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11.0 Use and Application

11.1 Definitions

FUNCTIONAL/FUNCTIONALITY – FUNCTIONALITY is an attribute of Structures, Systems and Components (SSCs) that is not controlled by Technical Specifications (TSs). An SSC is FUNCTIONAL or has FUNCTIONALITY when it is capable of performing its specified function, as set forth in the Current Licensing Basis (CLB). FUNCTIONALITY does not apply to specified safety functions, but does apply to the ability of non-TS SSCs to perform other specified functions that have a necessary support function.

The definitions contained in the Technical Specifications Section 1.1, "Definitions" apply to the Technical Requirements contained in this manual. In the Technical Requirements, defined terms are shown in all capital letters, consistent with the Technical Specifications.

11.2 Logical Connectors

The guidance provided for the use and application of logical connectors in Section 1.2, "Logical Connectors" of the Technical Specifications is applicable to the Technical Requirements contained in this manual.

11.3 Completion Times

The guidance provided for the use and application of Completion Times in Section 1.3, "Completion Times" of the Technical Specifications is applicable to the Technical Requirements contained in this manual.

11.4 Frequency

The guidance provided for the use and application of Frequency requirements in Section 1.4, "Frequency" of the Technical Specifications is applicable to the Technical Requirements contained in this manual.

11.5 TR and TRS Implementation

TRs and TRSs are implemented the same as Technical Specifications (see 13.0). However, TRs and TRSs are treated as plant procedures and are not part of the Technical Specifications. Therefore the following exceptions apply:

a. Violations of the Action or Surveillance requirements in a TR are not reportable as conditions prohibited by, or deviations from, the Technical Specifications per 10 CFR 50.72 or 10 CFR 50.73, unless specifically required by the TR.

b. Power reductions or plant shutdowns required to comply with the Actions of a TR or as a result of the application of TR 13.0.3 are not reportable per 10 CFR 50.72 or 10 CFR 50.73.

11.0 Use and Application (continued)

c. Violations of TR or TRS requirements, except as provided for in Section 13.0 of this manual, shall be treated the same as plant procedure violations.

11.6 Technical Requirement Manual Revisions

Changes to this manual are controlled in accordance with 10 CFR 50.59.

11.7 Alternative Actions (e.g., Initiate a Condition Report, Continue Action to Restore, Determination of Alternate Course of Action)

Alternate Actions, such as initiating a condition report or management determination of alternate course of action are provided for selected TRs as alternatives to performing a plant shutdown if the nonfunctional TR cannot be restored within the allowed Completion Time. To ensure safe operation of the plant, priority should be on restoration of the nonfunctional TR to FUNCTIONAL within the allowed Completion Time. The alternative Actions to restoration of the TR to FUNCTIONAL are to provide allowances for a course of action that would continue to ensure the safe operation of the plant. Alternative Actions would allow for evaluation of the specific circumstances and plant conditions present at the time to determine if a safe alternative to a shutdown exists. Alternative Actions may be appropriate for situations where continued cooperation can be justified; for example, if the specified limits in the TR (e.g., RCS Chemistry or Pressurizer) were only slightly exceeded and sufficient margin is available, or if a Completion Time or Surveillance Frequency extension would allow the restoration of the limits or component FUNCTIONALITY, or if an alternate means for determining the FUNCTIONALITY of a component can be identified.

If the Alternative Action includes operation beyond the stated Completion Time, a plan for restoring the TR should be documented.

The plan for restoring the TR should consider:

- The technical basis of the requirement,
- The safety significance of continued operation beyond the stated completion time,
- A qualitative or quantitative evaluation of the operational risk associated with the TR not being met (e.g., Online or Outage risk assessments or engineering technical justifications),
- If required, compensatory actions put in place during the time the TR is not met, and
- Approval by the appropriate level of management prior to expiration of the Completion Time.

If the Alternate Action is taken it should be documented in a CR, ODMI, or other appropriate means and should contain the following:

- The reason the TR could not be restored within the allowed Completion Time,
- The results of the evaluation of operational risk,
- Any compensatory measures, and
- The operational conditions necessary to restore the TR to Functional.

The appropriate level of management is, as a minimum, the Shift Manager. However, the Shift Manager should consider the safety significance and operational risks associated with the nonfunctional TR and engage senior management in the decision to implement the alternative Action, as required.

13.0 Technical Requirement (TR) Applicability

TR 13.0.1 TRs shall be met during the MODES or other specified conditions in the Applicability, except as provided in TR 13.0.2.

TR 13.0.2 Upon discovery of a failure to meet a TR, the Required Actions of the associated Conditions shall be met, except as provided in TR 13.0.5.

If the TR 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.

TR 13.0.3 When a TR is not met, and the associated ACTIONS are not met, or an associated ACTION is not provided, the unit shall be placed in a safe condition as determined by plant management. A Condition Report shall be initiated immediately.

TR 13.0.4 When a TR 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; or

b. After performance of a risk assessment addressing nonfunctional 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 requirement are stated in the individual TRs; or

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

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

(continued)

13.0 TR Applicability (continued)

TR 13.0.5	Equipment removed from service or declared nonfunctional to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its FUNCTIONALITY or the OPERABILITY or FUNCTIONALITY of other equipment. This is an exception to TR 13.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY or FUNCTIONALITY.
TR 13.0.7	Test Exception TR 13.1.9 allows TR 13.1.8, “Position Indication - Shutdown” to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TR requirements remain unchanged. Compliance with the Test Exception TR is optional. When the Test Exception TR is desired to be met but is not met, the ACTIONS of the Test Exception TR shall be met. When the Test Exception TR is not desired to be met, entry into a MODE or other specified condition in the Applicability shall be made in accordance with the other applicable TRs.
TR 13.0.8	Unless specifically noted, all the information provided in the TR including the associated ACTION requirements shall apply to each unit individually. In those cases where a specification makes reference to systems or components which are shared by both units, the affected systems or components will be clearly identified in parentheses or footnotes declaring the reference to be "common." Whenever the TR refers to systems or components which are common, the ACTION requirements will apply to both units simultaneously. (This will be indicated in the ACTION section.) Whenever certain portions of a specification refer to systems, components, operating parameters, setpoints, etc., which are different for each unit, this will be identified in parentheses or footnotes or in the Applicability section as appropriate.

13.0 Technical Requirement Surveillance(TRS) Applicability

TRS 13.0.1 TRSs shall be met during the MODES or other specified conditions in the Applicability for individual TRs, unless otherwise stated in the TRS. 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 TR. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the TR except as provided in TRS 13.0.3. Surveillances do not have to be performed on nonfunctional equipment or variables outside specified limits.

TRS 13.0.2 The specified Frequency for each TRS 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 requirement are stated in the individual TRSs.

TRS 13.0.3 If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the TR 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 TR 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 TR must immediately be declared not met, and the applicable Condition(s) must be entered.

TRS 13.0.4 Entry into a MODE or other specified condition in the Applicability of a TR shall only be made when the TR's Surveillances have been met within their specified Frequency, except as provided by TRS 13.0.3. When a TR is not met due to Surveillances not having been met, entry into a

(continued)

13.0 TRS Applicability

TRS 13.0.4 (continued) MODE or other specified condition in the Applicability shall only be made in accordance with TR 13.0.4.

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

13.1 Reactivity Control Systems

TR 13.1.1 SHUTDOWN MARGIN (SDM)

TR 13.1.1 SDM shall be ≥ the limit specified in the COLR.

APPLICABILITY: MODES 1 and 2

ACTIONS

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

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.1.1.1	Verify SDM within limit with the control banks at the maximum insertion limit specified in the COLR and considering the following factors: 1) RCS boron concentration, 2) Control rod position, 3) RCS average temperature, 4) Fuel burnup based on gross thermal energy generation, 5) Xenon concentration, and 6) Samarium concentration	Prior to initial operation above 5% RTP after each fuel loading.

13.1 Reactivity Control Systems

TR 13.1.2 Boration Flow Path - Shutdown

TR 13.1.2 One of the following boron injection flow paths shall be FUNCTIONAL:

a. A flow path from a FUNCTIONAL boric acid storage tank via a boric acid transfer pump and a charging pump, in accordance with TR 13.1.4, to the RCS, or

b. A flow path from the FUNCTIONAL RWST via a charging pump, in accordance with TR 13.1.4, to the RCS.

APPLICABILITY: MODE 5

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required Flow Path nonfunctional.	A.1 Suspend positive reactivity additions.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE	FREQUENCY
TRS 13.1.2.1 ----------NOTE---------- Only required to be performed when the flow path from the boric acid storage tank is required FUNCTIONAL. ---------- Verify that ambient temperatures in applicable rooms of the auxiliary building containing boron flow paths are ≥ 65 °F. If installed indication is used (TISL 12410 or TISL 12411, TISL 12412 or TISL 12413, TISL 12414 or TISL 12415, TISL 12416 or TISL 12417, TISL 20900 or TISL 20901, TISL 20902 or TISL 20903, and TISL 20904 or TISL 20905), it must read ≥ 72 °F due to the inaccuracy of the instrumentation.	92 days

TECHNICAL REQUIREMENT SURVEILLANCES (continued)

SURVEILLANCE		FREQUENCY
TRS 13.1.2.2	Verify that each manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.	9 months

13.1 Reactivity Control Systems

TR 13.1.3 Boration Flow Paths - Operating

TR 13.1.3 Two of the following boron injection flow paths shall be FUNCTIONAL.

a. One or more flow paths from the boric acid storage tank via a boric acid transfer pump and a charging pump to the RCS, or

b. One or more flow paths from the RWST via charging pumps to the RCS.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required flow path nonfunctional in MODE 1 or 2.	A.1 Restore at least two required flow paths to FUNCTIONAL status.	72 hours
B. One required flow path nonfunctional in MODE 3 or 4.	B.1 Restore at least two required flow paths to FUNCTIONAL Status.	7 days
C. Required Actions and associated Completion Time not met.	C.1 Initiate a Condition Report. AND C.2 Continue action to restore the required flow path(s) to FUNCTIONAL status.	Immediately Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

	SURVEILLANCE	FREQUENCY
TRS 13.1.3.1	----------NOTE---------- Only required to be performed when one or more flow paths from the boric acid storage tank are required FUNCTIONAL. ----------	
	Verify that ambient temperature in applicable rooms of the auxiliary building containing boron flow paths are ≥ 65 °F. If installed indication is used (TISL 12410 or TISL 12411, TISL 12412 or TISL 12413, TISL 12414 or TISL 12415, TISL 12416 or TISL 12417, TISL 20900 or TISL 20901, TISL 20902 or TISL 20903, and TISL 20904 or TISL 20905), it must read ≥ 72 °F due to the inaccuracy of the instrumentation.	92 days
TRS 13.1.3.2	Verify that each manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.	9 months
TRS 13.1.3.3	Verify required flow paths from boric acid storage tank deliver ≥ 30 gpm to the RCS.	18 months

13.1 Reactivity Control Systems

TR 13.1.4 Boration Flow Path Pump - Shutdown

TR 13.1.4 A charging pump in the boron injection flow path required by TR 13.1.2 shall be FUNCTIONAL.

APPLICABILITY: MODE 5

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required pump nonfunctional.	A.1 Suspend operations involving positive reactivity changes.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.1.4.1	Verify the flow path required by TR 13.1.2 is capable of delivering ≥ 30 gpm of 7000 ppm boric acid solution or equivalent to the RCS.	18 months

13.1 Reactivity Control Systems

TR 13.1.5 Charging Pumps - Operating

TR 13.1.5 Two charging pumps shall be FUNCTIONAL.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required charging pump nonfunctional in MODE 1 or 2.	A.1 Restore at least two charging pumps to FUNCTIONAL status.	72 hours
B. One required charging pump nonfunctional in MODE 3 or 4.	B.1 Restore at least two charging pumps to FUNCTIONAL status.	7 days
C. Required Action and associated Completion Time not met.	C.1 Initiate a Condition Report. AND C.2 Continue action to restore the required charging pump(s) to FUNCTIONAL status.	Immediately Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.1.5.1	Verify that the flow path required by TR 13.1.3 delivers ≥ 30 gpm or equivalent to the RCS.	18 months

13.1 Reactivity Control Systems

TR 13.1.6 Borated Water Source - Shutdown

TR 13.1.6 One of the following borated water sources shall be FUNCTIONAL:

a. A boric acid storage tank, or

b. The refueling water storage tank (RWST).

APPLICABILITY: MODE 5

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required borated water source nonfunctional.	A.1 Suspend positive reactivity additions.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

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

1. TRS 13.1.6.1, TRS 13.1.6.2, and TRS 13.1.6.3 are only required to be performed when the RWST is the required borated water source.

2. TRS 13.1.6.4, TRS 13.1.6.5, and TRS 13.1.6.6 are only required to be performed when the boric acid storage tank is the required borated water source.

(continued)

TECHNICAL REQUIREMENT SURVEILLANCES (continued)

	SURVEILLANCE	FREQUENCY
TRS 13.1.6.1	----------NOTE---------- Only required to be performed when the outside air temperature is < 40 °F. ---------- Verify RWST solution temperature ≥ 44 °F (TI-10982).	24 hours
TRS 13.1.6.2	Verify the RWST boron concentration is between 2,400 ppm and 2,600 ppm.	7 days
TRS 13.1.6.3	Verify RWST borated water volume is ≥ 99,404 gallons (9% instrument span) (LI-0990A&B, LI-0991A&B, LI-0992A, LI-0993A).	7 days
TRS 13.1.6.4	----------NOTE---------- Only required to be performed if the ambient temperature of the boric acid storage tank room (TISL-20902, TISL-20903) is ≤ 72 °F. ---------- Verify the boric acid storage tank solution temperature is ≥ 65 °F (TI-0103).	7 days
TRS 13.1.6.5	Verify the boron concentration of the boric acid tank solution is between 7,000 ppm and 7,700 ppm.	7 days
TRS 13.1.6.6	Verify the contained borated water volume in the boric acid storage tank is ≥ 9,504 gallons (19% of instrument span, LI-102A, LI-104A).	7 days

13.1 Reactivity Control Systems

TR 13.1.7 Borated Water Sources - Operating

TR 13.1.7 The following borated water source(s) shall be FUNCTIONAL as required by TR 13.1.3:

a. Boric acid storage tank

b. The refueling water storage tank (RWST).

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required boric acid storage tank nonfunctional in MODE 1 or 2.	A.1 Restore boric acid tank to FUNCTIONAL status.	72 hours
B. Required boric acid storage tank nonfunctional in MODE 3 or 4.	B.1 Restore the boric acid tank to FUNCTIONAL status.	7 days
C. Required Actions and associated Completion Times of Condition A or B not met.	C.1 Initiate a Condition Report. AND C.2 Continue action to restore the required boric acid tank to FUNCTIONAL status.	Immediately Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. RWST nonfunctional.	D.1 Enter applicable Conditions of RWST Technical Specification 3.5.4.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

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

1. TRS 13.1.7.1 is only required to be performed when the RWST is the required borated water source.

2. TRS 13.1.7.2, TRS 13.1.7.3, and TRS 13.1.7.4 are only required to be performed when the boric acid storage tank is the required borated water source.

SURVEILLANCE		FREQUENCY
TRS 13.1.7.1	When the RWST is required to be FUNCTIONAL, the SRs of Technical Specification 3.5.4 are applicable.	In accordance with applicable SRs.
TRS 13.1.7.2	----------NOTE---------- Only required to be performed if the ambient temperature of the boric acid storage tank room (TISL-20902, TISL-20903) is $\leq$ 72 °F. ---------- Verify the boric acid storage tank solution temperature is $\geq$ 65 °F (TI-0103).	7 days
TRS 13.1.7.3	Verify the boron concentration of the boric acid tank solution is between 7,000 ppm and 7,700 ppm.	31 days
TRS 13.1.7.4	Verify the contained borated water volume in the boric acid storage tank is $\geq$ 36,674 gallons (83% of instrument span, LI-102A, LI-104A).	7 days

13.1 Reactivity Control Systems

TR 13.1.8 Position Indication System - Shutdown

TR 13.1.8 The digital rod position indication (DRPI) shall be FUNCTIONAL and capable of determining the control rod position within ± 12 steps for each shutdown or control rod not fully inserted.

APPLICABILITY: When the reactor trip breakers are closed in MODES 3, 4, or 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required DRPI for one or more shutdown or control rods nonfunctional.	A.1 Open the reactor trip breakers.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.1.8.1	Verify each required DRPI agrees within 12 steps of the group demand position for the full indicated range of rod travel.	18 months

13.1 Reactivity Control Systems

TR 13.1.9 Test Exception for Position Indication System - Shutdown

TR 13.1.9 The requirements of TR 13.1.8, “Position Indication System - Shutdown” may be suspended during the performance of individual shutdown and control rod drop time measurements provided:

a. Only one shutdown or control bank is withdrawn from the fully inserted position at a time, or

b. Multiple shutdown or control banks are withdrawn from the fully inserted position in their proper withdrawal sequence.

c. The digital rod position indication (DRPI) is FUNCTIONAL during the withdrawal of the rods in “a” and “b”.

APPLICABILITY: During performance of rod drop time measurements in MODES 3, 4, or 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required DRPI nonfunctional during rod withdrawal.	A.1 Open the reactor trip breakers.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.1.9.1	Verify the demand position indication and DRPI agree: a. Within 12 steps when the rods are stationary, and b. Within 24 steps during rod motion.	Within 24 hours prior to initiation of rod drop time measurements AND 24 hours thereafter

13.3 Instrumentation

TR 13.3.1 Movable Incore Detectors

TR 13.3.1 The movable incore detection system shall be FUNCTIONAL with:

1. ≥ 44 detector thimbles, with ≥ 2 detector thimbles per core quadrant as identified in Figure 13.3.1-1,

OR

2. ≥ 37 and < 44 detector thimbles, with ≥ 3 detector thimbles per core quadrant as identified in Figures 13.3.1-1 and 13.3.1-2,

OR

3. ≥ 29 and < 37 detector thimbles, with ≥ 4 detector thimbles per core quadrant as identified in Figures 13.3.1-1 and 13.3.1-2.

AND

Sufficient movable detectors, drives, and readout equipment to map these thimbles.

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

1. ≥ 44 detector thimbles, with ≥ 2 detector thimbles per core quadrant as identified in Figure 13.3.1-1 are required during the initial startup after a refueling outage up to and including performance of the first flux map at 100% RTP. An exception is that for the performance of SR 3.3.1.3, WCAP-8648-A, *EXCORE Detector Recalibration Using Quarter-Core Flux Maps*, provides an acceptable method of measuring axial offset using incore detectors. However, a flux map with ≥ 44 detector thimbles, with ≥ 2 detector thimbles per core quadrant as identified in Figure 13.3.1-1 is still required prior to reaching 50% RTP to detect a core misload event. This Note does not have to be met for Vogtle Unit 1, Cycle 17 based on the successful performances of the flux map at 30% RTP.
2. If a detector thimble is located on either the major axes of Figure 13.3.1-1 or minor axes of Figure 13.3.1-2, the detector thimble can be included in both core quadrants that are divided by the axis for the purpose of determining the minimum number of detector thimbles per core quadrant.
3. Refer to TR 13.3.9 for movable incore detector requirements for the BEACON Power Distribution Monitoring System (PDMS).

APPLICABILITY: When the movable incore detection system is used for:

a. Recalibration of the excore neutron flux detection system, or

b. Monitoring QPTR, or

c. Measurement of $F^{N}_{\Delta H}$, $F_{Q}(Z)$ and F_{xy}.

ACTIONS

----------NOTE----------
TR 13.0.3 is not applicable

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required movable incore detection system component(s) nonfunctional.	A.1 Restore the incore detection system to FUNCTIONAL status.	Prior to using the system for the above listed monitoring and calibration functions.

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.3.1.1	Verify movable incore system FUNCTIONALITY by irradiating each required detector and determining the acceptability of its voltage curve.	Within 24 hours prior to using the system for the above listed monitoring and calibration functions

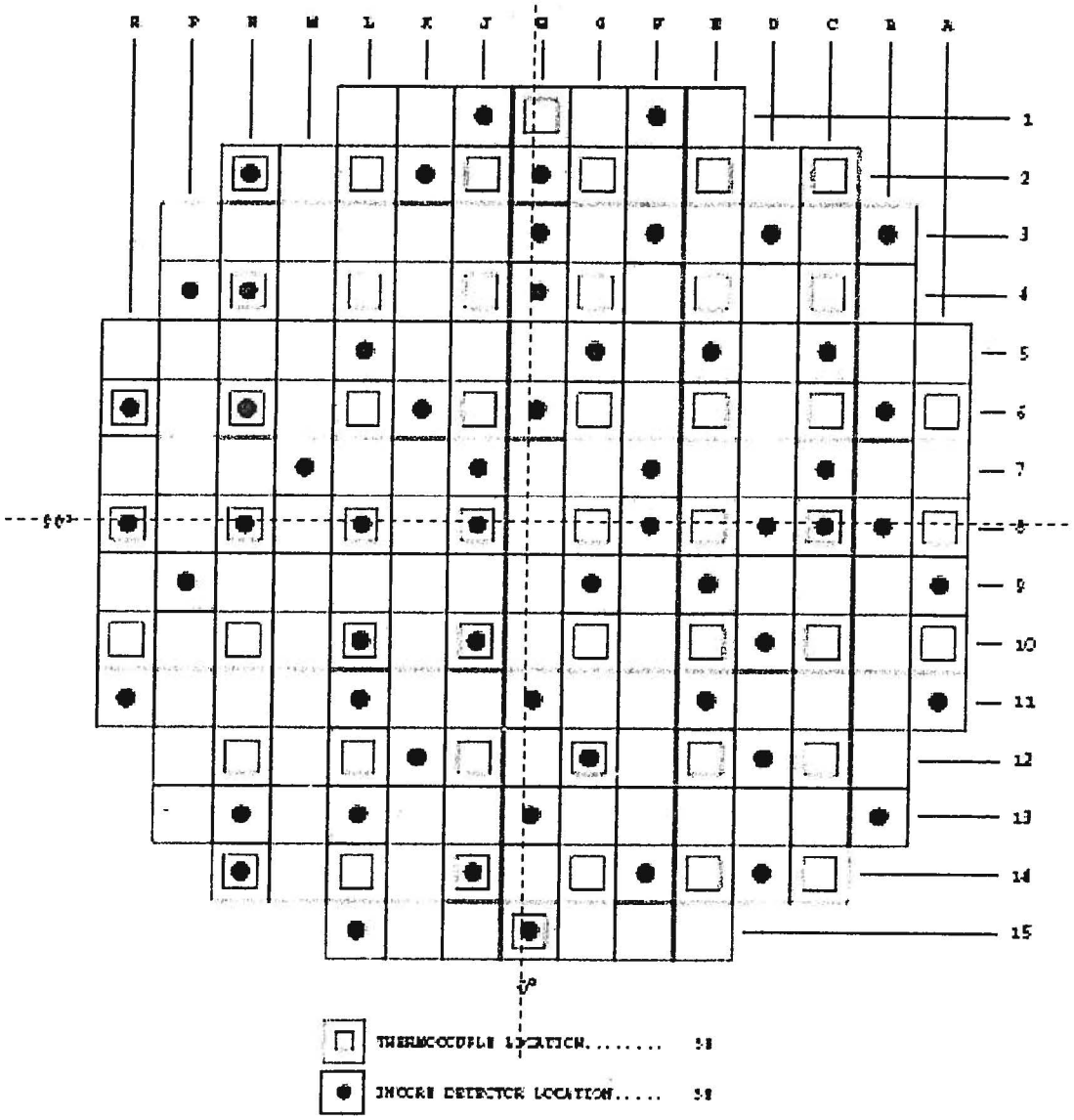

Figure 13.3.1 – 1 (page 1 of 1)
Movable Incore Detector Locations in Major Axes Quadrants

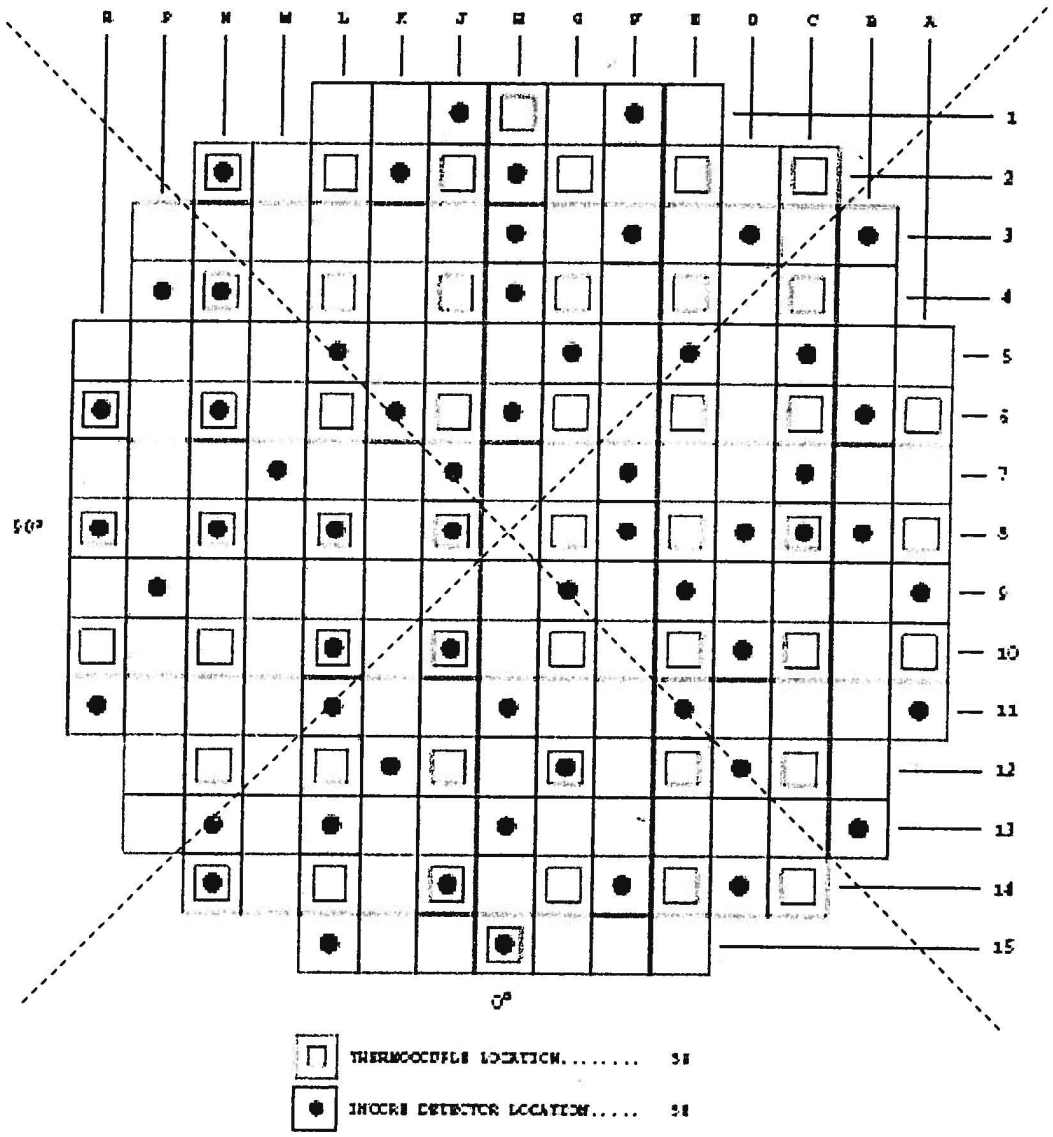

Figure 13.3.1 – 2 (page 1 of 1)
Movable Incore Detector Locations in Minor Axes Quadrants
(For use with the TR 13.3.1 option for ≥ 29 and < 44 detector thimbles)

13.3 Instrumentation

TR 13.3.2 Seismic Monitoring Instrumentation (common system)

TR 13.3.2 The seismic monitoring instrumentation identified in Table 13.3.2-1 shall be FUNCTIONAL.

APPLICABILITY: At all times.

ACTIONS

----------NOTE----------
TR 13.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
----------NOTE---------- Separate Condition entry is allowed for each seismic monitoring instrument. --- A. One or more required seismic monitoring instruments nonfunctional.	A.1 Restore instrumentation to FUNCTIONAL status.	30 days
B. Required ACTION and associated Completion Time of Condition A not met.	B.1 Initiate a Condition Report. AND B.2 Continue action to restore the required instruments to FUNCTIONAL status.	Immediately Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more required seismic monitoring instruments actuated during a seismic event ≥ 0.01g.	C.1 Evaluate data retrieved from actuated free-field instrumentation. AND	4 hours
	C.2 ----------NOTE---------- The CHANNEL OPERATIONAL TEST conducted after a seismic event shall be supplemented by the instrument evaluation described in section 4.3 of NRC Regulatory Guide 1.166. ---------- Conduct a CHANNEL OPERATIONAL TEST on actuated free-field instrumentation.	4 hours
	AND	
	C.3 Evaluate data retrieved from remaining actuated instrumentation.	14 days
	AND	
	C.4 ----------NOTE---------- The CHANNEL OPERATIONAL TEST conducted after a seismic event shall be supplemented by the instrument evaluation described in section 4.3 of NRC Regulatory Guide 1.166. ---------- Perform a CHANNEL OPERATIONAL TEST on remaining actuated instrumentation.	14 days

TECHNICAL REQUIREMENT SURVEILLANCES

----------NOTE----------
Refer to Table 13.3.2-1 to determine which SRs apply for each seismic monitoring instrument.

SURVEILLANCE	FREQUENCY
TRS 13.3.2.1 Perform CHANNEL CHECK.	18 months
TRS 13.3.2.2 Perform CHANNEL OPERATIONAL TEST.	18 months
TRS 13.3.2.3 Perform CHANNEL CALIBRATION.	36 months

Table 13.3.2-1 (page 1 of 2)

Seismic Monitoring Instrumentation

Instruments and Sensor Locations	Measurement Range or Setting	Required Number of Instruments and Tag Number	Surveillance Requirements
1. Triaxial Time-History Accelerograph with Internal Force Balance Accelerometer			
a. Free Field (~ 2000 ft from containment)	-1g to + 1g	1 (AXR-19931)	TRS 13.3.2.1 TRS 13.3.2.2 TRS 13.3.2.3
2. Triaxial Force Balance Accelerometers			
a. Field (~ 225 ft from containment)	-1g to + 1g	1 (AXT-19900)	TRS 13.3.2.1 TRS 13.3.2.2 TRS 13.3.2.3
b. Unit 1 Containment Gallery (basemat)	-1g to + 1g	1 (AXT-19901)	TRS 13.3.2.1 TRS 13.3.2.2 TRS 13.3.2.3
c. Unit 1 Containment Operating Floor	-1g to + 1g	1 (AXT-19902)	TRS 13.3.2.1 TRS 13.3.2.2 TRS 13.3.2.3
d. Unit 1 Containment Bioshield Wall	-1g to + 1g	1 (AXT-19903)	TRS 13.3.2.1 TRS 13.3.2.2 TRS 13.3.2.3
e. Auxiliary Building Level 1	-1g to + 1g	1 (AXT-19905)	TRS 13.3.2.1 TRS 13.3.2.2 TRS 13.3.2.3
f. Auxiliary Building Basemat	-1g to + 1g	1 (AXT-19906)	TRS 13.3.2.1 TRS 13.3.2.2 TRS 13.3.2.3
g. Diesel Generator Building Slab Floor	-1g to + 1g	1 (AXT-19925)	TRS 13.3.2.1 TRS 13.3.2.2 TRS 13.3.2.3

Table 13.3.2-1 (page 2 of 2)

Seismic Monitoring Instrumentation

Instruments and Sensor Locations	Measurement Range or Setting	Required Number of Instruments and Tag Number	Surveillance Requirements
3. Triaxial Time-History Accelerographs (Recorders)			
a. Control Room	-1g to + 1g	4 (AXR-19928A) (AXR-19928B) (AXR-19928C) (AXR-19928D)	TRS 13.3.2.1 TRS 13.3.2.2
4. Central Controlling Unit to include a computer, keyboard, LCD display, printer, alarm panel, and uninterruptible power supply.			
a. Control Room	N/A	6 (A-2414-Q5-SIP-CP1) (A-2414-Q5-SIP-KB1) (AXI-19928) (A-2414-Q5-SIP-PR1) (AXA-19928) (A-2414-Q5-SIP-UPS)	TRS 13.3.2.1 TRS 13.3.2.2

13.3 Instrumentation

TR 13.3.3 Meteorological Instrumentation (common system)

TR 13.3.3 The meteorological monitoring instrumentation channels identified in Table 13.3.3-1 shall be FUNCTIONAL.

APPLICABILITY: At all times.

ACTIONS

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

1. TR 13.0.3 is not applicable.

2. Separate Condition entry is allowed for each meteorological monitoring instrument channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required meteorological monitoring instrument channels nonfunctional.	A.1 Restore instrumentation to FUNCTIONAL status.	7 days
B. Required ACTION and associated Completion Time of Condition A not met.	B.1 Initiate a Condition Report. AND B.2 Continue action to restore the required instrument channels to FUNCTIONAL status.	Immediately Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.3.3.1	Perform a CHANNEL CHECK on each meteorological monitoring channel identified in Table 13.3.3-1.	24 hours
TRS 13.3.3.2	Perform a CHANNEL CALIBRATION on each meteorological monitoring channel identified in Table 13.3.3-1.	184 days

Table 13.3.3 - 1
Meteorological Monitoring Instrumentation
(Common to Units 1 and 2)

Instrument	Location	Required Channels
1. Wind Speed		
a. Lower, Primary Instrument Lower, Secondary Instrument	Nominal Elevation 10m	1
b. Upper, Primary Instrument Upper, Secondary Instrument	Nominal Elevation 60m	1
2. Wind Direction		
a. Lower, Primary Instrument Lower, Secondary Instrument	Nominal Elevation 10m	1
b. Upper, Primary Instrument Upper, Secondary Instrument	Nominal Elevation 60m	1
3. Air Temperature - ΔT		
a. Primary Instrument Secondary Instrument	Nominal Elevation 10m - 60m	1

13.3 Instrumentation

TR 13.3.4 High-Energy Line Break Isolation Sensors

TR 13.3.4 The high-energy line break instrumentation channels listed in Table 13.3.4-1 shall be FUNCTIONAL.

APPLICABILITY: According to Table 13.3.4-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required steam generator blowdown line or letdown line isolation instrumentation channels nonfunctional.	A.1 Restore the nonfunctional channel to FUNCTIONAL status.	7 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate a Condition Report. AND B.2 Continue action to restore the required channel(s) to FUNCTIONAL status.	Immediately Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.3.4.1	Perform a COT on each required instrument channel listed in Table 13.3.4-1.	36 months

Table 13.3.4-1 (page 1 of 2)
High-Energy Line Break Instrumentation

Isolation Function	Instrument Number and Location		Required Channels	Applicable MODES
1. Steam Generator Blowdown Line isolation	Unit 1	Unit 2		
	TE 15212A (RB08) TE 15216A (RB08)	TE 15212A (RB131) TE 15216A (RB131)	1	
	TE 15212B (RC106) TE 15216B (RC106)	TE 15212B (RC03) TE 15216B (RC03)	1	
	TE 15212C (RC107) TE 15216C (RC107)	TE 15212C (RC01) TE 15216C (RC01)	1	
	TE 15212D (RC108) TE 15216D (RC108)	TE 15212D (RC02) TE 15216D (RC02)	1	
	FT 15212A (Loop 1) FT 15216A (Loop 1)	FT 15212A (Loop 1) FT 15216A (Loop 1)	1	MODES 1, 2, 3 and 4
	FT 15212B (Loop 2) FT 15216B (Loop 2)	FT 15212B (Loop 2) FT 15216B (Loop 2)	1	
	FT 15212C (Loop 3) FT 15216C (Loop 3)	FT 15212C (Loop 3) FT 15216C (Loop 3)	1	
	FT 15212D (Loop 4) FT 15216D (Loop 4)	FT 15212D (Loop 4) FT 15216D (Loop 4)	1	

Table 13.3.4-1 (page 2 of 2)
High-Energy Line Break Instrumentation

Isolation Function	Instrument Number and Location		Required Channels	Applicable MODES
2. Letdown line isolation	Unit 1	Unit 2		
	TE 15214A (A07) TE 15215A (A07)	TE 15214A (A100) TE 15215A (A100)	1	
	TE 15214B (A08) TE 15215B (A08)	TE 15214B (A101) TE 15215B (A101)	1	MODES 1, 2, 3 and 4
	TE 15214C (A09) TE 15215C (A09)	TE 15214C (A103) TE 15215C (A103)	1	

13.3 Instrumentation

TR 13.3.5 Turbine Overspeed Protection

TR 13.3.5 The turbine overspeed protection system shall be FUNCTIONAL.

APPLICABILITY: MODE 1
MODES 2 and 3 except when all main steam line isolation valves and associated bypass valves are closed and all other steam flow paths to the turbine are isolated.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more high pressure turbine stop or control valves nonfunctional.	A.1 Restore nonfunctional valve(s) to FUNCTIONAL status. OR A.2 Isolate the affected steampath(s). OR A.3 Plant management to determine an alternate course of action that continues to assure the safe operation of the plant.	72 hours 72 hours 72 hours
B. One or more low pressure turbine intermediate stop or intercept valves nonfunctional.	B.1 Restore nonfunctional valve(s) to FUNCTIONAL status. OR B.2 Isolate the affected steampath(s).	72 hours 72 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	OR B.3 Plant management to determine an alternate course of action that continues to assure the safe operation of the plant.	72 hours
C. Required Action and associated Completion Time of Condition A or B not met. OR Turbine overspeed protection nonfunctional for reasons other than Condition A or B.	C.1 Isolate the turbine from the steam supply. OR Plant management to determine an alternate course of action that continues to assure the safe operation of the plant.	6 hours 6 hours

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE	FREQUENCY
TRS 13.3.5.1 ----------NOTE---------- 1. Only required to be performed in MODE 1 and MODE 2 with the turbine operating. --- Cycle each of the following valves through at least one complete cycle from the running position. a. Four high pressure turbine stop valves b. Six low pressure turbine intermediate stop valves. c. Six low pressure turbine intercept valves, and d. Four high pressure turbine control valves	In accordance with GET-8039 but not to exceed 6 months

(continued)

TECHNICAL REQUIREMENT SURVEILLANCES (continued)

TRS 13.3.5.2	Perform a CHANNEL CALIBRATION.	18 months
TRS 13.3.5.3	Disassemble each of the above valves and perform a visual and surface inspection of valve seats, disks, and stems to verify no unacceptable flaws or corrosion.	126 months

13.3 Instrumentation

TR 13.3.6 Fuel Handling Building Post Accident Ventilation Actuation Instrumentation (common system).

TR 13.3.6 The fuel handling building (FHB) post accident ventilation actuation instrumentation identified in Table 13.3.6-1 shall be FUNCTIONAL.

APPLICABILITY: Whenever irradiated fuel is in either storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required FHB ventilation actuation instruments nonfunctional.	A.1 Apply Required Actions of TR 13.9.5.	In accordance with TR 13.9.5.

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE	FREQUENCY
TRS 13.3.6.1 Perform CHANNEL CHECK	31 days
TRS 13.3.6.2 Perform COT	18 months
TRS 13.3.6.3 Perform ACTUATION LOGIC TEST	184 days
TRS 13.3.6.4 Perform CHANNEL CALIBRATION	18 months
TRS 13.3.6.5 Perform TADOT	18 months

Table 13.3.6-1

FHB Post Accident Ventilation
Actuation Instrumentation

Instruments	Required Channels	Surveillance Requirements	Trip Setpoint
1. Manual Initiation	1	TRS 13.3.6.5	NA
2. FHB Exhaust Duct Radiation Signal (ARE-2532 A&B ARE-2533 A&B)	1	TRS 13.3.6.1 TRS 13.3.6.2 TRS 13.3.6.4	(a)
3. Automatic Actuation Logic and Actuation Relays	1	TRS 13.3.6.3	NA

(a) Setpoints will not exceed the limits of TS 5.5.4.g.

13.3 Instrumentation

TR 13.3.7 Ultrasonic Mode Calorimetric

TR 13.3.7 The Ultrasonic Mode Calorimetric shall be FUNCTIONAL with:

a. The Caldon LEFM CheckPlus system FUNCTIONAL, and

b. The Integrated Plant Computer (IPC) calorimetric (UQ1118) FUNCTIONAL.

APPLICABILITY: MODE 1 with THERMAL POWER > 3565 MWt.

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	LEFM CheckPlus system nonfunctional.	A.1	Switch UQ1118 calorimetric display from the Ultrasonic Mode (Ccal) to the Normalized Venturi Mode (Ncal).	Immediately
		AND		
		A.2	Restore the LEFM CheckPlus system to FUNCTIONAL status.	48 hours
B.	Required Actions and associated Completion Times of Condition A not met.	B.1	Switch UQ1118 calorimetric display from the Normalized Venturi Mode (Ncal) to the non-normalized Venturi Mode (Vcal).	Immediately
		AND		
		B.2	Reduce reactor core power to $\leq$ 3565 MWt.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. IPC Calorimetric (UQ1118) nonfunctional.	C.1 Verify reactor core power ≤ 3625.6 MWt by ensuring the higher of average Power Range NIS or Delta-T indications ≤ 100% RTP. AND	1 hour
	C.2 Restore the IPC Calorimetric (UQ1118) to FUNCTIONAL status.	Prior to performing the next required power range channel calorimetric heat balance comparison per SR 3.3.1.2.
D. Required Actions and associated Completion Times of Condition C not met.	D.1 Reduce reactor core power to ≤ 3565 MWt ensuring the higher of average Power Range NIS or Delta-T indications ≤ 98.3% RTP.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.3.7.1	Verify that the most recent performance of SR 3.3.1.2 is based on an Ultrasonic Mode Calorimetric (Ccal).	Prior to exceeding 3565 MWt.
TRS 13.3.7.2	Locally verify LEFM CheckPlus system FUNCTIONAL.	With LEFM CheckPlus system FUNCTIONAL, once within 4 hours with the Main Control Board (MCB) LEFM trouble annunciator illuminated or nonfunctional. AND Every 4 hours thereafter.
TRS 13.3.7.3	Perform LEFM CheckPlus electronics and system maintenance in accordance with plant procedures.	Once per 18 months
TRS 13.3.7.4	----------NOTE---------- Does not apply to steam line pressure ---------- Perform calibration of instrumentation and IPC computer points to support calorimetric (UQ1118) in accordance with plant procedures.	Once per 18 months
TRS 13.3.7.5	For Steam Line Pressure, perform calibration of instrumentation and IPC computer points to support calorimetric (UQ1118) in accordance with plant procedures.	Once per 72 months

13.3 Instrumentation

TR 13.3.8 Loose Part Detection System

TR 13.3.8 The Loose Part Detection System shall be FUNCTIONAL.

APPLICABILITY: MODES 1 and 2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. All channels or one or more collection regions nonfunctional.	A.1 Restore nonfunctional channel(s) to FUNCTIONAL status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate a Condition Report. AND B.2 Continue action to restore the required channels or collection regions to FUNCTIONAL status.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
TRS 13.3.8.1 Perform a CHANNEL CHECK.	24 hours
TRS 13.3.8.2 Perform a COT.	31 days
TRS 13.3.8.2 Perform a CHANNEL CALIBRATION.	18 months

13.3 INSTRUMENTATION

TR 13.3.9 Power Distribution Monitoring System (PDMS)

TR 13.3.9 The PDMS shall be Functional with the minimum inputs in Table 13.3.9-1.

APPLICABILITY: In MODE 1 ≥ 25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. TR not met.	A.1 Suspend the use of the PDMS.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.3.9.1	Perform a CHANNEL CHECK.	31 days
TRS 13.3.9.2	Perform a calibration of the PDMS using the movable incore detector system with at least 75% of the detector thimbles and at least 2 detector thimbles per quadrant, using the minimum thermocouple coverage, and with THERMAL POWER > 25% RTP.	Once after each refueling prior to THERMAL POWER exceeding 75% RTP
TRS 13.3.9.3	Perform calibration of the PDMS using the movable incore detector system with at least 50% of the detector thimbles and at least 2 detector thimbles per quadrant, using the minimum thermocouple coverage, and with THERMAL POWER > 25% RTP.	31 EFPD with minimum thermocouple coverage OR 180 EFPD with optimum thermocouple coverage.

BASES

TRS 13.3.9.3 For PDMS calibration, the quantity and the coverage distribution of core exit thermocouples used as data input must meet certain criteria. With respect to thermocouple coverage, the available core exit thermocouple coverage can be “optimum or “minimum” as described below. This criterion affects the TRS Frequency:

Optimum thermocouple coverage satisfies the minimum thermocouple Functionality requirement in Table 13.3.9-1 with the added requirement that the Functional pattern covers all internal fuel assemblies (no face along a baffle) within a chessboard “knight move” (an adjacent plus a diagonal square away).

Minimum thermocouple coverage satisfies thermocouple minimum Functionality requirements of Table 13.3.9-1 but does not meet the “knight move” pattern discussed above.

Table 13.3.9-1 (Page 1 of 1)
Power Distribution Monitoring System
Table 13.3.6-1

FUNCTION	MINIMUM REQUIRED INPUTS
1. Control Bank Position	4 control banks [a]
2. RSC Cold Leg Temperature T-cold	2 RCS Loops [b]
3. Reactor Power Level	1 [c]
4. Power Range Excore Detector Signals	3 [d]
5. Core Exit Thermocouple Temperatures	25% with ≥ 2 per quadrant

(a) Determined from either valid demand position indication or the average of individual DRPI indications.

(b) Either narrow range or wide range RTDs.

(c) Either valid secondary calorimetric, average power range neutron flux power, or average RSC loop ΔT.

(d) An input is a channel which consists of corresponding upper and lower detector sections.

B TR 13.3.7 Ultrasonic Mode Calorimetric

BASES

The reactor core power levels discussed in this Technical Requirement (TR) are based on the reactor core power level assumed in the reactor safety analysis and the magnitude of the calorimetric power determination uncertainty which is a function of the calorimetric method.

Operation at indicated core power levels above 3565 MWt requires a calorimetric power uncertainty determination of less than 2.0%. This is only possible if the Ultrasonic Mode calorimetric is functional. The Ultrasonic Mode calorimetric (Ccal) is unique in that it receives feedwater mass flow, feedwater temperature, and feedwater pressure inputs directly from the Caldon LEFM CheckPlus system. The LEFM system measures and transmits this data with lower uncertainty than the functionally equivalent instrumentation from the feedwater Venturi Mode calorimetric. The reduced uncertainty that is characteristic of the Ultrasonic Mode calorimetric requires a FUNCTIONAL LEFM System to provide the feedwater parameters listed above as well as a FUNCTIONAL IPC Calorimetric (UQ1118) for performing the thermal power calculations. The Normalized Venturi calorimetric (Ncal) will support operation above 3565 MWt and the required Power Range NIS channel adjustments for power level monitoring for up to 48 hours while the LEFM system is nonfunctional (Condition A). Upon the expiration of the 48-hour allowed outage time, reactor core power is reduced to $\leq$ 3565 MWt (Condition B). Use of a non-normalized venturi-based calorimetric does not support operation above 3565 MWt.

Conditions A and B address situations when the Caldon LEFM CheckPlus System is not FUNCTIONAL. Conditions C and D address situations when the IPC Calorimetric is not FUNCTIONAL. If both the Caldon LEFM CheckPlus System and the IPC calorimetric (UQ1118) are concurrently non-FUNCTIONAL, then their respective Conditions are entered and Completion Times tracked separately in accordance with TRM Section 11.3.

(continued)

BASES (continued)

FUNCTIONALITY REQUIREMENTS

LEFM CheckPlus System

"FUNCTIONAL" is defined as the ability of the system to calculate and communicate feedwater mass flow, feedwater temperature and pressure at the required uncertainty level to be used as input for the IPC Ultrasonic Mode calorimetric calculation (Ccal). The LEFM electronics package and the IPC/LEFM data link application, which perform extensive self monitoring and diagnostics to ensure proper operation, are required for the LEFM CheckPlus system to be FUNCTIONAL. Conditions which impact the LEFM status, LEFM/IPC communication status, or electronics cabinet internal temperature will trigger a MCB annunciator. An available IPC screen may be reviewed to determine what condition has caused the annunciator to alarm. More detailed diagnostic information is available locally at the LEFM electronics cabinet display screen.

MCB Annunciator Condition	Discussion	LEFM System Status
LEFM/IPC Data communication link has failed	The data from the LEFM cabinet are not communicating properly to the IPC. The IPC Ultrasonic Mode for calorimetric determination is impacted. Alarm condition.	nonfunctional
LEFM meter in non-normal status (Alert or Failure status)	The LEFM system has experienced a failure affecting the uncertainty requirements for the Ultrasonic Mode Calorimetric. Specific cause of the status is available locally at the LEFM electronics display.	nonfunctional
LEFM Electronics cabinet internal temperature is above the high setpoint.	The temperature of the LEFM electronics cabinet is above the high temperature setpoint. The LEFM system can continue to meet the uncertainty requirements for the Ultrasonic Mode Calorimetric. MCB annunciator will be triggered when High Temperature limit has been exceeded to allow monitoring and corrective action prior to exceeding the Hi-Hi limit.	FUNCTIONAL

Failure to restore the LEFM CheckPlus system to FUNCTIONAL status requires entry into Condition B which requires reducing the reactor core power to $\leq$ 3565 MWt.

(continued)

13.4 Reactor Coolant System (RCS)

TR 13.4.1 Chemistry

TR 13.4.1 RCS chemistry shall be maintained within the limits specified in Table 13.4.1-1.

APPLICABILITY: At all times, except for dissolved oxygen when $T_{avg} \leq 250$ °F.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more chemistry parameters > steady-state limit and ≤ transient limit in MODES 1, 2, 3, or 4.	A.1 Restore parameter to within steady-state limit.	24 hours
B. One or more chemistry parameters > transient limit in MODES 1, 2, 3, or 4. OR Required Action and associated Completion Time of Condition A not met.	B.1 Plant management to determine an alternate course of action that continues to assure the safe operation of the plant. OR B.2.1 Be in Mode 3. AND B.2.2 Be in Mode 5.	6 hours 6 hours 36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. ----------NOTE---------- All Required Actions must be completed whenever this Condition is entered. ----------	C.1 Initiate action to reduce the pressurizer pressure to ≤ 500 psig.	Immediately
	AND	
Chloride or fluoride concentration > steady-state limit for > 24 hours in any condition other than MODES 1, 2, 3, or 4.	C.2 Perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the RCS.	Prior to increasing pressurizer pressure > 500 psig.
		OR
OR		Prior to entering MODE 4.
Chloride or fluoride concentration > transient limit in any condition other than MODES 1, 2, 3, or 4.	AND	
	C.3 Determine that the RCS remains acceptable for continued operation.	Prior to increasing pressurizer pressure > 500 psig.
		OR
		Prior to entering MODE 4.

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.4.1.1	----------NOTES---------- Not required to be performed for dissolved oxygen when T_{avg} ≤ 250 °F.	
	Not required for chloride and fluoride until 72 hours after Mode 6 entry from defueled conditions. ----------	
	Verify RCS chemistry within limits specified on Table 13.4.1-1.	72 hours

Table 13.4.1-1

RCS Chemistry Limits

PARAMETER	STEADY-STATE LIMIT	TRANSIENT LIMIT
Dissolved Oxygen [(a)]	≤ 0.10 ppm	≤ 1.00 ppm
Chloride	≤ 0.15 ppm	≤ 1.50 ppm
Fluoride	≤ 0.15 ppm	≤ 1.50 ppm

[(a)] Limits not applicable when $T_{avg} \leq 250$ °F.

13.4 Reactor Coolant System

TR 13.4.2 Pressurizer

TR 13.4.2 The pressurizer temperature (TI-0453, TI-0454) shall be limited to:

a. A maximum heatup of 100 °F in any 1-hour period,

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

c. A maximum auxiliary spray water temperature differential of 625 °F (TI-0126)

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ----------NOTES---------- 1. All Required Actions must be completed whenever this Condition is entered. 2. Heatup and cooldown limits do not apply to the pressurizer surge line. ----------		
Pressurizer temperature not within limits.	A.1 Restore pressurizer temperature to within limits. AND	30 minutes
	A.2 Perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the pressurizer.	72 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	AND A.3 Determine that the pressurizer remains acceptable for continued operation.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Plant management to determine an alternate course of action that continues to assure the safe operation of the plant. OR B.2.1 Be in MODE 3. AND B.2.2 Reduce pressurizer pressure to < 500 psig.	6 hours 6 hours 36 hours

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.4.2.1	----------NOTE---------- Only required to be performed during system heatup and cooldown. ----------	
	Verify pressurizer heatup and cooldown rates are within limits.	30 minutes

(continued)

TECHNICAL REQUIREMENT SURVEILLANCES (continued)

SURVEILLANCE		FREQUENCY
TRS 13.4.2.2	----------NOTE---------- Only required to be performed during auxiliary spray operation. ----------	
	Verify the auxiliary spray water temperature differential is within limit.	12 hours

13.4 Reactor Coolant System (RCS)

TR 13.4.3 RCS Vents

TR 13.4.3 Two reactor vessel head vent paths each consisting of two vent valves and a control valve powered from emergency busses, shall be FUNCTIONAL and closed.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more reactor vessel head vent valves in a vent path nonfunctional.	----------Note---------- 1. Power may be temporarily restored to the actuator of an nonfunctional vent valve under administrative control provided that both control valves are FUNCTIONAL and closed, or power is removed from the control valve actuator(s). ---------- A.1 Initiate action to maintain the nonfunctional vent path closed with power removed from the vent valve actuators. <u>AND</u> A.2 Restore vent valve(s) to FUNCTIONAL status.	Immediately 30 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One reactor vessel head vent path control valve nonfunctional.	B.1 Verify all vent valves for both vent paths are closed. AND B.2 Restore control valve to FUNCTIONAL status.	1 hour AND Once per 12 hours thereafter. 30 days
C. Two reactor vessel head vent paths nonfunctional.	C.1 Restore one vent path to FUNCTIONAL status.	72 hours
D. Required Action and associated Completion Time not met.	D.1 Initiate a Condition Report. AND D.2 Continue action to restore the required vent path(s) to FUNCTIONAL status.	Immediately Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.4.3.1	Verify all manual isolation valves in each vent path are locked in the open position.	18 months
TRS 13.4.3.2	Verify each vent and control valve operates through one complete cycle of full travel from the control room.	18 months
TRS 13.4.3.3	Verify flow through the RCS vent paths during venting.	18 months

13.5 Emergency Core Cooling System

TR 13.5.1 Emergency Core Cooling System (ECCS)

TR 13.5.1 The ECCS subsystems required OPERABLE in accordance with Technical Specifications 3.5.2 and 3.5.3 shall maintain:

a. Unrestricted containment sump suctions,

b. Throttle valves in correct position, and

c. Flow balanced.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more ECCS subsystems inoperable.	A.1 Refer to Technical Specification 3.5.2 or 3.5.3, as applicable, and associated Required Actions.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.5.1.1	Perform a visual inspection of accessible areas of containment to verify that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment emergency sump and cause restriction of the pump suctions during LOCA conditions.	Once prior to entry into MODE 4 from MODE 5 AND Thereafter at the completion of each containment entry.

(continued)

TECHNICAL REQUIREMENT SURVEILLANCES (continued)

SURVEILLANCE		FREQUENCY
TRS 13.5.1.2	Verify correct position of each electrical and/or mechanical position stop for the following ECCS throttle valves: 1204-U4-022 1204-U4-139 1204-U4-023 1204-U4-140 1204-U4-024 1204-U4-141 1204-U4-025 1204-U4-142 1204-U4-116 1204-U4-118 1204-U4-117 1204-U4-119	Once within 4 hours following valve stroking or maintenance AND 18 months.
TRS 13.5.1.3	----------NOTE---------- 1. Centrifugal charging pump flow shall not exceed the following: • 555 gpm with non-boosted suction (e.g., cold leg injection alignment). • 570 gpm with boosted suction (e.g., cold leg recirculation alignment). 2. Safety injection pump flow shall not exceed the following: • 660 gpm with non-boosted suction (e.g., cold leg injection alignment). • 675 gpm with boosted suction (e.g., cold leg recirculation alignment). ----------	

(continued)

THIS PAGE APPLICABLE TO UNIT 1 ONLY.

TECHNICAL REQUIREMENT SURVEILLANCES

TRS 13.5.1.3 (continued) Perform a flow balance test, during shutdown, and verify that: a) For centrifugal charging pump lines (cold leg injection) with a single pump running: i) Simulated seal flow rate Isolated [1] ii) Pump discharge resistance a) Train A: 0.0107 - 0.0123 ft/gpm^2 [2] [3] b) Train B: 0.0097 - 0.0123 ft/gpm^2 [2] [3] iii) Maximum branch line imbalance 800” WC [2] b) For safety injection pump lines (cold leg injection) with a single pump running: i) Miniflow Isolated ii) Pump discharge resistance 0.0043 - 0.0056 ft/gpm^2 [2] [4] iii) Maximum branch line imbalance 90” WC [2] c) For safety injection pump lines (hot leg injection) with a single pump running: i) Miniflow Isolated ii) Pump discharge resistance 0.0043 - 0.0058 ft/gpm^2 [2] iii) Maximum branch line imbalance 500” WC [2] d) For RHR pump lines, with a single pump running, the sum of the injection line flow rates is $\geq$ 3788 gpm.	Once following completion of modifications to the ECCS subsystem(s) that alter the subsystem(s) flow characteristics.

[1] Normal seal injection of approximately 32 gpm can be provided by the charging pump during the test.
[2] Corrected for test measurement accuracy based on the instruments listed in Table 13.5.1-1.
[3] Backflow through check valve 1208-U6-129 combined with backflow through either check valve 1208-U6-142 or 1208-U6-149 must be confirmed as not exceeding five gpm.
[4] Backflow through check valves 1204-U6-098 and 1204-U6-099 must be confirmed as not exceeding five gpm.

THIS PAGE APPLICABLE TO UNIT 2 ONLY.

TECHNICAL REQUIREMENT SURVEILLANCES

TRS 13.5.1.3 (continued) Perform a flow balance test, during shutdown, and verify that: a) For centrifugal charging pump lines (cold leg injection) with a single pump running: i) Simulated seal flow rate Isolated [1] ii) Pump discharge resistance 0.0097 - 0.0123 ft/gpm^2 [2] [3] iii) Maximum branch line imbalance 800” WC [2] b) For safety injection pump lines (cold leg injection) with a single pump running: i) Miniflow Isolated ii) Pump discharge resistance 0.0043 - 0.0056 ft/gpm^2 [2] [4] iii) Maximum branch line imbalance 90” WC [2] c) For safety injection pump lines (hot leg injection) with a single pump running: i) Miniflow Isolated ii) Pump discharge resistance 0.0043 - 0.0058 ft/gpm^2 [2] iii) Maximum branch line imbalance 500” WC [2] d) For RHR pump lines, with a single pump running, the sum of the injection line flow rates is $\geq$ 3788 gpm.	Once following completion of modifications to the ECCS subsystem(s) that alter the subsystem(s) flow characteristics.

[1] Normal seal injection of approximately 32 gpm can be provided by the charging pump during the test.
[2] Corrected for test measurement accuracy based on the instruments listed in Table 13.5.1-1.
[3] Backflow through check valve 1208-U6-129 combined with backflow through either check valve 1208-U6-142 or 1208-U6-149 must be confirmed as not exceeding five gpm.
[4] Backflow through check valves 1204-U6-098 and 1204-U6-099 must be confirmed as not exceeding five gpm.

Table 13.5.1-1

Assumed Instrument Accuracies
for TRS 13.5.1.3

Instruments	Description	Accuracy
1. DP Gauge for FE-917	250 - 1250 inch WC	6 inch WC
2. Flow Channel for FE-918	0 - 800 gpm	7 gpm
3. Flow Channel for FE-922	0 - 800 gpm	7 gpm
4. DP Gauges for FE-924/925/926/927	0 - 7000 inch WC	50 inch WC
5. DP Gauges for FE 980/981/982/983	750 - 1250 inch WC	6.5 inch WC
6. DP Gauges for FE-984/985/986/987	1500 - 3000 inch WC	15 inch WC
7. CCP Discharge Pressure	0 - 3000 psig	7.5 psi
8. SIP Discharge Pressure	0 - 2000 psig	5 psi
9. FE-917	2.2341 inch bore diameter	0.0004 inch
10. FE-918	2.6909 inch bore diameter	0.0005 inch
11. FE-922	2.6909 inch bore diameter	0.0005 inch

13.7 Plant Systems

TR 13.7.1 Steam Generator (SG) Pressure/Temperature Limitation

TR 13.7.1 The pressure of the reactor and secondary coolants in the SG shall be ≤ 200 psig.

APPLICABILITY: Whenever the temperature of the reactor or secondary coolant in any SG is ≤ 70 °F and the primary or secondary systems are capable of being pressurized.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. ----------NOTE---------- All Required Actions must be completed whenever this Condition is entered. ----------			
SG pressure not within limits.	A.1	Reduce the pressure of the applicable SG side to ≤ 200 psig.	30 minutes
	AND		
	A.2	Perform an engineering evaluation to determine the effect of the over-pressurization on the structural integrity of the SG.	Prior to increasing the SG coolant temperatures > 200 °F
	AND		
	A.3	Determine that the SG remains acceptable for continued operation.	Prior to increasing the SG coolant temperatures > 200 °F

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE	FREQUENCY
TRS 13.7.1.1 Verify the pressure in each side of the SG is < 200 psig.	1 hour

13.7 Plant Systems

TR 13.7.2 Snubbers

TR 13.7.2 All required snubbers utilized on safety-related systems shall be FUNCTIONAL. Snubbers utilized on non-safety-related systems shall be FUNCTIONAL if the failure of that snubber or the non-safety-related system would have an adverse effect on any safety-related system.

APPLICABILITY: MODES 1, 2, 3, and 4.
MODES 5 and 6 for required snubbers located on systems required OPERABLE or FUNCTIONAL in those MODES.

ACTIONS

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

1. Separate Condition entry is allowed for each affected system.
2. Removal of a snubber from attached system does not result in the snubber becoming nonfunctional.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required snubbers removed from attached system. OR One or more required snubbers nonfunctional while in place.	A.1 Refer to Technical Specification LCO 3.0.8, as applicable, and associated Required Actions.	Immediately
B. One or more required snubbers nonfunctional.	B.1 Perform an engineering evaluation on the supported component in accordance with ASME OM Code, Subsection ISTD.	72 hours
C. Required Action and associated Completion Time of Condition B not met.	C.1 Declare attached system inoperable or nonfunctional as appropriate.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

----------NOTE----------
Each required snubber shall be demonstrated FUNCTIONAL by performance of an inservice examination and testing program in accordance with the ASME OM Code, Subsection ISTD.

	SURVEILLANCE	FREQUENCY
TRS 13.7.2.1	Perform visual examinations in accordance with the ASME OM Code, Subsection ISTD.	In accordance with the site Snubber Program.
TRS 13.7.2.2	Perform an inspection of all required snubbers attached to sections of systems that have experienced unexpected, potentially damaging transients in accordance with table 13.7.2-1.	Within 6 months following the event
TRS 13.7.2.3	Perform a functional test on a representative sample of snubbers in accordance with ASME OM Code, Subsection ISTD. For applicability to Repaired and Replaced snubbers reference table 13.7.2-2.	Each Fuel Cycle

(continued)

TECHNICAL REQUIREMENT SURVEILLANCES (continued)

TRS 13.7.2.4	Snubber service life will be monitored in accordance with ASME OM Code, Subsection ISTD.	Each Fuel Cycle

Table 13.7.2-1

Transient Event Inspection

1. An inspection shall be performed of all snubbers attached to sections of systems that have experienced unexpected, potentially damaging transients as determined from a review of operational data and a visual inspection of the systems within 6 months following such an event.

2. In addition to satisfying the visual inspection acceptance criteria, freedom-of-motion of mechanical snubbers shall be verified using at least one of the following:

   a) Manually induced snubber movement; or

   b) Evaluation of in-place snubber piston setting; or

   c) Stroking the mechanical snubber through its full range of travel.

Table 13.7.2-2

Functional Tests

Functional Testing of Repaired and Replaced Snubbers
Snubbers which fail the visual inspection or the functional test acceptance criteria shall be repaired or replaced. Where applicable, repair and replacement of snubbers shall be performed in accordance with the requirements of ASME Code, Section XI, except where relief has been granted by the NRC. Replacement snubbers and snubbers which have repairs which might affect the functional test results shall be tested to meet the functional test criteria before installation in the unit. Mechanical snubbers shall have met the acceptance criteria subsequent to their most recent service, and the freedom-of-motion test must have been performed within 12 months before being installed in the unit.

13.7 Plant Systems

TR 13.7.3 Sealed Source Contamination

TR 13.7.3 The removable contamination shall be < 0.005 microcuries for each sealed source containing radioactive material >100 microcuries of beta and/or gamma emitting material or > 5 microcuries of alpha emitting material.

APPLICABILITY: At all times.

ACTIONS

----------NOTE----------
TR 13.0.3 is not applicable

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Sealed source contamination not within limit.	A.1 Remove sealed source from use. AND	Immediately
	A.2.1 Decontaminate and repair the sealed source OR	Prior to returning the sealed source to use
	A.2.2 Dispose of sealed source in accordance with NRC regulations.	In accordance with NRC regulations

TECHNICAL REQUIREMENT SURVEILLANCES

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

1. The licensee, other persons specifically authorized by the NRC, or an Agreement State shall perform the Technical Requirement Surveillances.

2. The test methods shall have a detection sensitivity of at least 0.005 microcuries per test sample.

SURVEILLANCE		FREQUENCY
TRS 13.7.3.1	----------NOTES---------- 1. Not applicable to startup sources and fission detectors previously subjected to core flux. 2. Only applicable to sources in use with: a. Half-lives > 30 days, excluding Hydrogen 3, and b. In any form other than gas. ---------- Verify removable contamination is within limit for each sealed source.	6 months
TRS 13.7.3.2	----------NOTES---------- 1. Only applicable to sources not in use. 2. Sealed sources and fission detectors transferred without a certificate indicating the last test date shall be tested prior to being placed into use. ---------- Verify the removable contamination is within limit for each sealed source and fission detector.	Within 6 months prior to use or transfer to another licensee.

(continued)

TECHNICAL REQUIREMENT SURVEILLANCES (continued)

SURVEILLANCE		FREQUENCY
TRS 13.7.3.3	----------NOTE---------- Only applicable to startup sources and fission detectors not in use. ----------	
	Verify the removable contamination is within limit for each startup source and fission detector.	Within 31 days prior to being installed in the core or being subjected to core flux. AND Following repair or maintenance to the source.

13.7 Plant Systems

TR 13.7.4 Reactor Coolant Pump (RCP) Thermal Barrier Cooling Water Isolation

TR 13.7.4 The RCP thermal barrier isolation function shall be FUNCTIONAL.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RCP thermal barrier isolation function nonfunctional.	A.1 Restore to FUNCTIONAL status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Initiate a Condition Report. AND	Immediately
	B.2 Continue action to restore the required isolation function to FUNCTIONAL status.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.7.4.1	Verify valve HV-2041 automatically closes on thermal barrier outlet high header pressure and high header flow test signals.	18 months on a STAGGERED TEST BASIS.
TRS 13.7.4.2	Verify valves HV-19051, HV-19053, HV-19055, and HV-19057 automatically close on thermal barrier outlet high flow test signals.	18 months

13.7 Plant Systems

TR 13.7.5 Area Temperature Monitoring

TR 13.7.5 The area temperatures listed in Table 13.7.5-1 shall be maintained within the limits specified in Table 13.7.5-1.

----------NOTE----------
The area temperature may exceed the limit specified in Table 13.7.5-1 for ≤ 8 hours provided the temperature is maintained ≤ 150°F.

APPLICABILITY: Whenever the equipment in an affected area is required to be OPERABLE or FUNCTIONAL.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. With one or more areas exceeding the specified temperature limit for more than 8 hours.	A.1 Prepare an analysis to determine the effect on equipment OPERABILITY or FUNCTIONALITY and qualified life.	30 days
B. With one or more areas exceeding 150°F.	B.1.1 Restore the temperature to less than the specified limit for each affected area. AND	12 hours
	B.1.2 Prepare an evaluation to demonstrate equipment OPERABILITY or FUNCTIONALITY. OR	12 hours
	B.2 Declare the equipment in the affected area(s) inoperable or nonfunctional.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 13.7.5.1	----------NOTES---------- 1. Only required to be performed when the associated area normal HVAC system is not in service. 2. The area normal HVAC is defined as the minimum HVAC components specified in Table 13.7.5-1 which, shown through analysis or empirical data, are sufficient to maintain the area temperature below the limits specified in Table 13.7.5-1. 3. A stable temperature must be achieved if using empirical data to justify discontinuing or exempting an area from temperature monitoring. ----------	
	Verify the temperature in each area is within the specified limit.	12 hours

TABLE 13.7.5-1 (SHEET 1 OF 2)
UNITS 1 AND 2 AREA TEMPERATURE MONITORING REQUIREMENTS

UNIT 1 AREA TEMPERATURE LIMITS

Building	Room NO.	Temperature Limit(°F)
AUX	212	100
AUX	A047	100
AUX	B017	100
AUX	B023	100
AUX	C083	100
AUX	C113	100
AUX	D053	100
AUX	D067	100
AUX	D072	100
AUX	D073	100
AUX	D119	100
AUX	D121	100
CONTROL	A055	100
CONTROL	B065	100
CONTROL	B074	100
CONTROL	B078	100
EQUIPMENT	117	120
EQUIPMENT	125	120
FHB	B008	104

UNIT 1 MINIMUM NORMAL HVAC COMPONENTS

Building	Equipment Description	Tag Number
AUX	(1 of 2) Supply Fans AND (2 of 3) Continuous Exhaust Fans	1-1551-A7-001, -002 1-1553-N7-001, -002, -003
CONTROL	(1 of 1) Wing Area Normal AC Unit AND (1 of 1) Wing Area Normal Exh and Return Fan	1-1553-A7-001 1-1553-B7-001
FHB[(a)]	(1 of 2) Supply Fans AND (1 of 2) Normal Exhaust Filtration Unit	A-1541-A7-001, -002 A-1541-N7-001, -002
EQPT	(0 of 2) Fans	1-1526-B7-001, -002

TABLE 13.7.5-1 (SHEET 2 OF 2)

UNIT 2 AREA TEMPERATURE LIMITS

Building	Room NO.	Temperature Limit(°F)
AUX	221	100
AUX	A082	100
AUX	B113	100
AUX	C010	100
AUX	D106	100
AUX	D107	100
AUX	D113	100
AUX	D123	100
CONTROL	A002	100
CONTROL	A010	100
CONTROL	B002	100
CONTROL	B010	100
CONTROL	B019	100
EQUIPMENT	117	120
EQUIPMENT	125	120
FHB	B006	104

UNIT 2 MINIMUM NORMAL HVAC COMPONENTS

Building	Equipment Description	Tag Number
AUX	(1 of 2) Supply Fans AND (2 of 3) Continuous Exhaust Fans	2-1551-A7-001, -002 2-1553-N7-001, -002, -003
CONTROL	(1 of 1) Wing Area Normal AC Unit AND (1 of 1) Wing Area Normal Exh and Return Fan	2-1553-A7-001 2-1553-B7-001
FHB[(a)]	(1 of 2) Supply Fans AND (1 of 2) Normal Exhaust Filtration Unit	A-1541-A7-001, -002 A-1541-N7-001, -002
EQPT	(0 of 2) Fans	2-1526-B7-001, -002

a. Whenever less than the minimum normal HVAC components for the fuel handling building are in service, the area temperatures must be verified for applicable rooms of both Units 1 and 2.

13.7 Plant Systems

TR 13.7.6 Main Steam Isolation Valves (MSIVs)

----------(NOTE)----------
This Technical Requirement contains a listing of the MSIVs subject to Technical Specification SR 3.7.2.1.

Table 13.7.6-1

Main Steam Isolation Valves

VALVE NUMBER	ISOLATION TIME (SECONDS)
1HV-3006A	≤ 5
1HV-3006B	≤ 5
1HV-3016A	≤ 5
1HV-3016B	≤ 5
1HV-3026A	≤ 5
1HV-3026B	≤ 5
1HV-3036A	≤ 5
1HV-3036B	≤ 5
2HV-3006A	≤ time shown in Figure 13.7.6-1(1)
2HV-3006B	≤ 5
2HV-3016A	≤ time shown in Figure 13.7.6-1(1)
2HV-3016B	≤ 5
2HV-3026A	≤ time shown in Figure 13.7.6-1(1)
2HV-3026B	≤ 5
2HV-3036A	≤ time shown in Figure 13.7.6-1(1)
2HV-3036B	≤ 5

(1) Times shown in Figure 13.7.6-1 are for the non-flowing condition

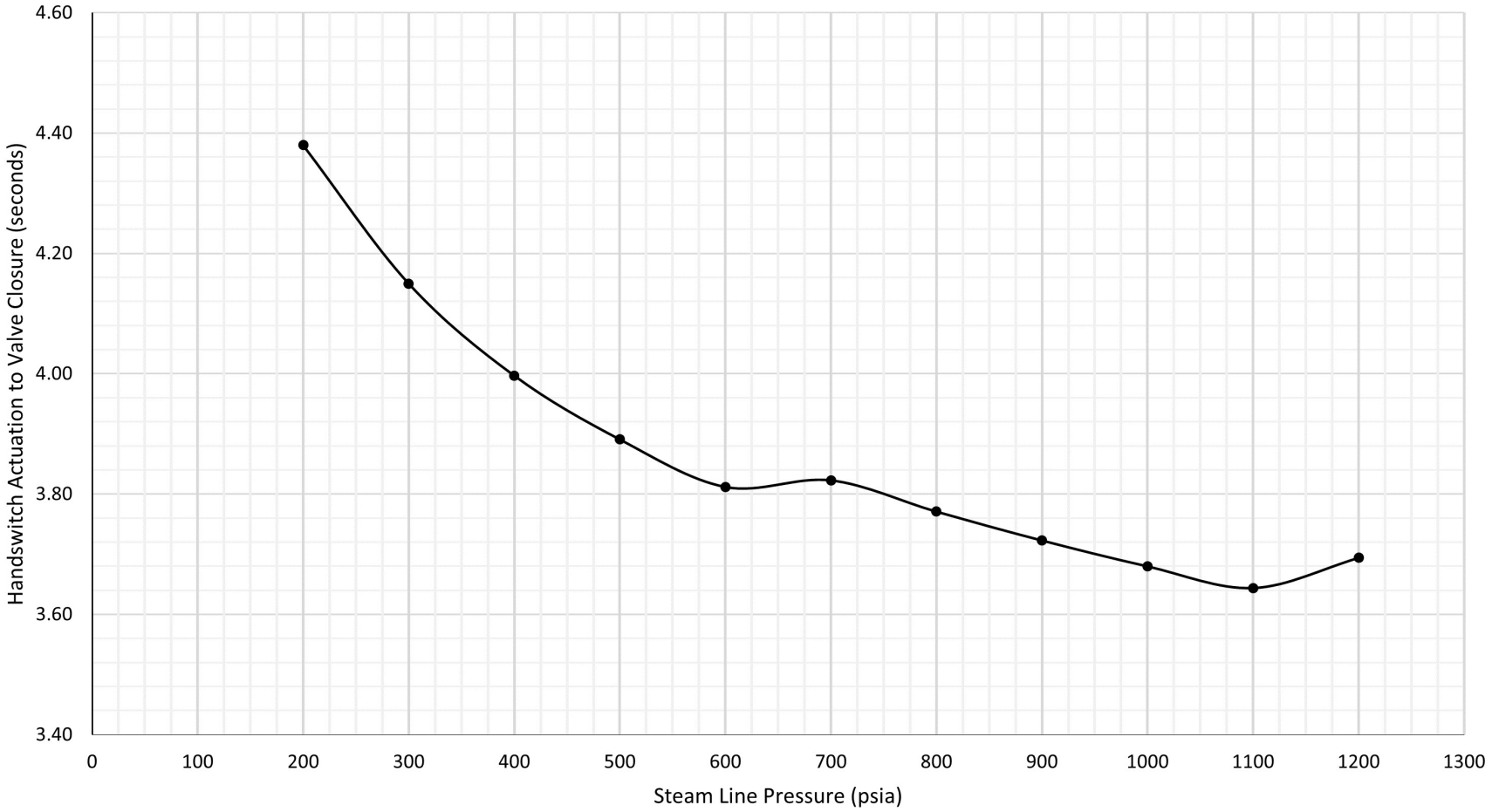

Figure 13.7.6-1

Main Stream Isolation Valves

13.7 Plant Systems

TR 13.7.7 Feedwater Isolation Valves (FIVs) and Feedwater Control Valves (FCVs) and Associated Bypass Valves

----------NOTE----------
This Technical Requirement contains a listing of the FIVs, FCVs, and Associated Bypass Valves subject to Technical Specification SR 3.7.3.1.

Table 13.7.7-1

Feedwater Isolation Valves and Feedwater Control Valves and Associated Bypass Valves

VALVE NUMBER	ISOLATION TIME (SECONDS)
HV-5227	≤ 5
HV-5228	≤ 5
HV-5229	≤ 5
HV-5230	≤ 5
FV-0510	≤ 5
FV-0520	≤ 5
FV-0530	≤ 5
FV-0540	≤ 5
LV-5242	≤ 5
LV-5243	≤ 5
LV-5244	≤ 5
LV-5245	≤ 5

13.8 Electrical Power Systems

TR 13.8.1 Containment Penetration Conductor Overcurrent Protective Devices

TR 13.8.1 Containment penetration conductor overcurrent protective devices and feeder breakers to isolation transformers between 480V Class 1E busses and non Class 1E equipment as specified in Table 13.8.1-1 shall be FUNCTIONAL.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment penetration conductor overcurrent protective device(s) or feeder breakers to isolation transformers between 480V Class 1E busses and non Class 1E equipment nonfunctional.	A.1 Restore the protective device or feeder breaker to FUNCTIONAL status. OR	72 hours
	A.2.1 Deenergize the circuit(s) by racking out, locking open, or removing the nonfunctional circuit breaker or protective device and tripping the associated backup circuit breaker. AND	72 hours
	A.2.2 Declare the affected system or component inoperable or nonfunctional as appropriate. AND	72 hours
	A.2.3 Verify the nonfunctional circuit breaker or protective device racked out, locked open or removed.	Once per 31 days

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	OR	
	A.3.1 Deenergize the circuit(s) by racking out, locking open, or removing the nonfunctional circuit breaker or protective device.	72 hours
	AND	
	A.3.2 Declare the affected system or component inoperable or nonfunctional as appropriate.	72 hours
	AND	
	A.3.3 Verify the nonfunctional circuit breaker or protective device racked out, locked open or removed.	Once per 7 days
B. Required Action and associated Completion Time not met.	B.1 Initiate a Condition Report.	Immediately
	AND	
	B.2 Continue action to restore the required circuit breaker(s) or protective device(s) to FUNCTIONAL status.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

	SURVEILLANCE	FREQUENCY
TRS 13.8.1.1	Verify 13.8 kV circuit breaker FUNCTIONALITY by selecting, on a rotating basis, at least one of the circuit breakers, and performing the following: a. A CHANNEL CALIBRATION, b. An integrated system functional test which includes simulated automatic actuation of the system and verification that each required (phase or ground overcurrent) relay and associated circuit breakers and control circuits function as designed. Three out of the four phase and ground overcurrent relays are required for Containment Penetration Protection, and c. For each circuit breaker found nonfunctional during the above required functional tests (a and b), an additional representative sample of at least one of the circuit breakers of the nonfunctional type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested. This requirement will also apply to any failure of a phase or ground overcurrent relay associated with the breaker being tested.	18 months

(continued)

TECHNICAL REQUIREMENT SURVEILLANCES (continued)

	SURVEILLANCE	FREQUENCY
TRS 13.8.1.2	----------NOTES---------- 1. Circuit breakers selected for functional testing shall be selected on a rotating basis. 2. The functional test shall consist of injecting a current for each over current trip on the breaker and measuring the response time. The measured response time will be compared to the manufacturer's data to ensure that it is within the tolerances specified by the manufacturer. 3. For each circuit breaker found nonfunctional during these functional tests, an additional representative sample of ≥ 10% of all the circuit breakers of the nonfunctional type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested. ---------- Perform a functional test on a representative sample of ≥ 10% of each type of lower voltage circuit breakers.	18 months
TRS 13.8.1.3	Inspect and perform preventive maintenance on each circuit breaker in accordance with site procedures.	72 months

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TABLE 13.8.1-1
(SHEET 1 OF 30)[a]
CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES
AND ISOLATION DEVICES FOR
CLASS 1E TO NON-CLASS 1E FEEDS

Protective Device Number	Powered Equipment
1. 13.8 kV LOADS	
1/2NAA08[b] 1/2AAA[b]	REACTOR COOLANT PUMP MOTOR # 1 (1/2-1201-P6-001-M01)
1/2NAB06[b] 1/2BAB[b]	REACTOR COOLANT PUMP MOTOR #2 (1/2-1201-P6-002-M01)
1/2NAA07[b] 1/2CAC[b]	REACTOR COOLANT PUMP MOTOR #3 (1/2-1201-P6-003-M01)
1/2NAB07[b] 1/2DAD[b]	REACTOR COOLANT PUMP MOTOR #4 (1/2-1201-P6-004-M01)
2. 480 V ac FROM LOAD CENTERS	
1/2NB0106	CTB CAVITY COOLING FAN MOTOR #1 (1/2-1511-B7-001-M01)
1/2AB0404	CTB COOLING UNIT MOTOR #1 (HI-SPEED) (1/2-1501-A7-001-M01)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment
	(SHEET 2 OF 30)
1/2AB0405	(LO-SPEED)
1/2AB0408	CTB COOLING UNIT MOTOR #2 (HI-SPEED) (1/2-1501-A7-002-M01)
1/2AB0409	(LO-SPEED)
1/2BB0604	CTB COOLING UNIT MOTOR #3 (HI-SPEED) (1/2-1501-A7-003-M01)
1/2BB0605	(LO-SPEED)
1/2BB0608	CTB COOLING UNIT MOTOR #4 (HI-SPEED) (1/2-1501-A7-004-M01)
1/2BB0609	(LO-SPEED)
1/2AB0412	CTB COOLING UNIT MOTOR #5 (HI-SPEED) (1/2-1501-A7-005-M01)
1/2AB0413	(LO-SPEED)
1/2AB0416	CTB COOLING UNIT MOTOR #6 (HI-SPEED) (1/2-1501-A7-006-M01)
1/2AB0417	(LO-SPEED)
1/2BB0612	CTB COOLING UNIT MOTOR #7 (HI-SPEED) (1/2-1501-A7-007-M01)
1/2BB0613	(LO-SPEED)
1/2BB0616	CTB COOLING UNIT MOTOR #8 (HI-SPEED) (1/2-1501-A7-008-M01)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment
	(SHEET 3 OF 30)
1/2BB0617	(LO-SPEED)
1/2AB0508	CTB HYDROGEN RECOMBINER POWER PANEL #1 (1/2-1513-H7-001-H01)
1/2BB0708	CTB HYDROGEN RECOMBINER POWER PANEL #2 (1/2-1513-H7-002-H01)
1/2NB0804	CTB PRE-ACCESS FILTER FAN MOTOR #1 (1/2-1504-N7-001-M01)
1/2NB0904	CTB PRE-ACCESS FILTER FAN MOTOR #2 (1/2-1504-N7-002-M01)
1/2NB0805	CTB PRE-ACCESS FILTER UNIT HEATER #1 (1/2-1504-N7-001-H01)
1/2NB0905	CTB PRE-ACCESS FILTER UNIT HEATER #2 (1/2-1504-N7-002-H01)
1/2NB0806	CTB AUXILIARY COOLING UNIT FAN MOTOR #1 (1/2-1515-A7-001-M01)
1/2NB0906	CTB AUXILIARY COOLING UNIT FAN MOTOR #2 (1/2-1515-A7-002-M01)
1/2NB1006	CTB CAVITY COOLING UNIT FAN MOTOR #2 (1/2-1511-B7-002-M01)
1/2NB0902	CTB OUTAGE POWER FEEDER (1/2-1805-D3-B09DB)

1/2NB0914	CTB OUTAGE POWER FEEDER (1/2-1805-D3-B09DA)
1/2NB1705	CTB POLAR CRANE (1/2-2101-R4-001)

3. 480 V ac FROM MCCs

NOTE: 1/2ABC07-2 and 1/2ABC07-1 indicate two breakers in series at MCC cubicle, 1/2ABC-07 (Typical for all 480 V ac from MCCs).

1/2ABC07-2 1/2ABC07-1		CTB COOLING UNIT A7005 (1/2HV-2584A)
1/2ABC08-2 1/2ABC08-1		CTB COOLING UNIT A7006 (1/2HV-2584B)
1/2BBC07-2 1/2BBC07-1		CTB COOLING UNIT A7007 (1/2HV-2585A)
1/2BBC08-2 1/2BBC08-1		CTB COOLING UNIT A7008 (1/2HV-2585B)
1/2ABC13-2 1/2ABC13-1		CTB NORM PURGE EXH ISO (1/2HV-2628A)
1/2ABC15-2 1/2ABC15-1		CHARGE TO REAC COOL SYSTEM ISO (1/2HV-8146)
1BBC15-2 1BBC15-1	2BBC15-FU-A/B/C 2BBC15-1	CHARGE TO REAC COOL SYSTEM ISO (1/2HV-8147)

Breaker coordination is provided between 1/2AB0505 and the following:

1/2ABC20	ISOLATION TRANSFORMER 2ABC20X, 1ABC20RX (2-1807-Y3-RX11) (1-1807-Y3-RX25)
1/2ABC23	ISOLATION TRANSFORMER 2ABC23X, 1ABC23RX (2-1808-T3-103) (1-1808-T3-112)

Breaker coordination is provided between 1/2BB0705 and the following:

1/2BBC20	ISOLATION TRANSFORMER 2BBC20X, 1BBC20RX (2-1807-Y3-RX12) (1-1807-Y3-RX26)
1/2BBC23	ISOLATION TRANSFORMER 1/2BBC23X (1/2-1808-T3-104)

Breaker coordination is provided between 1/2AB0514 and the following:

1/2ABF13	ISOLATION TRANSFORMER 1/2ABF13X (1/2-1808-T3-105)

Breaker coordination is provided between 1/2BB0714 and the following:

1/2BBF13	ISOLATION TRANSFORMER 2BBF13X, 1BBF13RX (2-1808-T3-106) (1-1808-T3-115)

1/2ABC19-2 1/2ABC19-1		ACCUMULATOR LOOP #3 (1/2HV-8808C)
1BBC19-2 1BBC19-1	2BBC19-FU-A/B/C 2BBC19-1	ACCUMULATOR LOOP #2 (1/2HV-8808B)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment
(SHEET 6 OF 30)	
1/2ABC32-2 1/2ABC32-1	THERMAL BARRIER CW RCP 003 (1/2HV-19055)
1/2ABC33-2 1/2ABC33-1	THERMAL BARRIER CW RCP 004 (1/2HV-19057)
1/2NBE08-2 + TOL 1/2NBE08-1	RCP OIL LIFT PUMP MOTOR #1 (1/2-1201-P6-001-M02)
1/2NBE05-2 + TOL 1/2NBE05-1	RCP OIL LIFT PUMP MOTOR #2 (1/2-1201-P6-002-M02)
1/2NBF08-2 + TOL 1/2NBF08-1	RCP OIL LIFT PUMP MOTOR #3 (1/2-1201-P6-003-M02)
1/2NBF05-2 + TOL 1/2NBF05-1	RCP OIL LIFT PUMP MOTOR #4 (1/2-1201-P6-004-M02)
1/2NBE06-2 + TOL 1/2NBE06-1	CTB LWR LVL AIR CIRC FAN MOT #1 (1/2-1503-B7-001-M01)
1/2NBE09-2 + TOL 1/2NBE09-1	CTB LWR LVL AIR CIRC FAN MOT #2 (1/2-1503-B7-002-M01)
1/2NBE12-2 + TOL 1/2NBE12-1	CTB LWR LVL AIR CIRC FAN MOT #3 (1/2-1503-B7-003-M01)
1/2NBE15-2 + TOL 1/2NBE15-1	CTB LWR LVL AIR CIRC FAN MOT #4 (1/2-1503-B7-004-M01)
1/2NBF06-2 + TOL 1/2NBF06-1	CTB LWR LVL AIR CIRC FAN MOT #5 (1/2-1503-B7-005-M01)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment
(SHEET 7 OF 30)	
1/2NBF09-2 + TOL 1/2NBF09-1	CTB LWR LVL AIR CIRC FAN MOT #6 (1/2-1503-B7-006-M01)
1/2NBF12-2 + TOL 1/2NBF12-1	CTB LWR LVL AIR CIRC FAN MOT #7 (1/2-1503-B7-007-M01)
1/2NBF15-2 + TOL 1/2NBF15-1	CTB LWR LVL AIR CIRC FAN MOT #8 (1/2-1503-B7-008-M01)
1/2NBE07-2 + TOL 1/2NBE07-1	WET LAYUP RECIRC PUMP MOTOR (1/2-1301-P4-010-M01)
1/2NBF51-2 + TOL 1/2NBF51-1	WET LAYUP RECIRC PUMP MOTOR (1/2-1301-P4-011-M01)
1/2NBE43-2 + TOL 1/2NBE43-1	WET LAYUP RECIRC PUMP MOTOR (1/2-1301-P4-012-M01)
1/2NBF54-2 + TOL 1/2NBF54-1	WET LAYUP RECIRC PUMP MOTOR (1/2-1301-P4-013-M01)
1/2NBE10-2 1/2NBE10-1	FEEDER FOR LIGHTING XFMR 1NBE10X (1/2-1808-T3-009)
1/2NBE13-2 1/2NBE13-1	LIGHTING XFMR-1/2NBE13X (1/2-1808-T3-076)
1/2NBE14-2 + TOL 1/2NBE14-1	CTMT SUMP PUMP MOTOR (1/2-1214-P4-013-M01)
1/2NBF29-2 + TOL 1/2NBF29-1	CTMT SOUTH SUMP PUMP MOTOR (1/2-1214-P4-014-M01)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment
(SHEET 8 OF 30)	
1/2NBF14-2 + TOL 1/2NBF14-1	CTMT NORTH SUMP PUMP MOTOR (1/2-1214-P4-015-M01)
1/2NBE29-2 + TOL 1/2NBE29-1	CTMT SUMP PUMP MOTOR (1/2-1214-P4-016-M01)
1/2NBE16-2 1/2NBE16-1	INCORE DETECTOR DRIVE UNIT (1/2-1612-M6-001)
1/2NBE17-2 1/2NBE17-1	INCORE DETECTOR DRIVE UNIT (1/2-1612-M6-002)
1/2NBE20-2 1/2NBE20-1	INCORE DETECTOR DRIVE UNIT (1/2-1612-M6-003)
1/2NBE39-2 1/2NBE39-1	INCORE DETECTOR DRIVE UNIT (1/2-1612-M6-004)
1/2NBE40-2 1/2NBE40-1	INCORE DETECTOR DRIVE UNIT (1/2-1612-M6-005)
1/2NBE34-2 1/2NBE34-1	INCORE DETECTOR DRIVE UNIT (1/2-1612-M6-006)
1/2NBE19-2 1/2NBE19-1	TEMPORARY POWER 30 AMP DISCONNECT CTB-EL.210-COL.6
1/2NBE22-2 1/2NBE22-1	REACTOR COOLANT PUMP MOTOR HEATER #1 (1/2-1201-P6-001-H01)
1/2NBE26-2 1/2NBE26-1	REACTOR COOLANT PUMP MOTOR HEATER #2 (1/2-1201-P6-002-H01)

1/2NBF22-2 1/2NBF22-1		REACTOR COOLANT PUMP MOTOR HEATER #3 (1/2-1201-P6-003-H01)
1/2NBF26-2 1/2NBF26-1		REACTOR COOLANT PUMP MOTOR HEATER #4 (1/2-1201-P6-004-H01)
1/2NBE28-2 1/2NBE28-1		POWER RECEPTACLES (1/2-1805-R3-E12) (1/2-1805-R3-E10)
1/2NBE46-2 1/2NBE46-1		POWER RECEPTACLES (1/2-1805-R3-E08) (1/2-1805-R3-G13)
1/2NBF27-2 1/2NBF27-1		POWER RECEPTACLES (1/2-1805-R3-E09)
1/2NBF36-2 1/2NBF36-1		POWER RECEPTACLES (1/2-1805-R3-G11) (1/2-1805-R3-E11)
1NBE30-FU-A/B/C 1NBE30-1	2NBE30-2 + TOL 2NBE30-1	REAC COOL DRAIN TANK PUMP MOTOR #1 (1/2-1901-P6-001-M01)
1/2NBF30-2 + TOL 1/2NBF30-1		REAC COOL DRAIN TANK PUMP MOTOR #2 (1/2-1901-P6-002-M01)
1/2NBE23-2 1/2NBE23-1		REAC HD CABLE TRAY WINCHES (1/2-2101-R4-007/010-M01)
1/2NBE75-2 1/2NBE75-1		REAC HD CABLE TRAY WINCHES (1/2-2101-R4-008/009-M01)
1/2NBE54-2 1/2NBE54-1		RCP JIB CRANE HOIST/TROLLEY (1/2-2101-R4-003-M01, 2)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment

(SHEET 10 OF 30)

1/2NBE60-2 1/2NBE60-1	RCP JIB CRANE HOIST/TROLLEY (1/2-2101-R4-004-M01, 2)
1/2NBF38-2 1/2NBF38-1	CTMT FUEL XFER HITCH HOIST/TROLLEY (1/2-2101-R4-011-M01, 2)
1/2NBF39-2 1/2NBF39-1	PRESSURIZER HOIST/ TROLLEY (1/2-2101-R4-012-M01, 2)
1/2NBF45-2 1/2NBF45-1	POWER RECEPTACLES (1/2-1805-R3-G14) (1/2-1805-R3-G15)
1/2NBF69-2 1/2NBF69-1	HOIST/TROLLEY (1/2-2101-R4-005-M01, 2)
1/2NBF70-2 1/2NBF70-1	HOIST/TROLLEY (1/2-2101-R4-006-M01, 2)
1/2NBE33-2 + TOL 1/2NBE33-1	REAC CAVITY SUMP PUMP MOTOR (1/2-1214-P4-017-M01)
1/2NBF33-2 + TOL 1/2NBF33-1	REAC CAVITY SUMP PUMP MOTOR (1/2-1214-P4-018-M01)
1/2NBE37-2 1/2NBE37-1	EQPT HATCH & ASSY (1/2-2101-R2-016)
1/2NBE62-2 1/2NBE62-1	FDR TO LGT XFMR 1NBE62X (1/2-1808-T3-068)
1/2NBE73-2 1/2NBE73-1	FDR TO LGT XFMR 1NBE73X (1/2-1808-T3-074)
1/2NBF62-2 1/2NBF62-1	FDR TO LGT XFMR 1NBF62X (1/2-1808-T3-066)

1/2NBF78-2 1/2NBF78-1	FDR TO LGT XFMR 1NBF78X (1/2-1808-T3-072)
1/2NBF79-2 1/2NBF79-1	FDR TO LGT XFMR 1NBF79X (1/2-1808-T3-075)
1/2NBF10-2 1/2NBF10-1	LIGHTING XFMR 1NBF10X (1/2-1808-T3-012)
1/2NBF11-2 + TOL 1/2NBF11-1	CTB WALKWAY CIRCULATION MOT (1/2-1503-B7-010-M01)
1/2NBF13-2 1/2NBF13-1	LIGHTING XFMR 1NBF13X (1/2-1808-T3-010)
1/2NBF16-2 1/2NBF16-1	REACTOR VESSEL DISC PLATE ASSEMBLY, (1/2-2207-S6-001-R02) & POWER RECEPTACLE (1/2-1805-R3-B11)
1NBF17 + FU-A/B/C 2NBF17 + FU-A/B/C	REFUELING M/C (1/2-2101-R6-003)
1/2NBF19-2 1/2NBF19-1	REFUELING E & H CTL CONSOLE #1 (1/2-2203-P5-RE1) & (1/2-2203-P6-001-M01)
1/2NBF23-2 1/2NBF23-1	CTMT BLDG ELEVATOR (1/2-2101-P1-001)
1/2NBPC01-2 1/2NBPC01-1	PRESSURIZER CONTROL HEATER GROUP A
1/2NBPC02-2 1/2NBPC02-1	PRESSURIZER CONTROL HEATER GROUP B

TABLE 13.8.1-1

Protective Device Number	Powered Equipment

(SHEET 12 OF 30)

1/2NBPC03-2 1/2NBPC03-1	PRESSURIZER CONTROL HEATER GROUP C
1/2NBPC04-2 1/2NBPC04-1	PRESSURIZER CONTROL HEATER GROUP D
1/2NBPC05-2 1/2NBPC05-1	PRESSURIZER CONTROL HEATER GROUP E
1/2NBPC06-2 1/2NBPC06-1	PRESSURIZER CONTROL HEATER GROUP F
1/2NBPB101-2 1/2NBPB101-1	PRESSURIZER BACKUP HEATER GROUP 1A
1/2NBPB102-2 1/2NBPB102-1	PRESSURIZER BACKUP HEATER GROUP 1B
1/2NBPB103-2 1/2NBPB103-1	PRESSURIZER BACKUP HEATER GROUP 1C
1/2NBPB104-2 1/2NBPB104-1	PRESSURIZER BACKUP HEATER GROUP 1D
1/2NBPB105-2 1/2NBPB105-1	PRESSURIZER BACKUP HEATER GROUP 1E
1/2NBPB106-2 1/2NBPB106-1	PRESSURIZER BACKUP HEATER GROUP 1F
1/2NBPB107-2 1/2NBPB107-1	PRESSURIZER BACKUP HEATER GROUP 1G
1/2NBPB201-2 1/2NBPB201-1	PRESSURIZER BACKUP HEATER GROUP 2A
1/2NBPB202-2 1/2NBPB202-1	PRESSURIZER BACKUP HEATER GROUP 2B
1/2NBPB203-2 1/2NBPB203-1	PRESSURIZER BACKUP HEATER GROUP 2C
1/2NBPB204-2 1/2NBPB204-1	PRESSURIZER BACKUP HEATER GROUP 2D

1/2NBPB205-2 1/2NBPB205-1		PRESSURIZER BACKUP HEATER GROUP 2E
1/2NBPB206-2 1/2NBPB206-1		PRESSURIZER BACKUP HEATER GROUP 2F
1/2NBPB207-2 1/2NBPB207-1		PRESSURIZER BACKUP HEATER GROUP 2G
1/2NBPB301-2 1/2NBPB301-1		PRESSURIZER BACKUP HEATER GROUP 3A
1/2NBPB302-2 1/2NBPB302-1		PRESSURIZER BACKUP HEATER GROUP 3B
1/2NBPB303-2 1/2NBPB303-1		PRESSURIZER BACKUP HEATER GROUP 3C
1/2NBPB304-2 1/2NBPB304-1		PRESSURIZER BACKUP HEATER GROUP 3D
1/2NBPB305-2 1/2NBPB305-1		PRESSURIZER BACKUP HEATER GROUP 3E
1/2NBPB306-2 1/2NBPB306-1		PRESSURIZER BACKUP HEATER GROUP 3F
1/2ABE10-2 1/2ABE10-1		THERM BARRIER CW RCP 001 VALVE (1/2HV-19051)
1/2ABE11-2 1/2ABE11-1		THERM BARRIER CW RCP 002 VALVE (1/2HV-19053)
1/2ABE13-2 1/2ABE13-1		PRESSURIZER POWER RELIEF ISO VLV (1/2HV-8000A)
1BBE15-2 1BBE15-1	2BBE15-FU-A/B/C 2BBE15-1	PRESSURIZER POWER RELIEF ISO VLV (1/2HV-8000B)

1/2ABE14-2 1/2ABE14-1		CTB POST LOCA PURGE EXH ISO VLV (1/2HV-2624A)
1BBE14-2 1BBE14-1	2BBE14-FU-A/B/C 2BBE14-1	CTB POST LOCA PURGE EXH ISO VLV (1/2HV-2624B)
1BBE07-2 1BBE07-1	2BBE07-FU-A/B/C 2BBE07-1	REACTOR COOLANT SYSTEM HOT LEG SAMPLE (1/2HV-3548)
1/2ABE15-2 1/2ABE15-1		RHR LOOP 1 INLET ISO VALVE (1/2HV-8701A)
1/2ABE16-2 1/2ABE16-1		REACTOR COOLANT PUMP SEAL WTR ISO VALVE (1/2HV-8112)
1/2ABE17-2 1/2ABE17-1		CTMT ATM UNIT SERVICE AIR VLV (1/2HV-9380A)
1/2BBE17-2 1/2BBE17-1		CTMT ATM UNIT SERVICE AIR VLV (1/2HV-9380B)
1/2ABE19-2 1/2ABE19-1		ACCUMULATOR ISO LOOP #1 VLV (1/2HV-8808A)
1BBE19-2 1BBE19-1	2BBE19-FU-A/B/C 2BBE19-1	ACCUMULATOR ISO LOOP #4 VLV (1/2HV-8808D)
1/2ABE24-2 1/2ABE24-1		CTB NORM PURGE SPLY ISO VALVE (1/2HV-2626A)
1/2ABE26-2 1/2ABE26-1		CTB CLG UNIT A7001 VLV (1/2HV-2582A)
1/2ABE27-2 1/2ABE27-1		CTB CLG UNIT A7002 VLV (1/2HV-2582B)

1/2BBE26-2 1/2BBE26-1		CTB CLG UNIT A7003 VLV (1/2HV-2583A)
1/2BBE27-2 1/2BBE27-1		CTB CLG UNIT A7004 VLV (1/2HV-2583B)
1/2ABE29-2 + TOL 1/2ABE29-1		CTB LOCA CAV PUMP UNIT MOTOR #1 (1/2-1516-B7-001-M01)
1BBE29-2 + TOL 1BBE29-1	2BBE29-FU-A/B/C 2BBE29-1	CTB POST LOCA CAV PURGE UNIT MOTOR #2 (1/2-1516-B7-002-M01)
1BBE13-2 1BBE13-1	2BBE13-FU-A/B/C 2BBE13-1	RHR LOOP 2 INLET ISO VALVE (1/2HV-8702B)
1BBE24-2 1BBE24-1	2BBE24-FU-A/B/C 2BBE24-1	AUX COMP CW RETURN ISO VLV (1/2HV-1974)
1BBE25-2 1BBE25-1	2BBE25-FU-A/B/C 2BBE25-1	AUX COMP CW SPLY ISO VLV (1/2HV-1978)
1BBE37-2 1BBE37-1	2BBE37-FU-A/B/C 2BBE37-1	THERMAL BARRIER CW RETURN VALVE (1/2HV-2041)
1/2NBR05-2 + TOL 1/2NBR05-1		CTB CRDM CLG UNIT FAN 002 (1/2-1509-B7-002-M01)
1/2NBS05-2 + TOL 1/2NBS05-1		CTB CRDM CLG UNIT FAN 001 (1/2-1509-B7-001-M01)
1/2NBR09-2 + TOL 1/2NBR09-1		RCS HOT LEG SAMPLE VLV (1/2HV-3500)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment
(SHEET 16 OF 30)	
1/2NBS06-2 + TOL 1/2NBS06-1	CTB CRDM CLG UNIT FAN 003 (1/2-1509-B7-003-M01)
1/2NBR06-2 + TOL 1/2NBR06-1	CTB CRDM CLG UNIT FAN 004 (1/2-1509-B7-004-M01)
1/2NBR13-2 + TOL 1/2NBR13-1	CTB REAC SUPPORT CLG UNIT B7002 (1/2HV-12645)
1/2NBR16-2 + TOL 1/2NBR16-1	CTB REAC SUPPORT CLG UNIT B7004 (1/2HV-12647)
1/2NBS07-2 + TOL 1/2NBS07-1	CTB REAC SUPPORT CLG UNIT B7003 (1/2HV-12646)
1/2NBS13-2 + TOL 1/2NBS13-1	CTB REAC SUPPORT CLG UNIT B7001 (1/2HV-12644)
1/2NBR14-2 1/2NBR14-1	CTMT LEV 1 LTG XFMR 1/2NBR14X (1/2-1808-T3-026)
1/2NBS23-2 1/2NBS23-1	LTG XFMR 1/2NBS23X (1/2-1808-T3-069)
1/2NBS17-2 + TOL 1/2NBS17-1	CTB REAC SUPPORT CLG CTB REAC SUPPORT CLG UNIT MOTOR #1 (1/2-1512-B7-001-M01)
1/2NBR17-2 + TOL 1/2NBR17-1	CTB REAC SUPPORT CLG UNIT MOTOR #2 (1/2-1512-B7-002-M01)
1/2NBS19-2 + TOL 1/2NBS19-1	CTB REAC SUPPORT CLG UNIT MOTOR #3 (1/2-1512-B7-003-M01)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment

(SHEET 17 OF 30)

1/2NBR19-2 + TOL 1/2NBR19-1	CTB REAC SUPPORT CLG UNIT MOTOR #4 (1/2-1512-B7-004-M01)
1/2NBS41-2 + TOL 1/2NBS41-1	EXCESS LETDOWN HEXCH INLET VLV (1/2HV-8098)
1/2CD1I5N	RHR ISO VLV (1/2HV-8701B)
1/2DD1I6N	RHR ISO VLV (1/2HV-8702A)

4. 125 Vdc CIRCUITS

1/2AD1M04-2 1/2AD1M04-1	PRESSURIZER PORV (1/2PV-455A)
1/2BD1M04-2 1/2BD1M04-1	PRESSURIZER PORV (1/2PV-456A)

5. 120 Vac CIRCUITS

1/2NYC203-2 1/2NYC203-1	ROD POSITION INDICATION CONTAINMENT CABINET PWR #1 (1/2-1608-P5-RPA)
1/2NYC204-2 1/2NYC204-1	ROD POSITION INDICATION CONTAINMENT CABINET PWR #2 (1/2-1608-P5-RPB)

Backup Protection is provided by 1/2ABC44 for the following

1/2AYC118	CB AUX RELAY RM A/C MOTOR HTR (1/2-1539-A7-001-H01)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment
(SHEET 18 OF 30)	
1/2AYC124	CBSF BATT RM EXH FAN MOTOR HTRS (1/2-1532-B7-001-H01) (1/2-1532-B7-003-H01)
2AYC134	CBSF ELEC EQUIP RM ACU MOTOR HTR (2-1532-A7-001-H01)

Backup electrical isolation is provided by the following: (primary isolation is provided by fuses in the monitor light 24 V ac circuit).

1/2AYC131	MONITOR LIGHT BOX TRAIN A (TERM CAB 1/2ACPT05)
1/2AYC132	MONITOR LIGHT BOX TRAIN A (TERM CAB 1/2ACPT27)
1/2AYC133	MONITOR LIGHT BOX TRAIN A (TERM CAB 1/2ACPT07)
1/2AYC135	MONITOR LIGHT BOX TRAIN A (TERM CAB 1/2ACPT11)
1/2AYC136	MONITOR LIGHT BOX TRAIN A (TERM CAB 1/2ACPT15)

Backup protection is provided by 1/2BBC43 for the following:

2BYC122	CBSF ELECT EQUIP RM A/C MOTOR HTR (2-1532-A7-002-H01)
1/2BYC124	CBSF BATT RM EXH FAN MOTOR HTRS (1/2-1532-B7-002-H01)- (1/2-1532-B7-004-H01)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment

(SHEET 19 OF 30)

Backup protection is provided by 1/2NBE71 for the following:

1/2NYE103	CTB LWR LVL AIR CIRC FAN MOT HTR (1/2-1503-B7-001-H01)
1/2NYE104	CTB LWR LVL AIR CIRC FAN MOT HTR (1/2-1503-B7-002-H01)
1/2NYE105	CTB LWR LVL AIR CIRC FAN MOT HTR (1/2-1503-B7-003-H01)
1/2NYE106	CTB LWR LVL AIR CIRC FAN MOT HTR (1/2-1503-B7-004-H01)
1NYE109	CTB AUX CLG UNIT FAN MOT HTR (1-1515-B7-001-H01)
2NYE107	CTB AUX CLG UNIT FAN MOT HTR (2-1515-B7-001-H01)
1/2NYE122	WET LAYUP RECIRC PMP MTR HTRS (1/2-1301-P4-010-H01) (1/2-1301-P4-012-H01)

Backup protection is provided by 1/2NBF65 for the following:

1/2NYF101	CTB AUX CLG UNIT FAN MOT HTR (1/2-1515-A7-002-H01)
1/2NYF103	CTB LWR LVL AIR CIRC FAN MOT HTR (1/2-1503-B7-005-H01)
1/2NYF104	CTB LWR LVL AIR CIRC FAN MOT HTR (1/2-1503-B7-006-H01)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment

(SHEET 20 OF 30)

1/2NYF105	CTB WALKWAY CIRC MOT HTR (1/2-1503-B7-010-H01)
1/2NYF106	CTB LWR LVL AIR CIRC FAN MOT HTR (1/2-1503-B7-007-H01)
1/2NYF107	CTB LWR LVL AIR CIRC FAN MOT HTR (1/2-1503-B7-008-H01)
1/2NYF109	CTMT PREACCESS FILTER FAN MOT HTR (1/2-1504-N7-001-H02)
1/2NYF113	RFL E&H CSL #1 CONT PWR (1/2-2203-P5-RE1)
1/2NYF115	ROD DROP TEST EQUIP IN DRPI CAB (1/2-1608-P5-RPB)
1/2NYF116	ROD DROP TEST EQUIP IN DRPI CAB (1/2-1608-P5-RPA)
1/2NYF120	WET LAYUP RECIRC PUMP MTR HTR (1/2-1301-P4-011-H01) (1/2-1301-P4-013-H01)
1/2NYF121	CTB PREACCESS FILTER UNIT MTR HTR (1/2-1504-N7-002-H02)

Backup protection is provided by fuses for the following:

1/2NYF114	PERSONNEL LOCK DOOR MOTOR (1/2-2101-R2-014)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment

(SHEET 21 OF 30)

1/2NYE121	HVAC MISC. LOADS (1/2NYJB1423)
1/2AY2A10	TRAIN A SYSTEM STATUS MONITORING PANEL (1/2-1823-05-BPS)
1/2BY2B10	TRAIN B SYSTEM STATUS MONITORING PANEL (1/2-1823-05-BPS)
1/2NAA08-BRKR.AX	REACTOR COOLANT SYSTEM (1/2-1201-P6-001-M01)
1/2NAB06-BRKR.AX	REACTOR COOLANT SYSTEM (1/2-1201-P6-002-M01)
1/2NAA07-BRKR.AX	REACTOR COOLANT SYSTEM (1/2-1201-P6-003-MO1)
1/2NAB07-BRKR.AX	REACTOR COOLANT SYSTEM (1/2-1201-P6-004-M01)
1/2NCQMDFB-CB2 (LOCATED IN FLUX MAPPING CONSOLE) (1/2-1612-Q5-MDF)	INCORE FLUX MAPPING CONSOLE CONTROL POWER

Backup protection is provided by 1/2ABE52 for the following:

1AYE118	CTB COOLING UNIT MOTOR HTR (1-1501-A7-001-H01)
1AYE119	CTB COOLING UNIT MOTOR HTR (1-1501-A7-002-H01)
1AYE120	CTB COOLING UNIT MOTOR HTR (1-1501-A7-005-H01)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment

(SHEET 22 OF 30)

1AYE121	CTB COOLING UNIT MOTOR HTR (1-1501-A7-006-H01)
1/2AYE132	CTB POST LOCA CAVITY PURGE UNIT MOT HTR (1/2-1516-B7-001-H01)
1/2AYE112	AUX FDW PMP MOTOR HTR (1/2-1302-P4-003-H01)
1/2AYE122	RHR PMP MOTOR HTR (1/2-1205-P6-001-H01)
1/2AYE131	SI PMP MOTOR HTR (1/2-1204-P6-003-H01)
1/2AYE134	CS PMP MOTOR HTR (1/2-1206-P6-001-H01)
1/2AYE136	CVCS CNTR CHG PMP MOTOR HTR (1/2-1208-P6-002-H01)

Backup protection is provided by 1/2BBE55 for the following:

1BYE120	CTB COOLING UNIT MOTOR HTR (1-1501-A7-003-H01)
1BYE121	CTB COOLING UNIT MOTOR HTR (1-1501-A7-004-H01)
1BYE122	CTB COOLING UNIT MOTOR HTR (1-1501-A7-007-H01)
1BYE123	CTB COOLING UNIT MOTOR HTR (1-1501-A7-008-H01)

1/2BYE132	CTB POST LOCA CAV PURGE UNIT MOT HTR (1/2-1516-B7-002-H01)
1/2BYE126	CS PMP MOTOR HTR (1/2-1206-P6-002-H01)
1/2BYE128	RHR PUMP MOTOR HTR (1/2-1205-P6-002-H01)
1/2BYE136	CVCS CNTR CHG PMP MOTOR HTR (1/2-1208-P6-003-H01)

Backup protection is provided by 1/2NBR43 for the following:

1/2NYR102	CTB CRDM CLG UNIT FAN MOT HTR (1/2-1509-B7-002-H01)
1/2NYR103	CTB CRDM CLG UNIT FAN MOT HTR (1/2-1509-B7-004-H01)
1/2NYR104	CTMT CAVITY CLG UNIT FAN MOT HTR (1/2-1511-B7-002-H01)
1/2NYR105	CTB REAC SUPP COOL UNIT MOT HTR (1/2-1512-B7-002-H01)
1/2NYR106	CTB REAC SUPP COOL UNIT MOT HTR (1/2-1512-B7-004-H01)

Backup protection is provided by 1/2NBS53 for the following:

1/2NYS102	CTB CRDM CLG UNIT FAN MOT HTR (1/2-1509-B7-001-H01)
1/2NYS103	CTB CRDM CLG UNIT FAN MOT HTR (1/2-1509-B7-003-H01)
1/2NYS104	CTB REAC SUPP CLG UNIT MOT HTR (1/2-1512-B7-001-H01)
1NYS105	CTB REAC SUPP CLG UNIT MOT HTR (1-1512-B7-003-H01)
1/2NYS116	CTB CAVITY CLG UNIT FAN MOT HTR (1/2-1511-B7-001-H01)

Backup protection is provided by 1/2ABD54 for the following:

1/2AYD103	RHR PMP RM CLR MOT HTR (1/2-1555-A7-007-H01)
1/2AYD131	SIS PMP RM CLR MOT HTR & CHG PMP RM CLR MOTOR HTR (1/2-1555-A7-013-H01) (1/2-1555-A7-015-H01)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment
	(SHEET 25 OF 30)
1/2AYD134	ELEC SWGR RM COOL MOTOR HTRS (1/2-1555-A7-001-H01) (1/2-1555-A7-009-H01)
1/2AYD136	ELEC SWGR RM COOL MOTOR HTR (1/2-1555-A7-003-H01)
Backup protection is provided by 1/2BBD56 for the following:	
1/2BYD103	RHR PUMP RM COOLER MOTOR HTR (1/2-1555-A7-008-H01)
1/2BYD129	CONT SPRAY RM COOL MTR HTR (1/2-1555-A7-010-H01)
1/2BYD132	CHG PMP RM COOL MTR HTRS (1/2-1555-A7-014-H01) (1/2-1555-A7-016-H01)
1/2BYD136	ELEC SWGR RM COOL MTR HTRS (1/2-1555-A7-002-H01, 1/2-1555-A7-004-H01)
Backup protection is provided by 1/2ABB02 for the following:	
1/2AYB107	MCC RM COOL MTR HTR (1/2-1555-A7-005-H01)
1/2AYB110	PIPING PEN FLTR MTR HTR (1/2-1561-N7-001-H02) TB AB ELECT TUNNEL
1/2AYB111	VENT FAN MOT HTR (1/2-1540-B7-005-H01)
1/2AYB114	CCW PMP RM COOL MTR HTR (1/2-1555-A7-011-H01)
1/2AYB115	SFP PMP RM COOL MTR HTR (1/2-1555-A7-017-H01)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment
	(SHEET 26 OF 30)
1/2AYB118	NSCW PUMP MTR HTR (1/2-1202-P4-008-H01)
1/2AYB119	NSCW CLG TWR FAN MTR HTR (1/2-1202-W4-001-H01)
1/2AYB120	NSCW CLG TWR FAN MTR HTR (1/2-1202-W4-001-H02)
1/2AYB121	NSCW CLG TWR FAN MOTOR HTR (1/2-1202-W4-001-H03)
1/2AYB122	NSCW CLG TWR FAN MTR HTR (1/2-1202-W4-001-H04)
1/2AYB136	NSCW TWR CABLE TUNNEL VENT FAN MOTOR HTR (1/2-1540-B7-003-H01)

Backup protection is provided by 1BBB45 for Unit 1, and 2BBB02 for Unit 2 for the following:

1/2BYB107	MCC RM COOLER MOTOR HTR (1/2-1555-A7-006-H01)
1/2BYB110	PIPING PEN FILTER MOTOR HTR (1/2-1561-N7-002-H02)
1/2BYB115	CCW PMP RM COOL MOTOR HTR (1/2-1555-A7-012-H01)
1/2BYB118	NSCW PMP MOTOR HTR (1/2-1202-P4-007-H01)
1/2BYB119	NSCW CLG TWR FAN MOTOR HTR (1/2-1202-W4-002-H01)
1/2BYB120	NSCW CLG TWR FAN MOTOR HTR (1/2-1202-W4-002-H02)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment
	(SHEET 27 OF 30)
1/2BYB121	NSCW CLG TWR FAN MOTOR HTR (1/2-1202-W4-002-H03)
1/2BYB122	NSCW CLG TWR FAN MOTOR HTR (1/2-1202-W4-002-H04)
1/2BYB124	SI PUMP MOTOR HTR (1/2-1204-P6-004-H01)
1/2BYB128	SFP PMP RM COOL MOTOR HTR (1/2-1555-A7-018-H01)
1/2BYB135	NSCW TOWER CABLE TUNNEL VENT FAN MOTOR HTR (1/2-1540-B7-004-H01)

Backup protection is provided by 1ABA29 for Unit 1 and 2ABA02 for Unit 2 for the following:

1AYA103	FHB PA FILTER EXH MOTOR HTR (A-1542-N7-001-H02
1/2AYA105	CB ESF CHILLER WTR PMP MOTOR HTR (1/2-1592-P7-001-H01)
1/AYA110	CB NORMAL A/C UNIT FAN MOTOR HTR (1-1539-A7-005-H01)
1/2AYA112	CB CR CHILLER RM VENT FAN MOTOR HTR (1/2-1531-B7-002-H01)
1/2AYA118	AUX CCW PMP MOTOR HTR (1/2-1217-P4-001-H01)
1/2AYA125	CCW PMP MOTOR HTR (1/2-1203-P4-005-H01)
1/2AYA127	CCW PMP MOTOR HTR (1/2-1203-P4-001-H01)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment

(SHEET 28 OF 30)

1/2AYA129	CCW PMP MOTOR HTR (1/2-1203-P4-003-H01)
1/2AYA131	NSCW PMP MOTOR HTR (1/2-1202-P4-001-H01)
1/2AYA133	NSCW PMP MOTOR HTR (1/2-1202-P4-003-H01)
1/2AYA135	NSCW PMP MOTOR HTR (1/2-1202-P4-005-H01)

Backup protection is provided by 1BBA29 for Unit 1 and 2BBA02 for Unit 2 for the following:

1/2BYA105	ESF CHILLED WTR PMP MOTOR HTR(1/2-1592-P7-002-H01)
1/2BYA110	CB AUX RELAY RM A/C MTR HTR (1/2-1539-A7-002-H01)
1BYA112	CB ELEC EQUIP RM ESF A/C MOTOR HTR (1-1539-A7-006-H01)
1/2BYA114	CB CR CHILLER RM VENT FAN MOTOR HTR (1/2-1531-B7-004-H01)
1/2BYA119	NSCW PMP MOTOR HTR (1/2-1202-P4-002-H01)
1/2BYA121	NSCW PUMP MOTOR HTR (1/2-1202-P4-004-H01)
1/2BYA123	NSCW PMP MOTOR HTR (1/2-1202-P4-006-H01)
1BYA125	AUX CCW PMP MOTOR HTR (1-1217-P4-002-H01)

1/2BYA126	CCW PMP MOTOR HTR (1/2-1203-P4-002-H01)
1/2BYA128	CCW PMP MOTOR HTR (1/2-1203-P4-004-H01)
1/2BYA130	CCW PMP MOTOR HTR (1/2-1203-P4-006-H01)
2BYA113	AUX CCW PUMP MOTOR HTR (2-1217-P4-002-H01)

Backup electrical isolation is provided by the following: (Primary isolation is provided by fuses in the monitor light box 24-V-ac circuits.)

1BYA127 2BYA117	MONITOR LIGHT BOX (TERMINATION CAB 20 1/2BCPT20)
1/2BYA129	MONITOR LIGHT BOX (TERMINATION CAB 08 1/2BCPT08)
1/2BYA131	MONITOR LIGHT BOX (TERMINATION CAB 06 1/2BCPT06)
1/2BYA133	MONITOR LIGHT BOX (TERMINATION CAB 14 1/2BCPT14)
1/2CY1A06	MONITOR LIGHT BOX (TERMINATION CAB 19 1/2CCPT19)
1/2BYA135	MONITOR LIGHT BOX (TERMINATION CAB 10 1/2BCPT10)

Backup protection is provided by 1/2ABF29 for the following:

1/2AYF111	DGB VENT FAN MOTOR HTR (1/2-1566-B7-001-H01)

TABLE 13.8.1-1

Protective Device Number	Powered Equipment
(SHEET 30 OF 30)	
1/2AYF114	DGB VENT FAN MOTOR HTR (1/2-1566-B7-003-H01)
1/2AYF115	AUX FW PMP HSE FAN MTR HTR (1/2-1593-B7-001-H01)
1/2AYF117	DIESEL TUNNEL 1T4A VENT FAN MOTOR HTR (1/2-1540-B7-001-H01)
Backup protection is provided by 1/2BBF29 for the following:	
1/2BYF109	AUX FW PMP MOTOR HTR (1/2-1302-P4-002-H01)
1/2BYF113	DGB VENT FAN MOTOR HTR (1/2-1566-B7-002-H01)
1/2BYF114	DGB VENT FAN MOTOR HTR (1/2-1566-B7-004-H01)
1/2BYF115	AUX FW PP HSE FAN MTR HTR (1/2-1593-B7-002-H01)
1/2BYF117	DIESEL TUNNEL 1T4B VENT FAN MTR HTR (1/2-1540-B7-002-H01)
1/2NYR09 1/2NCQMDFB - CB3 (LOCATED IN FLUX MAPPING CONSOLE 1/2-1612-Q5-MDF)	INCORE RACK NO. 2 DEHUMIDIFIER
1/2NYS09 1/2NCQMDFB - CB1 (LOCATED IN FLUX MAPPING CONSOLE 1/2-1612-Q5-MDF)	INCORE RACK NO. 2 DEHUMIDIFIER

a. Protective device and powered equipment designations have been changed to begin with ½ to denote Units 1 and 2 applicability.

b. Any three of four protective relays (three-phase-overcurrent and one ground- overcurrent) operable satisfies this requirement.

13.8 Electrical Power Systems

TR 13.8.2 Safety-Related Motor-Operated Valves Thermal Overload Protection and Bypass Devices

TR 13.8.2 The thermal overload protection bypass devices of each safety-related motor-operated valve in Table 13.8.2-1 shall be FUNCTIONAL.

APPLICABILITY: Whenever the motor-operated valve is required to be OPERABLE or FUNCTIONAL.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more safety-related motor-operated valve(s) with nonfunctional thermal overload protection bypass device(s).	A.1 Declare the affected valve(s) inoperable or nonfunctional as appropriate and enter the appropriate Technical Specification Condition or Technical Requirement Condition and follow the applicable Required Actions for the affected valve(s).	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.8.2.1	Verify the required thermal overload protection bypass devices FUNCTIONAL.	Following maintenance on the valve motor starter AND Following periodic testing during which the thermal overload device was temporarily placed in force AND 18 months

Table 13.8.2-1 (Page 1 of 4)

Safety-Related Motor-Operated Valves Thermal Overload Protection Bypass Devices

Valve Number	Function
1/2LV-0112C, B	VCT Discharge Header
1/2LV-0112E, D	SIS RWST Discharge to Chg/SI Pump Suction
1/2FV-0610	RHR Miniflow
1/2FV-0611	RHR Miniflow
1/2HV-1668A	Nuclear Service Clg. Twr. A Return
1/2HV-1668B	Nuclear Service Clg. Twr. A Fans Bypass
1/2HV-1669A	Nuclear Service Clg. Twr. B Return
1/2HV-1669B	Nuclear Service Clg. Twr. B Fans Bypass
1/2HV-1806	CTMT Air Cool A7001/A7002 CW Inlet
1/2HV-1807	CTMT Air Cool A7003/A7004 CW Inlet
1/2HV-1808	CTMT Air Cool A7005/A7006 CW Inlet
1/2HV-1809	CTMT Air Cool A7007/A7008 CW Inlet
1/2HV-1822	CTMT Air Cool A7001/A7002 CW Outlet
1/2HV-1823	CTMT Air Cool A7003/A7004 CW Outlet
1/2HV-1830	CTMT Air Clr A7005/A7006 CW Outlet
1/2HV-1831	CTMT Air Clr A7007/A7008 CW Outlet
1/2HV-1974	Aux Comp CW Trn B Return Iso
1/2HV-1975	Aux Comp CW Trn A Return Iso
1/2HV-1978	Aux Comp CW Trn B Supply Iso
1/2HV-1979	Aux Comp CW Trn A Supply Iso
1/2HV-2041	Reactor Coolant Pumps Thermal Barrier ACCWS Outlet Header
1/2HV-2134	Reactor Cavity Clg Coil E7001 Inlet Iso
1/2HV-2135	Reactor Cavity Clg Coil E7002 Inlet Iso
1/2HV-2138	Reactor Cavity Clg Coil E7001 Outlet Iso
1/2HV-2139	Reactor Cavity Clg Coil E7002 Outlet Iso
1/2PV-2550A	Piping Penetration Room to Atmosphere
1/2PV-2551A	Piping Penetration Room to Atmosphere
1/2HV-2582A	CTB Cooling Unit A7001
1/2HV-2582B	CTB Cooling Unit A7002
1/2HV-2583A	CTB Cooling Unit A7003
1/2HV-2583B	CTB Cooling Unit A7004
1/2HV-2584A	CTB Cooling Unit A7005
1/2HV-2584B	CTB Cooling Unit A7006
1/2HV-2585A	CTB Cooling Unit A7007
1/2HV-2585B	CTB Cooling Unit A7008
1/2HV-2624A	CTB Post LOCA Purge Exhaust Iso
1/2HV-2624B	CTB Post LOCA Purge Exhaust Iso
1/2HV-2626A	CTMT Bldg Norm Purge Supply Iso
1/2HV-2627A	CTB Norm Purge Supply Iso

(continued)

Table 13.8.2-1 (Page 2 of 4)

Safety-Related Motor-Operated Valves Thermal Overload Protection Bypass Devices

Valve Number	Function
1/2HV-2628A	CTMT Bldg Norm Purge Exhaust Iso
1/2HV-2629A	CTB Norm Purge Exhaust Iso
1/2HV-3009	TDAFP Steam Supply Isolation
1/2HV-3019	TDAFP Steam Supply Isolation
1/2HV-3548	RCS Hot Leg Sample
1/2HV-5106	Aux FDW Pump Turbine
1/2HV-5113	Conds Stor TK V4002 to Pump P4001
1/2HV-5118	Conds Stor TK V4002 to Pump P4002
1/2HV-5119	Conds Stor TK V4002 to Pump P4003
1/2HV-5120	Aux FDW Pump P4001 Discharge Trn C
1/2HV-5122	Aux FDW Pump P4001 Discharge Trn C
1/2HV-5125	Aux FDW Pump P4001 Discharge Trn C
1/2HV-5127	Aux FDW Pump P4001 Discharge Trn C
1/2HV-5132	Aux FDW Pump P4002 Discharge Trn B
1/2HV-5134	Aux FDW Pump P4002 Discharge Trn B
1/2HV-5137	Aux FDW Pump P4003 Discharge Trn A
1/2HV-5139	Aux FDW Pump P4003 Discharge Trn A
1/2FV-5154	Aux FDW Pump P4002 Miniflow
1/2FV-5155	Aux FDW Pump P4003 Miniflow
1/2HV-8000A, B	PORV Blockline
1/2HV-8100	No 1 Seal Leakoff
1/2HV-8103A, B, C, DRCP	No 1 Seal from Chg
1/2HV-8104	CVCS Boric Acid Filter to Charging Pump Suction
1/2HV-8105	Chg Pump to RCS Isolation
1/2HV-8106	Chg Pump to RCS Isolation
1/2HV-8110	Chg Pump Miniflow
1/2HV-8111A, B	Chg Pump Miniflow
1/2HV-8112	No 1 Seal Leakoff
1/2HV-8116	Charging Pump Discharge Boron Injection
1/2HV-8146	Reg. Hx Tube Outlet to RCS Normal Chg
1/2HV-8147	Reg. Hx Tube Outlet to RCS Alternate Chg
1/2HV-8438	Charging Pump B Discharge
1/2HV-8471A	Alt Charging Pump A Suction
1/2HV-8471B	Alt Charging Pump B Suction
1/2HV-8485A	Charging Pump A Discharge
1/2HV-8485B	Charging Pump B Discharge
1/2HV-8508A, B	Charging Pump Miniflow Iso to RWST
1/2HV-8509A, B	Charging Pump Miniflow Iso to RWST
1/2HV-8701A, B	RHR Suction from RCS Hot Legs 1, 4

(continued)

Table 13.8.2-1 (Page 3 of 4)

Safety-Related Motor-Operated Valves Thermal Overload Protection Bypass Devices

Valve Number	Function
1/2HV-8702A, B	RHR Suction from RCS Hot Legs 1, 4
1/2HV-8716A, B	RHR Cross Connect
1/2HV-8801A, B	BIT Discharge
1/2HV-8802A, B	SI Pump Discharge Header
1/2HV-8804A	RHR Hx No. 1 Outlet to Charge Pump
1/2HV-8804B	RHR Hx No. 2 Outlet to SI Pumps
1/2HV-8806	RWST Discharge Header to SI Pumps
1/2HV-8807A, B	HHSI Suction to Chg/SI Suction
1/2HV-8808A, B, C, D	Accumulator Discharge
1/2HV-8809A, B	RHR Discharge Header
1/2HV-8811A, B	Containment Emergency Sump Isolation
1/2HV-8812A, B	RHR Suction from RWST
1/2HV-8813	SI Pump Miniflow
1/2HV-8814	SI Pump Miniflow
1/2HV-8821A, B	SI Pump Crosschannel
1/2HV-8835	SI Pump Discharge to Cold Legs
1/2HV-8840	RHR Pump Discharge to Hot Legs
1/2HV-8920	Safety-Injection Pump Miniflow Isolation
1/2HV-8923A, B	SI Pump Suction Isolation
1/2HV-8924	HHSI Suction to Chg/SI Suction
1/2HV-9001A, B	Spray Pump Discharge Header
1/2HV-9002A, B	Spray Pump Containment Emergency Sump Isolation
1/2HV-9003A, B	Spray Pump Containment Emergency Sump Isolation
1/2HV-9017A, B	Spray Pump Suction from RWST
1/2HV-9380A	CTMT ATM Unit 1 SVCE Air
1/2HV-9380B	CTMT ATM Unit 1 SVCE Air
1/2HV-11600	NSCW Pump Discharge Isolation
1/2HV-11605	NSCW Pump Discharge Isolation
1/2HV-11606	NSCW Pump Discharge Isolation
1/2HV-11607	NSCW Pump Discharge Isolation
1/2HV-11612	NSCW Pump Discharge Isolation
1/2HV-11613	NSCW Pump Discharge Isolation
1/2HV-12005	Trn B Aux FDW Pump Rm Inlet Damper
1/2HV-12006	Trn A Aux FDW Pump Rm Inlet Damper
1/2HV-12050	DGB Exh Fan B7001 Disch Damper (Trn A)
1/2HV-12051	DGB Exh Fan B7003 Disch Damper (Trn A)
1/2HV-12052	DGB Exh Fan B7005 Disch Damper (Trn A)
1/2HV-12053	DGB Exh Fan B7002 Disch Damper (Trn B)
1/2HV-12054	DGB Exh Fan B7004 Disch Damper (Trn B)

(continued)

Table 13.8.2-1 (Page 4 of 4)

Safety-Related Motor-Operated Valves Thermal Overload Protection Bypass Devices

Valve Number	Function
1/2HV-12055	DGB Exh Fan B7006 Disch Damper (Trn B)
1/2HV-12114	CR Outside Air Intake Iso
1/2HV-12115	CR Outside Air Intake Iso
1/2HV-12118	CB CR Filter Units N7001 Inlets
1/2HV-12119	CB CR Filter Units N7002 Inlets
1/2HV-12128	CB CR Filter Units N7001 Outlets
1/2HV-12129	CB CR Filter Units N7002 Outlets
1/2HV-12130	CB CR Return Air Fans B7005 Inlets
1/2HV-12131	CB CR Return Air Fans B7006 Inlets
1/2HV-12727	CB SR Battery Rm Exh B7002 Damper
1/2HV-12742	CB SF Battery Rm Exh B7001 Damper
1/2HV-12748	CB SF Battery Rm Exh B7003 Damper
1/2HV-12749	CB SF Battery Rm Exh B7004 Damper
1/2PV-15129	TDAFP Trip and Throttle Valve
1/2HV-19051	Thermal Barrier Cooling Wtr RCP 001
1/2HV-19053	Thermal Barrier Cooling Wtr RCP 002
1/2HV-19055	Thermal Barrier Cooling Wtr RCP 003
1/2HV-19057	Thermal Barrier Cooling Wtr RCP 004

13.8 Electrical Power Systems

TR 13.8.3 Emergency Diesel Generator (DG) Test Schedule

Emergency Diesel Generator (DG) Test Schedule deleted

13.9 Refueling Operations

TR 13.9.1 Decay Time

TR 13.9.1 The Reactor shall be subcritical for ≥ 90 hours.

APPLICABILITY: During movement of irradiated fuel in the reactor vessel.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Reactor subcritical for < 90 hours.	A.1 Suspend all operations involving movement of irradiated fuel in the reactor vessel.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.9.1.1	Verify the reactor has been subcritical for ≥ 90 hours by confirming the date and time of subcriticality.	Prior to movement of irradiated fuel in the reactor vessel.

13.9 Refueling Operations

TR 13.9.2 Communications

TR 13.9.2 Direct Communications shall be maintained between the control room and personnel at the refueling station.

APPLICABILITY: During CORE ALTERATIONS

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Direct communications between control room and refueling station not maintained.	A.1 Suspend all CORE ALTERATIONS.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE	FREQUENCY
TRS 13.9.2.1 Verify direct communication exists between control room and refueling station.	Once within 1 hour prior to start of CORE ALTERATIONS AND 12 hours thereafter

13.9 Refueling Operations

TR 13.9.3 Refueling Machine

TR 13.9.3 The refueling machine shall be used for movement of fuel assemblies and/or rod control cluster assemblies or thimble plug assemblies, and the auxiliary hoist shall be used for latching and unlatching, or handling of control rod drive shafts. The refueling machine and auxiliary hoist shall be FUNCTIONAL with:

a. The refueling machine having:

1) A design rated load of 3028 pounds and

2) An overload cutoff limit less than or equal to the design rated load.

b. The auxiliary hoist having:

1) A minimum capacity of 3000 pounds, and

2) A load indicator which shall be used to administratively prevent lifting loads in excess of 1000 pounds.

APPLICABILITY: During movement of fuel assemblies, rod control cluster assemblies, thimble plug assemblies, or control rod drive shafts within the reactor vessel.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Refueling machine nonfunctional.	A.1 Suspend use of refueling machine from operations involving the movement of fuel assemblies, rod control cluster assemblies, thimble plug assemblies, or control rod drive shafts within the reactor vessel.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Auxiliary hoist nonfunctional.	B.1 Suspend use of auxiliary hoist from operations involving the movement of fuel assemblies, rod control cluster assemblies, thimble plug assemblies, or control rod drive shafts within the reactor vessel.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE	FREQUENCY
TRS 13.9.3.1 ---------- NOTE ---------- Only required to be performed once per refueling (or other event in which the core is removed or replaced). ---------- Verify refueling machine FUNCTIONALITY by: a. Performing a load test of $\geq$ 125% of the design rated load, and b. Demonstrating operation of the automatic load cutoff prior to the load exceeding the design rated load.	Once within 100 hours prior to the start of movement of fuel assemblies, rod control cluster assemblies, thimble plug assemblies, or control rod drive shafts within the reactor vessel

(continued)

TECHNICAL REQUIREMENT SURVEILLANCES (continued)

TRS 13.9.3.2	---------- NOTE ---------- Only required to be performed once per refueling (or other event in which the core is removed or replaced). ---------- Verify auxiliary hoist FUNCTIONAL by performance of a load test ≥ 1250 pounds.	Once within 100 hours prior to the start of movement of fuel assemblies, rod control cluster assemblies, thimble plug assemblies, or control rod drive shafts within the reactor vessel.

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13.9 Refueling Operations

TR 13.9.4 Crane Travel - Spent Fuel Storage Areas

TR 13.9.4 Loads > 2300 pounds shall be prohibited from travel over fuel assemblies in the storage pool.

APPLICABILITY: With fuel assemblies in the storage pool.

----------NOTES----------
TR 13.0.3 is not applicable.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Technical Requirement not met.	A.1 Place the crane load in a safe condition.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.9.4.1	Verify crane interlocks and physical stops which prevent crane travel with loads > 2300 pounds over fuel assemblies are FUNCTIONAL.	Once within 7 days prior to crane use AND 7 days thereafter during crane operation

13.9 Refueling Operations

TR 13.9.5 Fuel Handling Building Post Accident Ventilation System (common system)

TR 13.9.5 Two independent Fuel Handling Building Post Accident Ventilation Systems shall be FUNCTIONAL.

APPLICABILITY: Whenever irradiated fuel is in either storage pool.

----------NOTE----------
TR 13.0.3 is not applicable.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Fuel Handling Building Post Accident Ventilation System nonfunctional.	A.1 Place the remaining Fuel Handling Building Post Accident Ventilation System in operation discharging through at least one train of HEPA filters and charcoal adsorbers. OR	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.2 Suspend all operations involving movement of irradiated fuel in the fuel handling building, movement of new fuel over irradiated fuel in the fuel handling building, or crane operation with loads over irradiated fuel in the fuel handling building until Required Action A.1 above is met.	7 days
B. Two Fuel Handling Building Post Accident Ventilation Systems nonfunctional.	B.1 Suspend all operations involving movement of irradiated fuel in the fuel handling building, movement of new fuel over irradiated fuel in the fuel handling building, or crane operation with loads over irradiated fuel in the fuel handling building until Required Action A.1 above is met.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.9.5.1	Verify system operation by initiating each system from the control room with flow through the HEPA filters and charcoal adsorbers and operating each system for ≥ 15 minutes with the heater circuit energized.	92 days

(continued)

TECHNICAL REQUIREMENT SURVEILLANCES (continued)

SURVEILLANCE		FREQUENCY
TRS 13.9.5.2	Verify the cleanup system satisfies the in-place testing acceptance criteria of ≥ 99.0% filter retention while operating the system at a flow rate of 5000 cfm ± 10%, (FI-12551, FI-12552) and performing the following tests: a. A visual inspection of the system shall be made before each DOP test or activated carbon adsorber section leak test in accordance with Section 5 of ANSI N510-1980. b. An in-place DOP test for the HEPA filters shall be performed in accordance with Section 10 of ANSI N510-1980. c. A charcoal adsorber section leak test with a gaseous halogenated hydrocarbon refrigerant shall be performed in accordance with Section 12 of ANSI N510-1980.	18 months AND After any structural maintenance on the HEPA filter or charcoal adsorber housings AND Following painting, fire, or chemical release in any ventilation zone communicating with the system

(continued)

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TECHNICAL REQUIREMENT SURVEILLANCES (continued)

SURVEILLANCE		FREQUENCY
TRS 13.9.5.3	Verify within 31 days of removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Section 13 of ANSI N510, meets the laboratory testing criteria of ≥ 90.0% when tested with methyl iodide at 30 °C and 95% relative humidity in accordance with ASTM D3803-89.	18 months AND After any structural maintenance on the HEPA filter or charcoal adsorber housings AND Following painting, fire, or chemical release in any ventilation zone communicating with the system
TRS 13.9.5.4	Verify system flow rate of 5000 cfm ± 10% during system operation when tested in accordance with Section 8 of ANSI N510-1980.	18 months AND After any structural maintenance on the HEPA filter or charcoal adsorber housings AND Following painting, fire, or chemical release in any ventilation zone communicating with the system

(continued)

TECHNICAL REQUIREMENT SURVEILLANCES (continued)

SURVEILLANCE		FREQUENCY
TRS 13.9.5.5	Verify, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Section 13 of ANSI N510-1980 meets the laboratory testing criteria of ≥ 90.0% when tested with methyl iodide at 30 °C and 95% relative humidity in accordance with ASTM D3803-89.	After every 720 hours of charcoal adsorber operation
TRS 13.9.5.6	Verify the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches water gauge while operating the system at a flow rate of 5000 cfm ± 10%.	18 months
TRS 13.9.5.7	Verify that on a high radiation test signal, the system automatically starts (unless already operating) and directs its exhaust flow through the HEPA filters and charcoal adsorber banks.	18 months
TRS 13.9.5.8	Verify the system maintains the spent fuel storage pool area at a slightly negative pressure relative to the outside atmosphere during system operation.	18 months
TRS 13.9.5.9	Verify the heaters dissipate ≥ 16 kW when tested in accordance with Section 14 of ANSI N510-1980.	18 months
TRS 13.9.5.10	Verify the HEPA filter banks remove ≥ 99% of the DOP when tested in-place in accordance with Section 10 of ANSI N510-1980 while operating the system at a flow rate of 5000 cfm ± 10%.	After each complete or partial replacement of a HEPA filter bank
TRS 13.9.5.11	Verify the charcoal absorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with Section 12 of ANSI N510-1980 while operating the system at a flow rate of 5000 cfm ± 10%.	After each complete or partial replacement of a charcoal adsorber bank

13.9 Refueling Operations

TR 13.9.6 Source Range Monitor Audible Indication

TR 13.9.6 At least one source range monitor shall provide audible indication in the containment and control room.

APPLICABILITY: MODE 6

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required source range monitor audible indication nonfunctional or not operating.	A.1 Initiate a Condition Report. AND A.2 Continue action to restore source range monitor audible indication.	Immediately Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.9.6.1	Perform CHANNEL CHECK	12 hours
TRS 13.9.6.2	---------- NOTE ---------- Neutron detectors are excluded from CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION	 18 months

13.12 Explosive Gas and Storage Tank Radioactivity Monitoring (EGSTRAM) Program

TR 13.12.1 Explosive Gas Monitoring Instrumentation

TR 13.12.1 The following explosive gas monitoring instrumentation shall be FUNCTIONAL with:

a. One inlet hydrogen monitor per recombiner,

b. Two oxygen monitors per recombiner, and

c. Alarm/trip setpoints are set to ensure that the limits of TR 13.12.2 are not exceeded.

APPLICABILITY: During gaseous waste processing system operation.

ACTIONS

----------NOTE----------
TR 13.0.3 is not applicable.

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	Inlet oxygen monitor for one or more recombiners nonfunctional.	A.1	Verify inlet hydrogen monitor(s) FUNCTIONAL.	Once per 24 hours.
B.	Outlet oxygen monitor for one or more recombiners nonfunctional.	B.1	Analyze grab samples.	Once per 24 hours.
		AND		
		B.2	Verify oxygen concentration remains less than one percent.	Once per 24 hours..
C.	Required Actions and associated Completion Times of Conditions A or B not met.	C.1	Suspend operation of gaseous waste processing system.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required hydrogen monitor for one or more recombiners nonfunctional. OR Both oxygen channels for one or more recombiners nonfunctional. OR Both the inlet oxygen monitor and inlet hydrogen monitor for one or more recombiners nonfunctional.	D.1 Suspend oxygen supply to the recombiner(s). AND D.2 Analyze grab samples during addition of waste gas. AND D.3 Verify oxygen concentration remains less than 1 percent.	Immediately Once per 4 hours during degassing operations. OR Once per 24 hours during other operations. Once per 4 hours during degassing operations. OR Once per 24 hours during other operations.
E. Required Actions and associated Completion Times of Condition D not met.	E.1 Suspend addition of waste gas to the system.	Immediately.
F. Any required oxygen or hydrogen monitor(s) for one or more recombiners nonfunctional for more than 30 days.	F.1 Initiate a Condition Report. AND F.2 Continue action to restore the required nonfunctional monitor(s) to FUNCTIONAL status.	Immediately Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE REQUIREMENTS		FREQUENCY
TRS 13.12.1.1	Perform CHANNEL CHECK	24 hours
TRS 13.12.1.2	Perform COT	92 days
TRS 13.12.1.3	----------NOTES---------- 1. For the hydrogen monitors, the CHANNEL CALIBRATION shall include the use of standard gas samples in accordance with the manufacturer's recommendations. In addition, a standard gas sample of nominal four volume percent hydrogen, balance nitrogen shall be used in the calibration to check linearity of the hydrogen analyzer. 2. For the oxygen monitors, the CHANNEL CALIBRATION shall include the use of standard gas samples in accordance with the manufacturer's recommendations. In addition, a standard gas sample of nominal four volume percent oxygen, balance nitrogen shall be used in the calibration to check linearity of the oxygen analyzer. ---------- Perform CHANNEL CALIBRATION	92 days

13.12 Explosive Gas and Storage Tank Radioactivity Monitoring (EGSTRAM) Program

TR 13.12.2 Explosive Gas Mixture

TR 13.12.2 The concentration of oxygen in the gaseous waste processing system shall be limited to less than or equal to 2% by volume whenever the hydrogen concentration exceeds 4% by volume.

APPLICABILITY: At all times.

ACTIONS

----------NOTE----------
TR 13.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Concentration of oxygen in the gaseous waste processing system > 2% by volume but ≤ 4% by volume. AND Hydrogen concentration > 4% by volume.	A.1 Reduce oxygen concentration to within limit.	48 hours

(continued)

ACTIONS (continued)

CONDITION		REQUIRED ACTION		COMPLETION TIME
B.	Concentration of oxygen in the gaseous waste processing system > 4% by volume. AND Hydrogen concentration > 4% by volume.	B.1	Suspend oxygen addition to the gaseous waste processing system. AND	Immediately
		B.2	Suspend all additions of waste gases to the gaseous waste processing system. AND	Immediately
		B.3	Reduce oxygen concentration to ≤ 4% by volume.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.12.2.1	Monitor hydrogen and oxygen concentrations in the gaseous waste processing system.	Continuously by use of the hydrogen and oxygen montors required FUNCTIONAL by TR 13.12.1.

13.12 Explosive Gas and Storage Tank Radioactivity Monitoring (EGSTRAM) Program

TR 13.12.3 Gas Decay Tanks

TR 13.12.3 The quantity of radioactivity contained in each gas decay tank shall be limited to $\leq 2.0 \times 10^5$ curies of noble gases (considered as Xe-133 equivalent).

APPLICABILITY: At all times.

ACTIONS

----------NOTE----------
TR 13.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A.1 Quantity of radioactive material in any gas decay tank exceeding limit.	A.1 Suspend all additions of radioactive material to the tank.	Immediately
	AND	
	A.2 Reduce the tank contents to within the limit.	48 hours
	AND	
	A.3 Describe the events leading to this condition in the next Annual Radioactive Effluent Release Report	In accordance with TS 5.6.3

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.12.3.1	Verify quantity of radioactive material contained in each gas decay tank to be less than the limit.	Once per 24 hours when radioactive material has been added to the tanks during the previous 24 hours.

13.12 Explosive Gas and Storage Tank Radioactivity Monitoring (EGSTRAM) Program

13.12.4 Liquid Holdup Tanks

13.12.4 The quantity of radioactive material contained in each outside temporary tank shall be limited to ≤ 10 curies, excluding tritium and dissolved or entrained noble gases.

APPLICABILITY: At all times.

ACTIONS

----------NOTE----------
TR 13.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Quantity of radioactive material in any outside temporary tank in excess of the limit.	A.1 Suspend addition of radioactive material to the tank. AND	Immediately
	A.2 Reduce quantity of radioactive material to within limit. AND	48 hours
	A.3 Describe the events leading to this condition in the next Radioactive Effluent Release Report pursuant to Technical Specification 5.6.3.	In accordance with Technical Specification 5.6.3.

TECHNICAL REQUIREMENT SURVEILLANCES

	SURVEILLANCE	FREQUENCY
TRS 13.12.4.1	Verify quantity of radioactive material in each outdoor temporary tank by analysing a representative sample of the tank contents or each batch to be added to the tank.	7 days when radioactive material is being added to a tank. OR Prior to addition of a batch of material to a tank.

13.13 Emergency Response Facilities

TR 13.13.1 Emergency Response Facilities

TR 13.13.1 The Technical Support Center, the Operations Support Center, and the Emergency Operations Facility shall be FUNCTIONAL.

---NOTE---
If an emergency response facility (ERF) can be returned to service within 1 hour, the ERF is FUNCTIONAL and the condition statement may be exited.

APPLICABILITY: At all times.

ACTIONS

---NOTES---
1. Separate condition entry is allowed for each facility.
2. TR 13.0.3 is not applicable.
3. If an ERF will be removed from service for greater than 1 hour, contact Emergency Preparedness to ensure adequate compensatory measures are in place. Entry into Condition A is required when the affected ERF becomes nonfunctional.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more emergency facilities nonfunctional.	A.1 Restore emergency facilities to FUNCTIONAL status. AND ----------NOTE---------- Alternate facilities are applicable only to OSC and TSC. ---------- A.2 Verify availability of alternate facilities.	1 hour Immediately
B. Required Action A and associated Completion Time not met.	B.1 Initiate compensatory actions, as necessary, to provide emergency response functions.	Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	AND		
	B.2	Proceed with actions to return ERFs to FUNCTIONAL status with a high priority.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCES

SURVEILLANCE		FREQUENCY
TRS 13.13.1.1	Perform testing to ensure FUNCTIONALITY of an ERF.	In accordance with applicable procedures.
TRS 13.13.1.2	Perform inventory to ensure FUNCTIONALITY of an ERF.	In accordance with applicable procedures.

B TR 13.13.1 Emergency Response Facilities

BASES

A note modifies the technical requirements when it is determined that the primary ERF can at any time during its out-of-service period be returned to service within 1 hour. In that case, the ERF is considered FUNCTIONAL and the condition statement may be exited. Similarly, if the ERF is to be deliberately taken out of service but will be capable of being returned to service at any time within 1 hour, the ERF is considered FUNCTIONAL and the condition statement is not required to be entered.

APPLICABILITY

This TR is applicable to the Technical Support Center (TSC), the Operations Support Center (OSC), and the Emergency Operations Facility (EOF).

Emergency events could occur during all modes of operation; consequently, the emergency response facilities (ERFs) shall be FUNCTIONAL at all times.

CONDITIONS

Condition A

The 1 hour out-of-service time is acceptable since alternate facilities are available to provide the emergency response functions during the time the primary ERF is nonfunctional. If the alternate facilities are not available, then Condition B is immediately entered.

A.2 is modified by a NOTE which states: Alternate facilities are applicable only to OSC & TSC. This action does not apply to the EOF since it does not have an alternate facility.

Condition B

If the alternate facilities for the TSC and OSC are available, then no compensatory actions may be needed, provided the necessary compensatory actions are encompassed in the procedures for the alternate facilities. If the alternate facilities are not available, then compensatory actions must immediately be put in place.

Notification to the NRC may be required per procedure NMP-AD-031 if the ERF is discovered out of service and is expected to remain out of service for greater than 1 hour, or is taken out of service and remains out of service for longer than 1 hour.

As indicated on Note 3 of the ACTIONS section, if the ERF will deliberately be taken out of service for a period longer than 1 hour, Emergency Preparedness will be contacted. If Emergency Preparedness determines a 50.54(g) screening or evaluation is required, the screening/evaluation will determine if the effectiveness of the emergency plan is decreased. If the effectiveness of the emergency plan is decreased, then the evaluation must be completed and submitted to NRC Headquarters (HQ) for prior approval, and that approval must be received prior to the ERF being taken out of service.

(continued)

BASES (continued)

Admittedly, the term “high priority” is subjective. Consequently, the following clarification is provided: In the context of this TR, “high priority” is taken to mean that returning the primary ERF to FUNCTIONAL status will be the overriding objective. Priority is not given to, for example, staying within budgetary or scheduling constraints.

FUNCTIONALITY REQUIREMENTS

TSC

The following are required for FUNCTIONALITY of the TSC:

- The ventilation system for filtration and radiological control.
- Offsite dose projection capability.
- Communication capability between control room, TSC, OSC, EOF, Field Monitoring Teams and offsite agencies.
- Event assessment capability.
- Capability to automatically or manually energize the TSC from the security diesel generator within a time no greater than allowed by TR 13.13.1 CONDITION A.

If any of the following are out of service, the impact of their loss shall be evaluated in determining the ability of the TSC to perform its required function:

- Temperature Control System.
- Communication devices capable of performing the indicated function as provided below:

Communication Function	VEGP
TSC Management with EOF	Commercial Telephone Lines TSC/EOF/OSC Conference Bridge Radio
Resource Management	Commercial Telephone Lines (Offsite Premises Extension) OPX
Radiological Monitoring	Southern LINC Plant Radio System
The Emergency Notification Network (ENN) and Offsite Protective Action Recommendations (PAR)	ENN Commercial Telephone Lines

- The Emergency Notification System (ENS) for NRC notifications.
- Availability of plant procedures and plant drawings. For example:

(continued)

BASES (continued)

Technical Specifications, EOPs, plant operating procedures, emergency implementing procedures, system piping and instrumentation drawings, and elementary diagrams.

- Emergency supplies and equipment as delineated in the SNC Standard Emergency Plan, section H
- Technical data displays for event assessment.

OSC

The following is required for FUNCTIONALITY of the OSC:

- Communication capability with the TSC and control room.

If any of the following are out of service, the impact of their loss shall be evaluated in determining the ability of the OSC to perform its required function:

- Emergency equipment supplies as delineated in the SNC Standard Emergency Plan, section H.
- Communication devices capable of performing the indicated function as provided below:

Communication Function	VEGP
OSC Management with TSC	Commercial Telephone Lines TSC/EOF/OSC Conference Bridge Radio
Resource Management	Commercial Telephone Lines OPX
Radiological Monitoring	Southern LINC Plant Radio System

EOF

The following are required for FUNCTIONALITY of the EOF:

- Offsite dose projection capability.
- Communication capability between control room, TSC, OSC, EOF and offsite agencies.

If any of the following are out of service, the impact of their loss shall be evaluated in determining the ability of the EOF to perform its required function:

- Technical data displays.
- Availability of procedural information for EOF positions.
- Communication devices capable of performing the indicated function as provided below:

(continued)

BASES (continued)

Communication Function	VEGP
TSC Management with EOF	Commercial Telephone Lines TSC/EOF/OSC Conference Bridge Radio
Resource Management	Commercial Telephone Lines OPX
Radiological Monitoring	Southern LINC Plant Radio System
Offsite (PARs)	ENN Commercial Telephone

TECHNICAL REQUIREMENT SURVEILLANCES

Procedure 28645-C, Technical Support Center HVAC System Test A-1563-N7-001 and A-1563-N7-002, requires FUNCTIONAL testing of the TSC ventilation and filtration system. A suitable environment must be maintained in the TSC for personnel occupancy and equipment operation during radiological events. To accomplish this, the TSC ventilation and filtration system provides an adequate supply of filtered, conditioned fresh air during accident conditions, as well as minimizing airborne radioactivity in the TSC during and after an accident. FUNCTIONAL testing of the ventilation system is therefore performed to ensure the TSC remains habitable.

Procedure 91702-C, Emergency Equipment and Supplies, requires that inventories be performed of equipment in the TSC once per calendar quarter. Procedure 91705-C, Inventory and Testing of Emergency Preparedness Material/Equipment which are not Part of the Emergency Kits, requires that inventories be performed in the TSC each half of a calendar year. This TRS also ensures the availability of emergency equipment supplies that are normally kept in the OSC. This surveillance ensures that the ERFs are maintained in a state of readiness with respect to the equipment and items necessary for emergency response. If some items are not in place, they shall be immediately replaced. However, if certain items cannot be replaced, Emergency Preparedness personnel shall evaluate their loss with respect to the FUNCTIONALITY of the respective ERF.

(continued)

BASES (continued)

Communication equipment capable of performing the indicated functions provided below shall be available. Availability of any combination of equipment to perform the desired function is acceptable to maintain ERF FUNCTIONALITY for communications.

Communication Function	VEGP
TSC Management with EOF and EOF Management with TSC	Commercial Telephone Lines TSC/EOF/OSC Conference Bridge Radio
Resource Management	Commercial Telephone Lines OPX
Radiological Monitoring	Southern LINC Plant Radio System
Offsite (PARs)	ENN Commercial Telephone

For onsite ERFs, Procedure 91204-C requires FUNCTIONAL testing of the ENN and ENS offsite notification systems every calendar month. The multiline ERF phones require FUNCTIONAL testing each calendar quarter and provide communications within the plant during an emergency to facilitate event diagnosis, the assignment and dispatch of emergency personnel, and information updates of plant conditions. The ENN and ENS systems are the primary methods of notifying State and local authorities and the NRC and, as such, these systems should remain FUNCTIONAL. ENN and ENS equipment are available in both the TSC and EOF. Testing of EOF communication equipment is performed quarterly in accordance with NMP-EP-300.

A single nonfunctional communications system will not necessarily indicate a nonfunctional ERF. Emergency Preparedness shall evaluate each case in determining the FUNCTIONALITY of the particular ERF.

Procedure 91204-C requires FUNCTIONAL testing of offsite dose projection equipment once per calendar month. Initial offsite dose projections are often made from the TSC. Followup projections are usually made from the EOF. Consequently, it is appropriate that both facilities retain FUNCTIONAL offsite dose projection equipment. The calendar month frequency is appropriate since, realistically, the offsite dose projection equipment will be also tested during the three or four drills that are held each year at Plant Vogtle.

15.0 Administrative Controls

TR 15.1 Unit Staff

TR 15.1.1	All CORE ALTERATIONS shall be observed and directly supervised by either a licensed Senior Operator or licensed Senior Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation.
TR 15.1.2	Each on-duty shift shall be composed of at least the minimum shift crew composition shown in Table 15.1.2-1.

Table 15.1.2-1

MINIMUM SHIFT CREW COMPOSITION
TWO UNITS WITH A COMMON CONTROL ROOM

Position	Number of Individuals Required to Fill Position		
	Both Units in MODE 1, 2, 3, or 4	Both Units in MODE 5 or 6 or DEFUELED	One Unit in MODE 1, 2, 3, or 4 and One Unit in MODE 5 or 6 or DEFUELED
SS	1	1	1
SRO	1	None(1)	1
RO	3(2)	2(2)	3(2)
NLO	3(2)	3(2)	3(2)
STA	1(3)	None	1(3)

(1) At least one licensed Senior Operator or licensed Senior Operator Limited to Fuel Handling who has no other concurrent responsibilities must be present during CORE ALTERATIONS on either unit.

(2) At least one of the required individuals must be assigned to the designated position for each unit.

(3) See TS 5.2.2.g.

SS - Shift Superintendent with a Senior Operator License.
SRO - Individual with a Senior Operator License.
RO - Individual with an Operator License.
NLO - Non-licensed operator.
STA - Shift Technical Advisor.