Storage Tank (T-81) shall be ≥ 100,000 gallons.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Condensate volume not within limit.	A.1	Verify OPERABILITY of backup water supplies.	4 hours AND Once per 12 hours thereafter
	AND		
	A.2	Restore condensate volume to within limit.	7 days
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 4 without reliance on steam generator for heat removal.	30 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify condensate useable volume is ≥ 100,000 gallons.	12 hours

3.7 PLANT SYSTEMS

3.7.7 Component Cooling Water (CCW) System

LCO 3.7.7 Two CCW trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more CCW trains inoperable.	A.1 Restore train(s) to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours
C. Less than 100% of the required post accident CCW cooling capability available.	C.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.7.1	----------NOTE---------- Isolation of CCW flow to individual components does not render the CCW System inoperable. ---------- Verify each CCW manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.7.2	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Verify each CCW automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	18 months
SR 3.7.7.3	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Verify each CCW pump starts automatically on an actual or simulated actuation signal in the "with standby power available" mode.	18 months

3.7 PLANT SYSTEMS

3.7.8 Service Water System (SWS)

LCO 3.7.8 Two SWS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more SWS trains inoperable.	A.1 Restore train(s) to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours
C. Less than 100% of the required post accident SWS cooling capability available.	C.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.1	----------NOTE---------- Isolation of SWS flow to individual components does not render SWS inoperable. ---------- Verify each SWS manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.8.2	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Verify each SWS 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.	18 months
SR 3.7.8.3	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Verify each SWS pump starts automatically on an actual or simulated actuation signal in the "with standby power available" mode.	18 months

3.7 PLANT SYSTEMS

3.7.9 Ultimate Heat Sink (UHS)

LCO 3.7.9 The UHS shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. UHS inoperable.	A.1	Be in MODE 3.	6 hours
	AND		
	A.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Verify water level of UHS is ≥ 568.25 ft above mean sea level.	24 hours
SR 3.7.9.2	Verify water temperature of UHS is ≤ 85°F.	24 hours

3.7 PLANT SYSTEMS

3.7.10 Control Room Ventilation (CRV) Filtration

LCO 3.7.10 Two CRV Filtration trains shall be OPERABLE.

----------NOTE----------
The control room boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, 4,
During CORE ALTERATIONS,
During movement of irradiated fuel assemblies,
During movement of a fuel cask in or over the Spent Fuel Pool (SFP).

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One CRV Filtration train inoperable.	A.1	Restore CRV Filtration train to OPERABLE status.	7 days
B. Two CRV Filtration trains inoperable due to inoperable control room boundary in MODE 1, 2, 3, or 4.	B.1	Initiate preplanned compensatory measures.	Immediately
	AND		
	B.2	Restore control room boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 5.	36 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met during CORE ALTERATIONS, during movement of irradiated fuel assemblies, or during movement of a fuel cask in or over the SFP.	D.1 Place OPERABLE CRV Filtration train in emergency mode. OR D.2.1 Suspend CORE ALTERATIONS. AND D.2.2 Suspend movement of irradiated fuel assemblies. AND D.2.3 Suspend movement of a fuel cask in or over the SFP.	Immediately Immediately Immediately Immediately
E. Two CRV Filtration trains inoperable during CORE ALTERATIONS, during movement of irradiated fuel assemblies, or during movement of a fuel cask in or over the SFP.	E.1 Suspend CORE ALTERATIONS. AND E.2 Suspend movement of irradiated fuel assemblies. AND E.3 Suspend movement of a fuel cask in or over the SFP.	Immediately Immediately Immediately

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two CRV Filtration trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Operate each CRV Filtration train for ≥ 10 continuous hours with associated heater (VHX-26A or VHX-26B) operating.	31 days
SR 3.7.10.2	Perform required CRV Filtration filter testing in accordance with Ventilation Filter Testing Program.	In accordance with the Ventilation Filter Testing Program
SR 3.7.10.3	----------NOTE---------- Only required to be met in MODES 1, 2, 3, and 4, and during movement of irradiated fuel assemblies in containment. ---------- Verify each CRV Filtration train actuates on an actual or simulated actuation signal.	18 months
SR 3.7.10.4	Verify one CRV Filtration train can maintain a positive pressure of ≥ 0.125 inches water gauge, relative to the adjacent area during the emergency mode of operation, at an emergency ventilation flow rate of ≥ 3040 cfm and ≤ 3520 cfm.	18 months

3.7 PLANT SYSTEMS

3.7.11 Control Room Ventilation (CRV) Cooling

LCO 3.7.11 Two CRV Cooling trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4,
During CORE ALTERATIONS,
During movement of irradiated fuel assemblies,
During movement of a fuel cask in or over the Spent Fuel Pool (SFP).

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One CRV Cooling train inoperable.	A.1	Restore CRV Cooling 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.	6 hours
	AND		
	B.2	Be in MODE 5.	36 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A not met during CORE ALTERATIONS, during movement of irradiated fuel assemblies, or movement of a fuel cask in or over the SFP.	C.1 Place OPERABLE CRV Cooling train in operation. OR C.2.1 Suspend CORE ALTERATIONS. AND C.2.2 Suspend movement of irradiated fuel assemblies. AND C.2.3 Suspend movement of a fuel cask in or over the SFP.	Immediately Immediately Immediately Immediately
D. Two CRV Cooling trains inoperable during CORE ALTERATIONS, during movement of irradiated fuel assemblies, or movement of a fuel cask in or over the SFP.	D.1 Suspend CORE ALTERATIONS. AND D.2 Suspend movement of irradiated fuel assemblies. AND D.3 Suspend movement of a fuel cask in or over the SFP.	Immediately Immediately Immediately

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Verify each CRV Cooling train has the capability to remove the assumed heat load.	18 months

3.7 PLANT SYSTEMS

3.7.12 Fuel Handling Area Ventilation System

LCO 3.7.12 The Fuel Handling Area Ventilation System shall be OPERABLE with one fuel handling area exhaust fan aligned to the emergency filter bank and in operation.

APPLICABILITY: During movement of irradiated fuel assemblies in the fuel handling building when irradiated fuel assemblies with < 30 days decay time are in the fuel handling building,

During movement of a fuel cask in or over the SFP when irradiated fuel assemblies with < 90 days decay time are in the fuel handling building,

During CORE ALTERATIONS when irradiated fuel assemblies with < 30 days decay time are in the containment with the equipment hatch open,

During movement of irradiated fuel assemblies in the containment when irradiated fuel assemblies with < 30 days decay time are in the containment with the equipment hatch open.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Fuel Handling Area Ventilation System not aligned or in operation. OR Fuel Handling Area Ventilation System inoperable.	A.1	Suspend movement of fuel assemblies. AND	Immediately
	A.2	Suspend CORE ALTERATIONS. AND	Immediately
	A.3	Suspend movement of a fuel cask in or over the SFP.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.12.1	Perform required Fuel Handling Area Ventilation System filter testing in accordance with the Ventilation Filter Testing Program.	In accordance with the Ventilation Filter Testing Program
SR 3.7.12.2	Verify the flow rate of the Fuel Handling Area Ventilation System, when aligned to the emergency filter bank, is ≥ 5840 cfm and ≤ 8760 cfm.	18 months

3.7 PLANT SYSTEMS

3.7.13 Engineered Safeguards Room Ventilation (ESRV) Dampers

LCO 3.7.13 Two ESRV Damper trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more ESRV Damper trains inoperable.	A.1 Initiate action to isolate associated ESRV Damper train(s).	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.13.1	Verify each ESRV Damper train closes on an actual or simulated actuation signal.	31 days

3.7 PLANT SYSTEMS

3.7.14 Spent Fuel Pool (SFP) Water Level

LCO 3.7.14 The SFP water level shall be ≥ 647 ft elevation.

---NOTE---
SFP level may be below the 647 ft elevation to support fuel cask movement, if the displacement of water by the fuel cask when submerged in the SFP, would raise SFP level to ≥ 647 ft elevation.

APPLICABILITY: During movement of irradiated fuel assemblies in the SFP,
During movement of a fuel cask in or over the SFP.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. SFP water level not within limit.	A.1	Suspend movement of irradiated fuel assemblies in SFP.	Immediately
	AND		
	A.2	Suspend movement of fuel cask in or over the SFP.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.14.1	Verify the SFP water level is ≥ 647 ft elevation.	7 days

3.7 PLANT SYSTEMS

3.7.15 Spent Fuel Pool (SFP) Boron Concentration

LCO 3.7.15 The SFP boron concentration shall be ≥ 1720 ppm.

APPLICABILITY: When fuel assemblies are stored in the Spent Fuel Pool.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. SFP boron concentration not within limit.	A.1	Suspend movement of fuel assemblies in the SFP.	Immediately
	AND		
	A.2	Initiate action to restore SFP boron concentration to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.15.1	Verify the SFP boron concentration is within limit.	7 days

3.7 PLANT SYSTEMS

3.7.16 Spent Fuel Assembly Storage

LCO 3.7.16 The combination of initial enrichment, burnup, and decay time of each fuel assembly stored in Region II shall be within the requirements of Table 3.7.16-1.

APPLICABILITY: Whenever any fuel assembly is stored in Region II of either the spent fuel pool or the north tilt pit.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Initiate action to move the noncomplying fuel assembly from Region II.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.16.1	Verify by administrative means the combination of initial enrichment, burnup, and decay time of the fuel assembly is in accordance with Table 3.7.16-1.	Prior to storing the fuel assembly in Region II

TABLE 3.7.16-1 (page 1 of 1)

Spent Fuel Minimum Burnup and Decay Requirements
for Storage in Region II of the Spent Fuel Pool and North Tilt Pit

Initial Enrichment (Wt%)	Burnup (GWD/MTU) No Decay	Burnup (GWD/MTU) 1 Year Decay	Burnup (GWD/MTU) 3 Year Decay	Burnup (GWD/MTU) 5 Year Decay	Burnup (GWD/MTU) 8 Year Decay
≤ 1.14	0	0	0	0	0
> 1.14	3.477	3.477	3.477	3.477	3.477
1.20	3.477	3.477	3.477	3.477	3.477
1.40	7.951	7.844	7.464	7.178	6.857
1.60	11.615	11.354	10.768	10.319	9.847
1.80	14.936	14.535	13.767	13.187	12.570
2.00	18.021	17.502	16.561	15.875	15.117
2.20	21.002	20.417	19.313	18.499	17.611
2.40	23.900	23.201	21.953	21.034	20.050
2.60	26.680	25.905	24.497	23.487	22.378
2.80	29.388	28.528	27.006	25.879	24.678
3.00	32.044	31.114	29.457	28.243	26.942
3.20	34.468	33.457	31.698	30.397	29.008
3.40	36.848	35.783	33.920	32.544	31.079
3.60	39.152	38.026	36.059	34.615	33.077
3.80	41.419	40.226	38.163	36.650	35.049
4.00	43.661	42.422	40.257	38.673	37.007
4.20	45.987	44.684	42.415	40.778	39.028
4.40	48.322	46.950	44.588	42.877	41.041
4.60	50.580	49.158	46.690	44.911	43.003

(a) Linear interpolation between two consecutive points will yield acceptable results.

(b) Comparison of nominal assembly average burnup numbers to these in the table is acceptable if measurement uncertainty is ≤ 10%.

3.7 PLANT SYSTEMS

3.7.17 Secondary Specific Activity

LCO 3.7.17 The specific activity of the secondary coolant shall be ≤ 0.10 μCi/gm DOSE EQUIVALENT I-131.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.17.1	Verify the specific activity of the secondary coolant is within limit.	31 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - Operating

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

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

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

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

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 (offsite source check) for OPERABLE offsite circuit. AND A.2 Restore offsite circuit to OPERABLE status.	1 hour AND Once per 8 hours thereafter 72 hours AND 10 days from discovery of failure to meet LCO

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One DG inoperable.	B.1	Perform SR 3.8.1.1 (offsite source check) for the OPERABLE 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 is not inoperable due to common cause failure.	24 hours
	OR		
	B.3.2	Perform SR 3.8.1.2 (start test) for OPERABLE DG.	24 hours
	AND		
	B.4	Restore DG to OPERABLE status.	7 days AND 10 days from discovery of failure to meet LCO

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two offsite circuits inoperable.	C.1 Declare required feature(s) inoperable when its redundant required feature(s) is inoperable. AND C.2 Restore one offsite circuit to OPERABLE status.	12 hours from discovery of Condition C concurrent with inoperability of redundant required feature(s) 24 hours
D. One offsite circuit inoperable. AND One DG inoperable.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition D is entered with no AC power source to any train. ---------- D.1 Restore offsite circuit to OPERABLE status. OR D.2 Restore DG to OPERABLE status.	 12 hours 12 hours
E. Two DGs inoperable.	E.1 Restore one DG to OPERABLE status.	2 hours

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.1	Verify correct breaker alignment and voltage for each offsite circuit.	7 days
SR 3.8.1.2	Verify each DG starts from standby conditions and achieves: a. In ≤ 10 seconds, ready-to-load status; and b. Steady state voltage ≥ 2280 V and ≤ 2520 V, and frequency ≥ 59.5 Hz and ≤ 61.2 Hz.	31 days

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.1.3	----------NOTES---------- 1. Momentary transients outside the load range do not invalidate this test. 2. This Surveillance shall be conducted on only one DG at a time. 3. This Surveillance shall be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.2. ---------- Verify each DG is synchronized and loaded, and operates for ≥ 60 minutes: a. For ≥ 15 minutes loaded to greater than or equal to peak accident load; and b. For the remainder of the test at a load ≥ 2300 kW and ≤ 2500 kW.	31 days
SR 3.8.1.4	Verify each day tank contains ≥ 2500 gallons of fuel oil.	31 days
SR 3.8.1.5	Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ 68 Hz; b. Within 3 seconds following load rejection, the voltage is ≥ 2280 V and ≤ 2640 V; and c. Within 3 seconds following load rejection, the frequency is ≥ 59.5 Hz and ≤ 61.5 Hz.	18 months

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.1.6	Verify each DG, operating at a power factor ≤ 0.9, does not trip, and voltage is maintained ≤ 4000 V during and following a load rejection of ≥ 2300 kW and ≤ 2500 kW.	18 months
SR 3.8.1.7	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ----------	
	Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected shutdown loads through automatic load sequencer, 3. maintains steady state voltage ≥ 2280 V and ≤ 2520 V, 4. maintains steady state frequency ≥ 59.5 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected loads for ≥ 5 minutes.	18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.8	----------NOTE---------- Momentary transients outside the load and power factor ranges do not invalidate this test. ---------- Verify each DG, operating at a power factor ≤ 0.9, operates for ≥ 24 hours: a. For ≥ 100 minutes loaded ≥ its peak accident loading; and b. For the remaining hours of the test loaded ≥ 2300 kW and ≤ 2500 kW.	18 months
SR 3.8.1.9	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ---------- Verify each DG: a. Synchronizes with offsite power source while supplying its associated 2400 V bus upon a simulated restoration of offsite power; b. Transfers loads to offsite power source; and c. Returns to ready-to-load operation.	18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.10	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ----------	
	Verify the time of each sequenced load is within ± 0.3 seconds of design timing for each automatic load sequencer.	18 months
SR 3.8.1.11	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ----------	
	Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated safety injection 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 its automatic load sequencer, 3. achieves steady state voltage ≥ 2280 V and ≤ 2520 V, 4. achieves steady state frequency ≥ 59.5 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected loads for ≥ 5 minutes.	18 months

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources - Shutdown

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

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

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

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The 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
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
		(continued)

ACTIONS

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 offsite power circuit to OPERABLE status.	Immediately
B. The required DG inoperable.	B.1 Suspend CORE ALTERATIONS. AND	Immediately
	B.2 Suspend movement of irradiated fuel assemblies. AND	Immediately
	B.3 Initiate action to suspend operations involving positive reactivity additions. AND	Immediately
	B.4 Initiate action to restore required DG to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.2.1	For AC sources required to be OPERABLE, the following SRs of Specification 3.8.1, "AC Sources - Operating" are applicable: SR 3.8.1.1 SR 3.8.1.2 SR 3.8.1.4.	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel, Lube Oil, and Starting Air

LCO 3.8.3 For each Diesel Generator (DG):

a. The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits, and

b. Both diesel fuel oil transfer systems shall be OPERABLE.

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 inventory < 23,700 gallons and > 20,110 gallons in storage tank.	A.1 Restore fuel oil inventory to within limits.	48 hours
B. Stored lube oil inventory < 200 gallons and > 160 gallons.	B.1 Restore stored lube oil inventory to within limits.	48 hours
C. Fuel transfer system (P-18A) inoperable.	C.1 Restore fuel transfer system to OPERABLE status.	15 hours
D. Fuel transfer system (P-18B) inoperable.	D.1 Restore fuel transfer system to OPERABLE status.	7 days

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Both fuel transfer systems inoperable.	E.1 Restore one fuel transfer system to OPERABLE status.	8 hours
F. Fuel oil properties other than viscosity, and water and sediment, not within limits.	F.1 Restore stored fuel oil properties to within limits.	30 days
G. Required Action and associated Completion Time not met. OR Stored diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than Condition A, B, or F.	G.1 Declare associated DG(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify the fuel oil storage tank contains ≥ 23,700 gallons of fuel.	24 hours
SR 3.8.3.2	Verify stored lube oil inventory is ≥ 200 gallons.	31 days
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Fuel Oil Testing Program.	In accordance with the Fuel Oil Testing Program
SR 3.8.3.4	Verify each DG air start receiver pressure is ≥ 200 psig.	31 days
SR 3.8.3.5	Check for and remove excess accumulated water from the fuel oil storage tank.	92 days
SR 3.8.3.6	Verify the fuel oil transfer system operates to transfer fuel oil from the fuel oil storage tank to each DG day tank and engine mounted tank.	92 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources - Operating

LCO 3.8.4 The Left Train and Right Train DC electrical power sources shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required DC electrical power source battery charger inoperable.	A.1	Verify functional cross-connected battery charger is connected supplying power to the affected DC train.	2 hours
	AND		
	A.2	Restore required DC electrical power source battery charger to OPERABLE status.	7 days
B. One required DC electrical power source battery inoperable.	B.1	Verify OPERABLE directly connected and functional cross-connected battery chargers are connected supplying power to the affected DC train.	2 hours
	AND		
	B.2	Restore required DC electrical power source battery to OPERABLE status.	24 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
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. OR Verify battery connection resistance is ≤ 50 μohm for inter-cell connections, ≤ 360 μohm for inter-rack connections, and ≤ 360 μohm for inter-tier connections.	92 days
SR 3.8.4.3	Inspect battery cells, cell plates, and racks for visual indication of physical damage or abnormal deterioration that could degrade battery performance.	12 months

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.4.4	Remove visible terminal corrosion and verify battery cell to cell and terminal connections are coated with anti-corrosion material.	12 months
SR 3.8.4.5	Verify battery connection resistance is ≤ 50 μohm for inter-cell connections, ≤ 360 μohm for inter-rack connections, and ≤ 360 μohm for inter-tier connections.	12 months
SR 3.8.4.6	Verify each required battery charger supplies ≥ 180 amps at ≥ 125 V for ≥ 8 hours.	18 months
SR 3.8.4.7	----------NOTES---------- 1. 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. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. --- 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.	18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.8	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ---------- 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 DC electrical power source(s) 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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required DC electrical power sources inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	AND	
	A.2.3 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	AND	

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.4 Initiate action to restore required DC electrical power source(s) to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.5.1	For DC sources required to be OPERABLE, the following SRs are applicable: SR 3.8.4.1 SR 3.8.4.3 SR 3.8.4.5 SR 3.8.4.2 SR 3.8.4.4 SR 3.8.4.6.	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Cell Parameters

LCO 3.8.6 Battery cell parameters for the Left Train and Right Train batteries shall be within limits.

APPLICABILITY: When associated DC electrical power source(s) 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 cells electrolyte level and float voltage meet Table 3.8.6-1 Category C limits.	1 hour
	AND		
	A.2	Verify battery cell parameters meet Table 3.8.6-1 Category C limits.	24 hours AND Once per 7 days thereafter
	AND		
	A.3	Restore battery cell parameters to Category A and B limits of Table 3.8.6-1.	31 days

ACTIONS

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 < 70°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.	31 days
SR 3.8.6.2	Verify average electrolyte temperature of representative cells is ≥ 70°F.	31 days
SR 3.8.6.3	Verify battery cell parameters meet Table 3.8.6-1 Category B limits.	92 days

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

PARAMETER	CATEGORY A: NORMAL LIMITS FOR EACH DESIGNATED PILOT CELL	CATEGORY B: NORMAL LIMITS FOR EACH CONNECTED CELL	CATEGORY C: ALLOWABLE LIMITS FOR EACH CONNECTED CELL
Electrolyte Level	> Minimum level indication mark, and ≤ ¼ inch above maximum level indication mark(a)	> Minimum level indication mark, and ≤ ¼ inch above maximum level indication mark(a)	Above top of plates, and not overflowing
Float Voltage	≥ 2.13 V	≥ 2.13 V	> 2.07 V
Specific Gravity(b)(c)	≥ 1.205	≥ 1.200 AND Average of 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 equalizing charges provided it is not overflowing.

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

(c) A battery charging current of < 2 amps when on float charge is acceptable for meeting specific gravity limits.

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 inverter inoperable.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating" with any Preferred AC bus de-energized. ---------- A.1 Restore inverter to OPERABLE status.	24 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 3.8.7.1	Verify correct inverter voltage, frequency, and alignment to Preferred AC 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 Preferred AC 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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required inverters inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	AND	
	A.2.3 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	AND	
	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, frequency, and alignment to required Preferred AC buses.	7 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems - Operating

LCO 3.8.9 Left Train and Right Train AC, DC, and Preferred AC 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 in one train inoperable.	A.1 Restore AC electrical power distribution subsystem(s) to OPERABLE status.	8 hours AND 16 hours from discovery of failure to meet LCO
B. One Preferred AC bus inoperable.	B.1 Restore Preferred AC bus to OPERABLE status.	8 hours AND 16 hours from discovery of failure to meet LCO
C. One or more DC electrical power distribution subsystems in one train inoperable.	C.1 Restore DC electrical power distribution subsystem(s) to OPERABLE status.	8 hours AND 16 hours from discovery of failure to meet LCO

ACTIONS

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
E. Two or more inoperable distribution subsystems that result in a loss of function.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.9.1	Verify correct breaker alignments and voltage to required AC, DC, and Preferred AC 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 Preferred AC 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

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

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.4 Initiate actions to restore required AC, DC, and Preferred AC bus electrical power distribution subsystems to OPERABLE status. AND	Immediately
	A.2.5 Declare associated required shutdown cooling train 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 Preferred AC bus electrical power distribution subsystems.	7 days

3.9 REFUELING OPERATIONS

3.9.1 Boron Concentration

LCO 3.9.1 Boron concentrations of the Primary Coolant System and the refueling cavity shall be maintained at the REFUELING BORON CONCENTRATION.

APPLICABILITY: MODE 6.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.1.1	Verify boron concentration is at the REFUELING BORON CONCENTRATION.	72 hours

3.9 REFUELING OPERATIONS

3.9.2 Nuclear Instrumentation

LCO 3.9.2 Two source range channels shall be OPERABLE.

APPLICABILITY: MODE 6.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One source range channel inoperable.	A.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	A.2	Suspend positive reactivity additions.	Immediately
B. Two source range channels inoperable.	B.1	Initiate action to restore one source range channel to OPERABLE status.	Immediately
	AND		
	B.2	Perform SR 3.9.1.1 (PCS boron concentration verification).	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 the CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION.	18 months

3.9 REFUELING OPERATIONS

3.9.3 Containment Penetrations

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

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

---NOTE---
The equipment hatch is only required to be closed when the Fuel Handling Area Ventilation System is not in compliance with LCO 3.7.12, "Fuel Handling Area Ventilation System."
---

b. One door in the personnel air lock closed;

---NOTE---
One door in the personnel air lock is only required to be closed when the equipment hatch is closed.
---

c. One door in the emergency air lock closed; and

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 Refueling Containment High Radiation Initiation signal.

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. AND	Immediately
	A.2 Suspend movement of irradiated fuel assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.3.1	Verify each required to be met containment penetration is in the required status.	7 days
SR 3.9.3.2	----------NOTE---------- Only required to be met for unisolated containment penetrations. ----------	
	Verify each required automatic isolation valve closes on an actual or simulated Refueling Containment High Radiation signal.	18 months

3.9 REFUELING OPERATIONS

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

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

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

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

2. The required SDC train may be made inoperable for ≤ 2 hours per 8 hour period for testing or maintenance, provided one SDC train is in operation providing flow through the reactor core, and core outlet temperature is ≤ 200°F.

APPLICABILITY: MODE 6 with the refueling cavity water level ≥ 647 ft elevation.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required SDC train inoperable or not in operation.	A.1	Initiate action to restore SDC train to OPERABLE status and operation.	Immediately
	AND		
	A.2	Suspend operations involving a reduction in primary coolant boron concentration.	Immediately
	AND		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.3	Suspend loading irradiated fuel assemblies in the core.	Immediately
	AND		
	A.4	Close all containment penetrations providing direct access from containment atmosphere to outside atmosphere.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.4.1	Verify one SDC train is in operation and circulating primary coolant at a flow rate of ≥ 1000 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 trains shall be OPERABLE, and one SDC train shall be in operation.

APPLICABILITY: MODE 6 with the refueling cavity water level < 647 ft elevation.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One SDC train inoperable.	A.1	Initiate action to restore SDC train to OPERABLE status.	Immediately
	OR		
	A.2	Initiate action to establish the refueling cavity water level ≥ 647 ft elevation.	Immediately

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. No SDC train OPERABLE or in operation.	B.1	Suspend operations involving a reduction in primary coolant boron concentration.	Immediately
	AND		
	B.2	Initiate action to restore one SDC train to OPERABLE status and to operation.	Immediately
	AND		
	B.3	Initiate action to close all containment penetrations providing direct access from containment atmosphere to outside atmosphere.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.5.1	Verify one SDC train is in operation and circulating primary coolant at a flow rate of ≥ 1000 gpm.	12 hours
SR 3.9.5.2	Verify correct breaker alignment and indicated power available to the required SDC pump that is not in operation.	7 days

3.9 REFUELING OPERATIONS

3.9.6 Refueling Cavity Water Level

LCO 3.9.6 The refueling cavity water level shall be maintained ≥ 647 ft elevation.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.6.1	Verify refueling cavity water level is ≥ 647 ft elevation.	24 hours

4.0 DESIGN FEATURES

4.1 Site Location

The Palisades Nuclear Plant is located on property owned by Consumers Energy on the eastern shore of Lake Michigan approximately four and one-half miles south of the southern city limits of South Haven, Michigan. The minimum distance to the boundary of the exclusion area as defined in 10 CFR 100.3 shall be 677 meters.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor core shall contain 204 fuel assemblies. Each assembly shall consist of a matrix of zircaloy-4 clad fuel rods with an initial composition of depleted, 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. A core plug or plugs may be used to replace one or more fuel assemblies subject to the analysis of the resulting power distribution. Poison may be placed in the fuel bundles for long-term reactivity control.

4.2.2 Control Rod Assemblies

The reactor core shall contain 45 control rods. Four of these control rods may consist of part-length absorbers. The control material shall be silver-indium-cadmium, as approved by the NRC.

4.3 Fuel Storage

4.3.1 Criticality

4.3.1.1 The Region I fuel storage racks (See Figure B 3.7.16-1) are designed and shall be maintained with:

a. Fuel assemblies having a maximum planar average U-235 enrichment of 4.95 weight percent;

4.0 DESIGN FEATURES

4.3 Fuel Storage

4.3.1 Criticality (continued)

b. $K_{eff} \leq 0.95$ if fully flooded with unborated water, which includes allowances for uncertainties as described in Section 9.11 of the FSAR.

c. A nominal 10.25 inch center to center distance between fuel assemblies with the exception of the single Type E rack which has a nominal 11.25 inch center to center distance between fuel assemblies; and

d. New or irradiated fuel assemblies.

4.3.1.2 The Region II fuel storage racks (See Figure B 3.7.16-1) are designed and shall be maintained with;

a. Fuel assemblies having maximum planar average U-235 enrichment of 4.60 weight percent;

b. Keff < 1.0 if fully flooded with unborated water, which includes allowances for uncertainties as described in Section 9.11 of the FSAR.

c. $K_{eff} \leq 0.95$ if fully flooded with water borated to 850 ppm, which includes allowance for uncertainties as described in Section 9.11 of the FSAR.

d. A nominal 9.17 inch center to center distance between fuel assemblies; and

e. New or irradiated fuel assemblies which meet the initial enrichment, burnup, and decay time requirements of Table 3.7.16-1.

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

a. Twenty four unirradiated fuel assemblies having a maximum planar average U-235 enrichment of 4.95 weight percent, and stored in accordance with the pattern shown in Figure 4.3-1, or

Thirty six unirradiated fuel assemblies having a maximum planar average U-235 enrichment of 4.05 weight percent, and stored in accordance with the pattern shown in Figure 4.3-1;

b. $K_{eff} \leq 0.95$ when flooded with either full density or low density (optimum moderation) water including allowances for uncertainties as described in Section 9.11 of the FSAR.

4.0 DESIGN FEATURES

4.3 Fuel Storage

4.3.1 Criticality (continued)

c. The pitch of the new fuel storage rack lattice being ≥ 9.375 inches and every other position in the lattice being permanently occupied by an 8" x 8" structural steel or core plugs, resulting in a nominal 13.26 inch center to center distance between fuel assemblies placed in alternating storage locations.

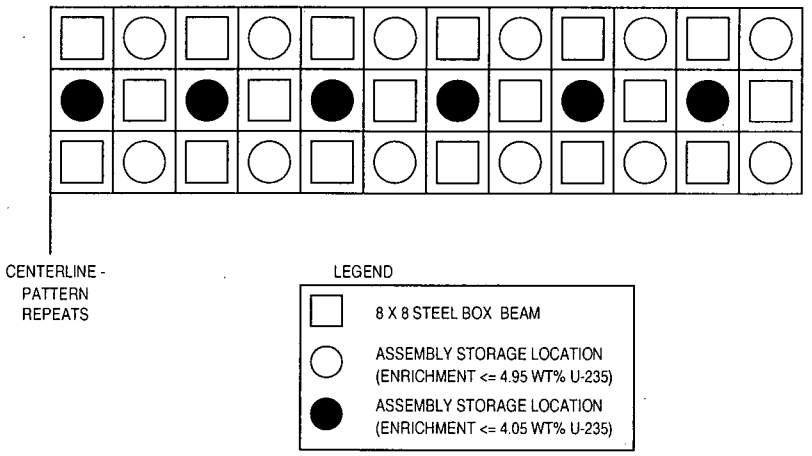
4.3.2 Drainage

The spent fuel storage pool cooling system suction and discharge piping is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 644 ft 5 inches.

4.3.3 Capacity

The spent fuel storage pool and north tilt pit are designed and shall be maintained with a storage capacity limited to no more than 892 fuel assemblies.

4.0 DESIGN FEATURES



Note: If any assemblies containing fuel enrichments greater than 4.05% U-235 are stored in the New Fuel Storage Rack, the center row must remain empty.

Figure 4.3-1 (page 1 of 1)
New Fuel Storage Rack Arrangement

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

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

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

5.1.2 The Shift Supervisor (SS) shall be responsible for the control room command function. During any absence of the SS from the control room while the plant 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 SS from the control room while the plant is in MODE 5 or 6 an individual with an active SRO license or Reactor Operator (RO) license shall be designated to assume the control room command function.

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

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

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

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

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

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

5.2.2 Plant Staff

a. A non-licensed operator shall be assigned when fuel is in the reactor and an additional non-licensed operator shall be assigned when the reactor is operating in MODES 1, 2, 3, or 4.

b. At least one licensed Reactor Operator (RO) shall be present in the control room when fuel is in the reactor. In addition, while the plant is in MODES 1, 2, 3, or 4, at least one licensed Senior Reactor Operator (SRO) shall be present in the control room.

5.2.2 Plant Staff (continued)

c. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i), and 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 requirements.

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

e. Administrative procedures shall be developed and implemented to limit the working hours of personnel who perform safety-related functions (e.g., licensed SROs, licensed ROs, radiation safety personnel, auxiliary operators, and key maintenance personnel).

The controls shall include guidelines on working hours that ensure adequate shift coverage shall be maintained without routine heavy use of overtime.

Any deviations from the overtime guidelines shall be authorized in advance by the plant superintendent or his designee, in accordance with approved administrative procedures, and with documentation of the basis for granting the deviation. Routine deviation from the working hour guidelines shall not be authorized.

Controls shall be included in the procedures to require a periodic independent review be conducted to ensure that excessive hours have not been assigned.

f. The operations manager or an assistant operations manager shall hold an SRO license. The individual holding the SRO license shall be responsible for directing the activities of the licensed operators.

g. An individual shall provide advisory technical support to the plant operations shift crew in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the plant. This individual shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift (Published in Federal Register 50 FR 43621, October 28, 1985).

5.0 ADMINISTRATIVE CONTROLS

5.3 Plant Staff Qualifications

5.3.1 Each member of the plant staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions except for the education and experience eligibility requirements for operator license applicants, and changes thereto, shall be those previously reviewed and approved by the NRC, specifically those referenced in NRC Safety Evaluation dated October 24, 2003.

5.3.2 The radiation safety manager shall meet the qualifications of a Radiation Protection Manager as defined in Regulatory Guide 1.8, September 1975. For the purpose of this section, "Equivalent," as utilized in Regulatory Guide 1.8 for the bachelor's degree requirement, may be met with four years of any one or combination of the following: (a) Formal schooling in science or engineering, or (b) operational or technical experience and training in nuclear power.

5.3.3 The individual, required by Specification 5.2.2g, assigned to provide advisory technical support to the plant operations shift crew, shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift (Published in Federal Register 50 FR 43621, October 28, 1985).

5.3.4 The plant staff who perform reviews which ensure compliance with 10 CFR 50.59 shall meet or exceed the minimum qualifications of ANS 3.1-1987, Section 4.7.1 and 4.7.2. A Senior Reactor Operator license or certification shall be considered equivalent to a bachelors degree for the purpose of this specification.

5.0 ADMINISTRATIVE CONTROLS

5.4 Procedures

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

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

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

c. Site Fire Protection Program implementation.

d. All programs specified in Specification 5.5.

5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

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

5.5.1 Offsite Dose Calculation Manual (ODCM)

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

b. The ODCM shall also contain (1) the radioactive effluent controls and radiological environmental monitoring activities and (2) descriptions of the information that should be included in the Radiological Environmental Operating Report, and Radioactive Effluent Release Report required by Specification 5.6.2 and Specification 5.6.3.

c. Changes to ODCM:

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

a. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the changes, and

b. A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.

2. Shall become effective after approval by the plant superintendent.

3. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change to 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 (e.g., month/year) the change was implemented.

5.5 Programs and Manuals

5.5.2 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage to the engineered safeguards rooms, from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident, to as low as practical. The systems include the Containment Spray System, the Safety Injection System, the Shutdown Cooling System, and the containment sump suction piping. This program shall include the following:

a. Provisions establishing preventive maintenance and periodic visual inspection requirements, and

b. Integrated leak test requirements for each system at a frequency not to exceed refueling cycle intervals.

c. The portion of the shutdown cooling system that is outside the containment shall be tested either by use in normal operation or hydrostatically tested at 255 psig.

d. Piping from valves CV-3029 and CV-3030 to the discharge of the safety injection pumps and containment spray pumps shall be hydrostatically tested at no less than 100 psig.

e. The maximum allowable leakage from the recirculation heat removal systems' components (which include valve stems, flanges and pump seals) shall not exceed 0.2 gallon per minute under the normal hydrostatic head from the SIRW tank.

5.5.3 Post Accident Sampling Program

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5.5.4 Radioactive Effluent Controls Program

A program shall be provided conforming with 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 (1) shall be contained in the Offsite Dose Calculation Manual (ODCM), (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

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

b. Limitations on the concentrations of radioactive material released in liquid effluents to unrestricted areas conforming to ten times the concentration values in Appendix B, Table 2, Column 2 to 10 CFR 20.1001-20.2402.

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

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

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

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

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

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

5.5.4 Radioactive Effluent Controls Program (continued)

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

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

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

5.5 Programs and Manuals

5.5.5 Containment Structural Integrity 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 operations. The Containment Structural Integrity Surveillance Program, inspection frequencies, and acceptance criteria shall be in accordance with ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWE and IWL.

If, as a result of a tendon inspection, corrective retensioning of five percent (8) or more of the total number of dome tendons is necessary to restore their liftoff forces to within the limits, a dome delamination inspection shall be performed within 90 days following such corrective retensioning. The results of this inspection shall be reported to the NRC in accordance with Specification 5.6.7, "Containment Structural Integrity Surveillance Report."

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

5.5.6 Primary Coolant Pump Flywheel Surveillance Program

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

b. The provisions of SR 3.0.2 are not applicable to the Flywheel Testing Program.

5.5 Programs and Manuals

5.5.7 Inservice Testing Program

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

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

B&PV Code terminology for inservice testing activities	Required interval for performing inservice testing activities
Weekly	≤ 7 days
Monthly	≤ 31 days
Quarterly or every 3 months	≤ 92 days
Semiannually or every 6 months	≤ 184 days
Every 9 months	≤ 276 days
Yearly or annually	≤ 366 days
Biennially or every 2 years	≤ 731 days

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

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

d. Nothing in the B&PV Code shall be construed to supersede the requirements of any Technical Specification.

5.5.8 Steam Generator (SG) Program

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

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

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

5.5.8 Steam Generator (SG) Program

b. Performance criteria for SG tube integrity. (continued)

1. Structural integrity performance criterion: All in-service SG tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down and all anticipated transients included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is not to exceed 0.3 gpm.

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

c. Provisions for SG tube repair criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria. The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. An assessment of degradation shall be performed to

5.5 Programs and Manuals

5.5.8 Steam Generator (SG) Program

d. Provisions for SG tube inspections. (continued)

determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations

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

2. Inspect 100% of the tubes at sequential periods of 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. No SG shall operate for more than 24 effective full power months or one refueling outage (whichever is less) without being inspected.

3. If crack indications are found in any SG tube, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

d. Provisions for monitoring operational primary to secondary LEAKAGE.

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5.5.9 Secondary Water Chemistry Program

A program shall be established, implemented and maintained for monitoring of secondary water chemistry to inhibit steam generator tube degradation and 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 (a) the authority responsible for the interpretation of the data, and (b) the sequence and timing of administrative events required to initiate corrective actions.

5.5.10 Ventilation Filter Testing Program

A program shall be established to implement the following required testing of Control Room Ventilation (CRV) and Fuel Handling Area Ventilation systems at the frequencies specified in Regulatory Guide 1.52, Revision 2 (RG 1.52), and in accordance with RG 1.52 and ASME N510-1989, at the system flowrates and tolerances specified below*:

a. Demonstrate for each of the ventilation systems that an inplace test of the High Efficiency Particulate Air (HEPA) filters shows a penetration and system bypass < 0.05% for the CRV and < 1.00% for the Fuel Handling Area Ventilation System when tested in accordance with RG 1.52 and ASME N510-1989:

Ventilation System	Flowrate (CFM)
V-8A or V-8B	7300 ± 20%
V-8A and V-8B	10,000 ± 20%
V-95 or V-96	12,500 ± 10%

5.5.10 Ventilation Filter Testing Program (continued)

b. Demonstrate for each of the ventilation systems that an inplace test of the charcoal adsorber shows a penetration and system bypass < 0.05% for the CRV and < 1.00% for the Fuel Handling Area Ventilation System when tested in accordance with RG 1.52 and ASME N510-1989.

Ventilation System	Flowrate (CFM)
V-8A and V-8B	10,000 ± 20%
V-26A and V-26B	3200 +10% -5%

c. Demonstrate for each of the ventilation systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in RG 1.52 shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of ≤ 30°C and equal to the relative humidity specified as follows:

Ventilation System	Penetration	Relative Humidity
VF-66	6.00%	95%
VFC-26A and VFC-26B	0.157%	70%

d. For each of the ventilation 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 RG 1.52 and ASME N510-1989:

Ventilation System	Delta P (In H_20)	Flowrate (CFM)
V-8A and V-8B	6.0	10,000 ± 20%
VF-26A and VF-26B	8.0	3200 +10% -5%

e. Demonstrate that the heaters for the CRV system dissipates the following specified value ± 20% when tested in accordance with ASME N510-1989:

Ventilation System	Wattage
VHX-26A and VHX-26B	15 kW

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

* Should the 720-hour limitation on charcoal adsorber operation occur during a plant operation requiring the use of the charcoal adsorber - such as refueling - testing may be delayed until the completion of the plant operation or up to 1,500 hours of filter operation; whichever occurs first.

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5.5.11 Fuel Oil Testing Program

A 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 requirements, testing requirements, and acceptance criteria, based on the diesel manufacturer's specifications and applicable ASTM Standards. The program shall establish the following:

a. Acceptability of new fuel oil prior to addition to the Fuel Oil Storage Tank, and acceptability of fuel oil stored in the Fuel Oil Storage Tank, by determining that the fuel oil has the following properties within limits:

1. API gravity or an absolute specific gravity,

2. Kinematic viscosity, and

3. Water and sediment content.

b. Other properties of fuel oil stored in the Fuel Oil Storage Tank, specified by the diesel manufacturers or specified for grade 2D fuel oil in ASTM D 975, are within limits.

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

5.5.12 Technical Specifications (TS) Bases Control Program

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

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

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

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

2. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

5.5 Programs and Manuals

5.5.12 Technical Specifications (TS) Bases Control Program (continued)

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

d. Proposed changes that meet the criteria of Specification 5.5.12.b. above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.13 Safety Functions Determination Program (SFDP)

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

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

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

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

5.5 Programs and Manuals

5.5.13 Safety Functions Determination Program (SFDP) (continued)

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.

5.5.14 Containment Leak Rate Testing Program

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

1. Leakage rate testing is not necessary after opening the Emergency Escape Air Lock doors for post-test restoration or post-test adjustment of the air lock door seals. However, a seal contact check shall be performed instead.

   Emergency Escape Airlock door opening, solely for the purpose of strongback removal and performance of the seal contact check, does not necessitate additional pressure testing.

2. Leakage rate testing at P_a is not necessary after adjustment of the Personnel Air Lock door seals. However, a between-the-seals test shall be performed at ≥10 psig instead.

3. Leakage rate testing frequency for the Containment 4 inch purge exhaust valves, the 8 inch purge exhaust valves, and the 12 inch air room supply valves may be extended up to 60 months based on component performance.

b. The calculated peak containment internal pressure for the design basis loss of coolant accident, P_a, is 53 psig. The containment design pressure is 55 psig.

c. The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.1% of containment air weight per day.

5.5 Programs and Manuals

5.5.14 Containment Leak Rate Testing Program (continued)

d. Leakage rate acceptance criteria are:

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

2. Air lock testing acceptance criteria are:

a) Overall air lock leakage is $\leq 1.0\ L_a$ when tested at $\geq P_a$ and combined with all penetrations and valves subjected to Type B and C tests. However, during the first unit startup following testing performed in accordance with this program, the leakage rate acceptance criteria is $< 0.6\ L_a$ when combined with all penetrations and valves subjected to Type B and C tests.

b) For each Personnel Air Lock door, leakage is $\leq 0.023\ L_a$ when pressurized to ≥ 10 psig.

c) For each Emergency Escape Air Lock door, a seal contact check , consisting of a verification of continuous contact between the seals and the sealing surfaces, is acceptable.

e. "Containment OPERABILITY" is equivalent to "Containment Integrity" for the purposes of the testing requirements.

f. The provisions of SR 3.0.3 are applicable to the Containment Leak Rate Testing Program requirements.

g. Nothing in these Technical Specifications shall be construed to modify the testing Frequencies required by 10 CFR 50, Appendix J.

5.5 Programs and Manuals

5.5.15 Process Control Program

a. The Process Control Program shall contain the current formula, sampling, analyses, tests, and determinations to be made to ensure that the processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR 20, 10 CFR 71, Federal and State regulations, and other requirements governing the disposal of the radioactive waste.

b. Changes to the Process Control Program:

1. Shall be documented and records of reviews performed shall be retained as required by the Quality Program, CPC-2A. This documentation shall contain:

a) Sufficient information to support the change together with the appropriate analyses or evaluation justifying the change(s) and

b) A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.

2. Shall become effective after approval by the plant superintendent.

5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

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

5.6.1 (Deleted)

5.6.2 Radiological Environmental Operating Report

The Radiological Environmental Operating Report covering the operation of the plant during the previous calendar year shall be submitted before May 15 of each year. The report shall include summaries, interpretations, and analysis of trends of the results of the radiological environmental monitoring program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

5.6.3 Radioactive Effluent Release Report

The Radioactive Effluent Release Report covering operation of the plant in the previous year shall be submitted prior to May 1 of each year in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the plant. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual and Process Control Program, and shall be in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

5.6 Reporting Requirements

5.6.4 (Deleted)

5.6.5 CORE OPERATING LIMITS REPORT (COLR)

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

3.1.1	Shutdown Margin
3.1.6	Regulating Rod Group Position Limits
3.2.1	Linear Heat Rate Limits
3.2.2	Radial Peaking Factor Limits
3.2.4	ASI Limits
3.4.1	DNB Limits

b. The analytical methods used to determine the core operating limits shall be those approved by the NRC, specifically those described in the latest approved revision of the following documents:

1. EMF-96-029(P)(A) Volumes 1 and 2, "Reactor Analysis System for PWRs," Siemens Power Corporation.
(LCOs 3.1.1, 3.1.6, 3.2.1, 3.2.2, & 3.2.4)

2. ANF-84-73 Appendix B (P)(A), "Advanced Nuclear Fuels Methodology for Pressurized Water Reactors: Analysis of Chapter 15 Events," Advanced Nuclear Fuels Corporation. (Bases report not approved) (LCOs 3.1.1, 3.1.6, 3.2.1, 3.2.2, & 3.2.4)

3. XN-NF-82-21(P)(A), "Application of Exxon Nuclear Company PWR Thermal Margin Methodology to Mixed Core Configurations," Exxon Nuclear Company.
(LCOs 3.2.1, 3.2.2, & 3.2.4)

4. EMF-84-093(P)(A), "Steam Line Break Methodology for PWRs, "Siemens Power Corporation.
(LCOs 3.1.1, 3.1.6, 3.2.1, 3.2.2, & 3.2.4)

5. XN-75-32(P)(A) Supplements 1 through 4, "Computational Procedure for Evaluating Fuel Rod Bowing," Exxon Nuclear Company. (Bases document not approved)
(LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)

5.6 Reporting Requirements

5.6.5 COLR (continued)

6. EMF-2310 (P)(A), Revision 0, Framatome ANP, Inc., May 2001, "SRP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors." (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)

7. XN-NF-78-44(NP)(A), "A Generic Analysis of the Control Rod Ejection Transient for Pressurized Water Reactors," Exxon Nuclear Company. (LCOs 3.1.6, 3.2.1, & 3.2.2)

8. ANF-89-151(P)(A), "ANF-RELAP Methodology for Pressurized Water Reactors: Analysis of Non-LOCA Chapter 15 Events," Advanced Nuclear Fuels Corporation. (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)

9. EMF-92-153(P)(A) and Supplement 1, "HTP: Departure from Nucleate Boiling Correlation for High Thermal Performance Fuel," Siemens Power Corporation. (LCOs 3.2.1, 3.2.2, & 3.2.4)

10. XN-NF-621(P)(A), "Exxon Nuclear DNB Correlation for PWR Fuel Designs," Exxon Nuclear Company. (LCOs 3.2.1, 3.2.2, & 3.2.4)

11. XN-NF-82-06(P)(A) and Supplements 2, 4, and 5, "Qualification of Exxon Nuclear Fuel for Extended Burnup," Exxon Nuclear Company. (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)

12. ANF-88-133(P)(A) and Supplement 1, "Qualification of Advanced Nuclear Fuels' PWR Design Methodology for Rod Burnups of 62 GWD/MTU," Advanced Nuclear Fuels Corporation. (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)

13. XN-NF-85-92(P)(A), "Exxon Nuclear Uranium Dioxide/Gadolinia Irradiation Examination and Thermal Conductivity Results," Exxon Nuclear Company. (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)

5.6 Reporting Requirements

5.6.5 COLR (continued)

14. EMF-92-116(P)(A), "Generic Mechanical Design Criteria for PWR Fuel Designs," Siemens Power Corporation. (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)

15. EMF-2087(P)(A), "SEM/PWR-98: ECCS Evaluation Model for PWR LBLOCA Applications," Siemens Power Corporation. (LCOs 3.1.6, 3.2.1, & 3.2.2)

16. ANF-87-150 Volume 2, "Palisades Modified Reactor Protection System Report: Analysis of Chapter 15 Events," Advanced Nuclear Fuels Corporation. [Approved for use in the Palisades design during the NRC review of license Amendment 118, November 15, 1988] (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.4.1)

17. EMF-1961(P)(A), Revision 0, Siemens Power Corporation, July 2000, "Statistical Setpoint/Transient Methodology for Combustion Engineering Type Reactors." (LCOs 3.1.6, 3.2.1, 3.2.2, 3.2.4, & 3.4.1)

18. EMF-2328 (P)(A), Revision 0, Framatome ANP, Inc., March 2001, "PWR Small Break LOCA Evaluation Model, S-RELAP5 Based." (LCOs 3.1.6, 3.2.1, & 3.2.2)

19. BAW-2489P, "Revised Fuel Assembly Growth Correlation for Palisades." (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems limits, nuclear limits such as shutdown margin, 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 Post Accident Monitoring Report

When a report is required by LCO 3.3.7, "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 to OPERABLE status.

5.6.7 Containment Structural Integrity Surveillance Report

Reports shall be submitted to the NRC covering Prestressing, Anchorage, and Dome Delamination tests within 90 days after completion of the tests.

5.6.8 Steam Generator Tube Surveillance Report

A report shall be submitted within 180 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification 5.5.8, Steam Generator (SG) Program. The report shall include:

a. The scope of inspections performed on each SG,

b. Active degradation mechanisms found,

c. Nondestructive examination techniques utilized for each degradation mechanism,

d. Location, orientation (if linear), and measured sizes (if available) of service induced indications,

e. Number of tubes plugged during the inspection outage for each active degradation mechanism,

f. Total number and percentage of tubes plugged to date,

g. The results of condition monitoring, including the results of tube pulls and in-situ testing, and

h. The effective plugging percentage for all plugging in each SG.

5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

As provided in paragraph 20.1601(c) of 10 CFR Part 20, the following controls shall be applied to high radiation areas in place of the controls required by paragraph 20.1601(a) and (b) of 10 CFR Part 20:

5.7.1 High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation

a. Each entryway to such an area shall be barricaded and conspicuously posted as a high radiation area. Such barricades may be opened as necessary to permit entry or exit of personnel or equipment.

b. Access to, and activities in, each such area shall be controlled by means of Radiation Work Permit (RWP), or equivalent, that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP, or equivalent, while performing their assigned duties, provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.

d. Each individual or group entering such an area shall possess:

1. A radiation monitoring device that continuously displays radiation dose rates in the area; or

2. A radiation monitoring device that continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or

3. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area, or

5.7 High Radiation Area

5.7.1 High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation (continued)

4. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,

(i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area, and who is responsible for controlling personnel exposure within the area, or

(ii) Be under the surveillance, as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with individuals in the area who are covered by such surveillance.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

5.7 High Radiation Area

5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation

a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition:

1. All such door and gate keys shall be maintained under the administrative control of the shift supervisor, radiation protection manager, or his or her designee.

2. Doors and gates shall remain locked except during periods of personnel or equipment entry or exit.

b. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

c. Individuals qualified in radiation protection procedures may be exempted from the requirement for an RWP, or equivalent, while performing radiation surveys in such areas, provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.

d. Each individual or group entering such an area shall possess:

1. A radiation monitoring device that continuously integrates the radiation rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or

2. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area, and with the means to communicate with and control every individual in the area, or

5.7 High Radiation Area

5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation (continued)

3. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,

   (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; and who is responsible for controlling personnel exposure within the area, or

   (ii) Be under the surveillance, as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with and control every individual in the area.

4. In those cases where options (2) and (3), above, are impractical or determined to be inconsistent with the "As Low As is Reasonably Achievable" principle, a radiation monitoring device that continuously displays radiation dose rates in the area.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

f. Such individual areas that are within a larger area where no enclosure exists for the purpose of locking and where no enclosure can reasonably be constructed around the individual area need not be controlled by a locked door or gate, nor continuously guarded, but shall be barricaded, conspicuously posted, and a clearly visible flashing light shall be activated at the area as a warning device.