

RIVER BEND STATION

TECHNICAL REQUIREMENTS MANUAL

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1.0 USE AND APPLICATION

1.01 Technical Requirements Manual (TRM) Description

The Technical Requirements Manual (TRM) provides those limitations upon plant operations which are part of the licensing basis for the station but do not meet the criteria for continued inclusion in the Technical Specifications.

It also provides information which supplements the Technical Specifications such as specific plant setpoints for Technical Specification equipments. Nothing in the TRM shall supersede any Technical Specification requirement.

1.02 TRM Use

The Technical Specification rules for Use and Application of section 1.0 apply to the TRM. TRM LCOs and SRs are designated as TLCO and TSR.

TRM sections with no associated TLCO apply to the Technical Specification of the same number.

1.03 Document Control

The TRM is considered a licensing basis document and as such, overall control of the document shall be in accordance with site procedures for document control. Distribution of the TRM is controlled by the River Bend Station Licensing Department. Licensing specifies the proper distribution for the TRM which includes those personnel/locations which receive the Technical Specifications as well as any other groups which need access to the information contained in the TRM. Changes to the TRM will be issued on a replacement page basis to controlled document holders following approval of the change in accordance with site procedures on document control.

Revision 5 is the initial issue of the Improved Technical Specification TRM replacing the existing TRM Revision 0 through 3 in its entirety. Future revised pages will be reflected in the List of Effective Pages.

1.04 Changes to the TRM

Changes made at River Bend Station have the potential to affect (or be affected by) the TRM. These include items such as design modifications, procedure changes, other licensing document changes, etc. Changes to the TRM shall be controlled by procedure. Changes to the TRM shall be evaluated per the 10CFR50.59 program. This program requires that the TRM be considered in a manner similar to the USAR when screening changes to determine if an unreviewed safety question might be involved.

Changes to the TRM will be reported to the NRC annually as part of the USAR update. Related safety evaluations will be reported as part of the 10CFR50.59 annual report. Proposed TRM changes that are determined to constitute an unreviewed safety question (as defined by 10CFR50.59(a)(2)) will either not be made or will be submitted to the NRC for prior review and approval.

Where additional reviews and approvals are required by regulations to effect a change in a TRM requirement, such as Fire Protection Program changes, those reviews and approvals shall also be completed as required to implement a change to the TRM.

1.1 Definitions

-----NOTE-----

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Requirements. Where a corresponding Technical Specification definition exists, the Technical Specification definition is duplicated herein for convenience..

| <u>Term</u> | <u>Definition</u> |
|---|---|
| ACTIONS | ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times. |
| AVERAGE PLANAR EXPOSURE | The AVERAGE PLANAR EXPOSURE shall be applicable to a specific planar height and is equal to the sum of the exposure of all the fuel rods in the specified bundle at the specified height divided by the number of fuel rods in the fuel bundle. |
| AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR) | The APLHGR shall be applicable to a specific planar height and is equal to the sum of the LHGRs for all the fuel rods in the specified bundle at the specified height divided by the number of fuel rods in the fuel bundle. |

(continued)

1.1 Definitions (continued)

CHANNEL CALIBRATION

A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel, including the required sensor, alarm, display, and trip functions, and shall include the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps so that the entire channel is calibrated.

CHANNEL CHECK

A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.

CHANNEL FUNCTIONAL TEST

A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY, including required alarm, interlock, display, and trip functions, and channel failure trips. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps so that the entire channel is tested.

CORE ALTERATION

CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components within the reactor vessel with the vessel head removed and fuel in the vessel. The following exceptions are not considered to be CORE ALTERATIONS:

- a. Movement of source range monitors, local power range monitors, intermediate range monitors, traversing incore probes, or special movable detectors (including undervessel replacement); and
- b. Control rod movement provided there are no fuel assemblies in the associated core cell.

Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

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1.1 Definitions (continued)

CORE OPERATING LIMITS
REPORT (COLR)

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

CRITICAL POWER RATIO (CPR)

The CRITICAL POWER RATIO (CPR) shall be the ratio of that power in the assembly which is calculated by application of the GEXL correlation to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.

DOSE EQUIVALENT I-131

DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table III of TID-14844, AEC, 1962, "Calculation of Distance Factors for Power and Test Reactor Sites."

EMERGENCY CORE COOLING
SYSTEM (ECCS) RESPONSE
TIME

The ECCS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ECCS initiation setpoint at the channel sensor until the ECCS equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.

END OF CYCLE
RECIRCULATION PUMP TRIP
(EOC-RPT) SYSTEM RESPONSE
TIME

The EOC-RPT SYSTEM RESPONSE TIME shall be that time interval from initial movement of the associated turbine stop valve or the turbine control valve to complete suppression of the electric arc between the fully open contacts of the recirculation pump circuit breaker. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.

(continued)

1.1 Definitions (continued)

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|--|---|
| FREQUENCY NOTATION | The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.1-2. |
| GASEOUS RADWASTE TREATMENT (OFFGAS) SYSTEM | The GASEOUS RADWASTE TREATMENT (OFFGAS) SYSTEM is the system designed and installed to reduce radioactive gaseous effluents by collecting primary coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment. |
| ISOLATION SYSTEM RESPONSE TIME | The ISOLATION SYSTEM RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its isolation initiation setpoint at the channel sensor until the isolation valves travel to their required positions. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. |
| L_a | The maximum allowable primary containment leakage rate, L_a , shall be 0.26% of primary containment air weight per day at the calculated peak containment pressure (P_a) |
| LEAKAGE | <p>LEAKAGE shall be:</p> <ol style="list-style-type: none"><u>Identified LEAKAGE</u><ol style="list-style-type: none">LEAKAGE into the drywell such as that from pump seals or valve packing, that is captured and conducted to a sump or collecting tank; orLEAKAGE into the drywell atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE;<u>Unidentified LEAKAGE</u><p>All LEAKAGE into the drywell that is not identified LEAKAGE;</p><u>Total LEAKAGE</u><p>Sum of the identified and unidentified LEAKAGE;</p><u>Pressure Boundary LEAKAGE</u><p>LEAKAGE through a nonisolable fault in a Reactor Coolant System (RCS) component body, pipe wall, or vessel wall.</p> |

(continued)

1.1 Definitions (continued)

LINEAR HEAT GENERATION RATE (LHGR)

The LHGR shall be the heat generation rate per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.

LOGIC SYSTEM FUNCTIONAL TEST

A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all required logic components (i.e., all required relays and contacts, trip units, solid state logic elements, etc.) of a logic circuit, from as close to the sensor as practicable up to, but not including, the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total system steps so that the entire logic system is tested.

LOWER LIMIT OF DETECTABILITY (LLD)

The LLD is defined, for purposes of these specifications, as the smallest concentration of radioactive material in a sample that will yield a net count, above system background, that will be detected with 95% probability with only 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system, which may include radiochemical separation:

$$LLD = \frac{4.66s_p}{E \cdot V \cdot 2.22 \times 10^6 \cdot Y \cdot \exp(-\lambda \Delta t)}$$

Where:

LLD for radioactive effluents is the "a priori" lower limit of detection as defined above, as microcuries per unit mass or volume,

LLD for environmental samples is the "a priori" lower limit of detection as defined above, then multiplied by 10^6 , to yield picocuries per unit mass or volume,

s_p is the standard deviation of the background counting rate or of the counting rate of a blank sample, as appropriate, as counts per minute,

E is the counting efficiency, as counts per disintegration,

V is the sample size in units of mass or volume,

2.22×10^6 is the number of disintegrations per minute per microcurie,

(continued)

1.1 Definitions (continued)

(LLD continued)

Y is the fractional radiochemical yield, when applicable,

λ is the radioactive decay constant for the particular radionuclide, and

Δt for plant effluents is the elapsed time between the midpoint of sample collection and the time of counting.

Δt for environmental samples is the elapsed time between sample collection, or end of the sample collection period, and time of counting.

Typical values of E, V, Y, and Δt should be used in the calculation.

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as an a posteriori (after the fact) limit for a particular measurement.

MAXIMUM FRACTION
OF LIMITING
POWER DENSITY (MFLPD)

The MFLPD shall be the largest value of the fraction of limiting power density in the core. The fraction of limiting power density shall be the LHGR existing at a given location divided by the specified LHGR limit for that bundle type.

MEMBER(S) OF THE PUBLIC

MEMBER(S) OF THE PUBLIC shall include all persons who are not occupationally associated with the plant. This category does not include employees of the utility, its contractors or vendors. Also excluded from this category are persons who enter the site to service equipment or to make deliveries. This category does include persons who use portions of the site for recreational, occupational or other purposes not associated with the plant.

MINIMUM CRITICAL POWER
RATIO (MCPR)

The MCPR shall be the smallest critical power ratio (CPR) that exists in the core for each class of fuel. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.

(continued)

1.1 Definitions (continued)

| | |
|--|--|
| MODE | A MODE shall correspond to any one inclusive combination of mode switch position, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel. |
| OFFSITE DOSE CALCULATION MANUAL (DDCM) | The OFFSITE DOSE CALCULATION MANUAL shall contain the methodology and parameters used in the calculation of offsite doses due to radioactive gaseous and liquid effluents and in the calculation of gaseous and liquid effluent monitoring alarm/trip setpoints. It shall also contain a table and figure defining current radiological environmental monitoring sample locations. |
| OPERABLE/OPERABILITY | A system, subsystem, division, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, division, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s). |
| Operations With a Potential for Draining the Reactor Vessel (OPDRVs) | <p>An OPDRV consists of those operations or maintenance that:</p> <ol style="list-style-type: none">have the potential to uncover irradiated fuel in the reactor pressure vessel or for Operations With the Potential to Drain the Reactor Cavity (OPDRCs), containment fuel storage pool, andinvolve vessel penetrations or piping greater than 1-1/4 inches which penetrate the RPV below the LPCI nozzles (not to include the LPCI nozzles). Work on multiple lines with a total equivalent diameter exceeding 1-1/4 inches are included, andan acceptable barrier or otherwise addressed measures are not in place to provide reasonable assurance that an error in the maintenance or operations activity will not cause drainage of the reactor pressure vessel. |
| RATED THERMAL POWER (RTP) | RTP shall be a total reactor core heat transfer rate to the reactor coolant of 2894 MWt. |

(continued)

1.1 Definitions (continued)

| | |
|---|---|
| REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME | The RPS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until de-energization of the scram pilot valve solenoids. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. |
| REPORTABLE EVENT | A REPORTABLE EVENT shall be any of those conditions specified in 10 CFR 50.73. |
| ROD DENSITY | ROD DENSITY shall be the number of control rod notches inserted as a fraction of the total number of control rod notches. All rods fully inserted is equivalent to 100% ROD DENSITY. |
| SHUTDOWN MARGIN (SDM) | SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming that: <ul style="list-style-type: none">a. The reactor is xenon free;b. The moderator temperature is 68°F; andc. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM. |
| SITE BOUNDARY | The SITE BOUNDARY shall be that line beyond which the land is not owned, leased, or otherwise controlled by the licensee. |
| SOLIDIFICATION | SOLIDIFICATION shall be the conversion of wet wastes into a form that meets shipping and burial ground requirements. |
| SOURCE CHECK | A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a source of increased radioactivity. |
| STAGGERED TEST BASIS | A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function. |
| THERMAL POWER | THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant. |

(continued)

1.1 Definitions (continued)

TURBINE BYPASS SYSTEM
RESPONSE TIME

The TURBINE BYPASS SYSTEM RESPONSE TIME consists of two components:

- a. The time from initial movement of the main turbine stop valve or control valve until 80% of the turbine bypass capacity is established; and
- b. The time from initial movement of the main turbine stop valve or control valve until initial movement of the turbine bypass valve.

The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.

UNRESTRICTED AREA

An UNRESTRICTED AREA shall be any area at or beyond the SITE BOUNDARY access to which is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials, or any area within the SITE BOUNDARY used for residential quarters or for industrial, commercial, institutional, and/or recreational purposes.

VENTILATION EXHAUST
TREATMENT SYSTEM

A VENTILATION EXHAUST TREATMENT SYSTEM is any system designed and installed to reduce gaseous radioiodine or radioactive material in particulate form in effluents by passing ventilation or vent exhaust gases through charcoal adsorbers and/or HEPA filters for the purpose of removing iodines or particulates from the gaseous exhaust stream prior to the release to the environment (such a system is not considered to have any effect on noble gas effluents). Engineered Safety Feature (ESF) atmospheric cleanup systems are not considered to be VENTILATION EXHAUST TREATMENT SYSTEM components.

Table 1.1-1 (page 1 of 1)
MODES

| MODE | TITLE | REACTOR MODE SWITCH POSITION | AVERAGE REACTOR COOLANT TEMPERATURE (°F) |
|------|------------------|-------------------------------------|--|
| 1 | Power Operation | Run | NA |
| 2 | Startup | Refuel(a) or Startup/Hot Standby | NA |
| 3 | Hot Shutdown(a) | Shutdown | > 200 |
| 4 | Cold Shutdown(a) | Shutdown | ≤ 200 |
| 5 | Refueling (b) | Shutdown or Refuel | NA |

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

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

TABLE 1.1-2
SURVEILLANCE FREQUENCY NOTATION

| <u>NOTATION</u> | <u>FREQUENCY</u> |
|-----------------|---|
| S | At least once per 12 hours. |
| D | At least once per 24 hours. |
| W | At least once per 7 days. |
| M | At least once per 31 days. |
| Q | At least once per 92 days. |
| SA | At least once per 184 days. |
| A | At least once per 366 days. |
| R | At least once per 18 months (550 days). |
| S/U | Prior to each reactor startup. |
| P | Prior to each radioactive release. |
| N.A. | Not applicable. |

TR 3.0 APPLICABILITY

3.0 LIMITING CONDITION FOR OPERATION (TLCO) APPLICABILITY

TLCO 3.0.1 TLCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in TLCO 3.0.2.

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

If the TLCO 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.

TLCO 3.0.3 When a Technical Requirements Manual TLCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, the following actions shall be taken:

1. Implement appropriate compensatory actions as needed.
2. Verify that a required safety function is not compromised by the inoperabilities.
3. Within 7 hours, obtain duty manager approval of the compensatory actions and a plan for exiting TLCO 3.0.3.

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

TLCO 3.0.3 is always applicable to Technical Requirements Manual TLCOs.

Actions to exit TLCO 3.0.3 should be pursued without delay and in a controlled manner.

TLCO 3.0.4 When a TLCO is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS, or that are part of a shutdown of the unit. (continued)

3.0 TLCO APPLICABILITY (continued)

TLCO 3.0.4 (continued)

Exceptions to this Specification are stated in the individual Specifications. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.

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

TLCO 3.0.5

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

TLCO 3.0.6

When a supported system TLCO or Technical Specification LCO is not met solely due to a support system TLCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system TLCO ACTIONS are required to be entered. This is an exception to TLCO 3.0.2 for the supported system. In this event, additional evaluations and limitations may be required in accordance with Technical Specification 5.5.10, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO or TLCO in which the loss of safety function exists are required to be entered.

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

TLCO 3.0.7

(Not Used)

3.0 SURVEILLANCE REQUIREMENT (TSR) APPLICABILITY

TSR 3.0.1

TSRs shall be met during the MODES or other specified conditions in the Applicability for individual TLCOs unless otherwise stated in the TSR. 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 TLCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the TLCO except as provided in TSR 3.0.3.

Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

The requirements for compliance with TSRs noted as applicable to Technical Specification LCOs shall be the Technical Specification surveillance requirement applicability, SR 3.0.1 through SR 3.0.4.

TSR 3.0.2

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

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

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

Exceptions to this Specification are stated in the individual Specifications.

TSR 3.0.3

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

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

(continued)

3.0 TSR APPLICABILITY (continued)

TSR 3.0.4

Entry into a MODE or other specified condition in the Applicability of a TLCO shall not be made unless the TLCO's Surveillances have been met within their specified Frequency. This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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

TR 3.1 REACTIVITY CONTROL SYSTEMS

TR 3.1.3 Control Rod OPERABILITY

-----NOTE-----
The following surveillance Note applies to the identified SRs of Technical
Specification LCO 3.1.3.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| SR 3.1.3.1 -----NOTE----- Control rod position indication is required to change when control rods are moved and should be verified when performing Technical Specification SR 3.1.3.2 or SR 3.1.3.3. ----- | During performance of Technical Specification SR 3.1.3.2 and SR 3.1.3.3. |

TR 3.1.5 Control Rod Scram Accumulators

-----NOTE-----
The following surveillance requirement applies to Technical Specification LCO 3.1.5. Failure to meet this surveillance requirement requires entry into Technical Specification LCO 3.1.5.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|-----------|
| TSR 3.1.5.1 | (Not Used) | |
| TSR 3.1.5.2 | Measure and record the time, for up to 10 minutes, that each individual accumulator check valve maintains the associated accumulator pressure above the alarm set point with no control rod drive pump operating. | 18 months |

Control Rod Scram Accumulator Detectors/alarm Instrumentation
TR 3.1.5.1

TR 3.1.5.1 Control Rod Scram Accumulator Detectors/alarm Instrumentation

TLCO 3.1.5.1 Each control rod scram accumulator alarm shall be OPERABLE.

APPLICABILITY: When associated control rod scram accumulator is OPERABLE
per Technical Specification LCO 3.1.5.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each control rod scram
accumulator detector/alarm.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------|
| A. One or more accumulator pressure detectors or alarms inoperable. <u>OR</u> One or more accumulator leak detectors or alarms inoperable. | A.1 Declare the associated accumulator inoperable. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---------------|---|-----------|
| TSR 3.1.5.1.1 | Perform a CHANNEL FUNCTIONAL TEST on the leak detector and associated alarm for each control rod scram accumulator. | 18 months |
| TSR 3.1.5.1.2 | Perform a CHANNEL CALIBRATION of the pressure detector for each control rod scram accumulator and verify a nominal alarm setpoint of 1520 psig on decreasing pressure. | 18 months |

TR 3.1.9 Control Rod Drive Housing Support

TLCO 3.1.9 The control rod drive housing support shall be in place.

APPLICABILITY: MODE 1, 2 and 3.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|-------------------|-----------------|
| A. Control rod drive housing support not in place. | A.1 Be in MODE 3 | 12 hours |
| | <u>AND</u> | |
| | A.2 Be in MODE 4. | 36 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|-------------------|
| <p>-----NOTE----- Only required following housing support disassembly or maintenance in the control rod drive housing support area -----</p> <p>TSR 3.1.9.1 Verify the housing support to be in place by visual inspection.</p> | Prior to startup. |

TR 3.2 POWER DISTRIBUTION LIMITS

TR 3.2.4 Average Power Range Monitor (APRM) Rod Block Gain and Setpoints

- TLCO 3.2.4
- a. T shall be ≥ 1.0 ; or
 - b. Each required APRM setpoint specified in the COLR shall be made applicable; or
 - c. Each required APRM gain shall be adjusted such that the adjusted APRM readings result in a calculated $T \geq 1.0$ when the APRM reading is substituted for F RTP.

APPLICABILITY: THERMAL POWER $\geq 25\%$ RTP.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------|
| A. Requirements of the TLCO not met. | A.1 Satisfy the requirements of the TLCO. | 6 hours |
| B. Required Action and associated Completion Time not met. | B.1 Reduce THERMAL POWER to $< 25\%$ RTP. | 4 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>TSR 3.2.4.1 -----NOTE----- Not required to be met if TSR 3.2.4.2 is satisfied for TLCO 3.2.4, Item b or c requirements. ----- Verify T is ≥ 1.0.</p> | <p>Once within 12 hours after $\geq 25\%$ RTP <u>AND</u> 24 hours thereafter</p> |
| <p>TSR 3.2.4.2 -----NOTE----- Not required to be met if TSR 3.2.4.1 is satisfied for TLCO 3.2.4, Item a requirements. ----- Verify APRM setpoints or gains are adjusted for the calculated T.*</p> | <p>12 hours</p> |

*With $T < 1.0$, rather than adjusting the APRM setpoints, the APRM gain may be adjusted such that the adjusted APRM readings result in a calculated $T \geq 1.0$ when the APRM reading is substituted for FRTP, provided that the adjusted APRM reading does not exceed 100% of RATED THERMAL POWER, and a notice of the adjustment is posted on the reactor control panel.

TR 3.3 INSTRUMENTATION

TR 3.3.1.1 Reactor Protection System (RPS) Instrumentation

-----NOTE-----
The following surveillance requirement applies to Technical Specification LCO 3.3.1.1. Failure to meet this surveillance requirement requires entry into Technical Specification LCO 3.3.1.1.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.3.1.1.1 - 3.3.1.1.15 (Not Used) | |
| TSR 3.3.1.1.16 -----NOTE----- Enter Technical Specification LCO 3.3.1.1 for Functions 9 and 10 if this surveillance requirement is not met. ----- Verify that all bypass valves are closed $\geq 40\%$ RTP. | 12 hours |
| TSR 3.3.1.1.17 - 3.3.1.1.18 (Not Used) | |

Table 3.3.1.1-1 (page 1 of 3)
Reactor Protection System Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER TRIP SYSTEM | CONDITIONS REFERENCED FROM REQUIRED ACTION 3.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT/ RESPONSE TIME |
|--|---|--|---|------------------------------|--|
| 1. Intermediate Range Monitors | | | | | |
| a. Neutron Flux - High | 1 | 3 | H | SR 3.3.1.1.1 | 120/125 |
| | | | | SR 3.3.1.1.4 | divisions |
| | | | | SR 3.3.1.1.6 | of full |
| | | | | SR 3.3.1.1.7 | scale |
| | | | | SR 3.3.1.1.13 | |
| | | | | SR 3.3.1.1.15 | |
| b. Trip | 1 (a) | 3 | I | SR 3.3.1.1.1 | 120/125 |
| | | | | SR 3.3.1.1.5 | divisions |
| | | | | SR 3.3.1.1.13 | of full |
| | | | | SR 3.3.1.1.15 | scale |
| | | | | | |
| | | | | SR 3.3.1.1.4 | NA |
| | | | | SR 3.3.1.1.15 | |
| | | | | SR 3.3.1.1.5 | NA |
| | | | | SR 3.3.1.1.15 | |
| 2. Average Power Range Monitors | | | | | |
| a. Neutron Flux - High, Setdown | 2 | 3 | H | SR 3.3.1.1.1 | 15% RTP |
| | | | | SR 3.3.1.1.4 | |
| | | | | SR 3.3.1.1.7 | |
| | | | | SR 3.3.1.1.8 | |
| | | | | SR 3.3.1.1.11 | |
| | | | | SR 3.3.1.1.15 | |
| b. Flux Biased Simulated Thermal Power - High | 1 | 3 | G | SR 3.3.1.1.1 | 0.66 W + |
| | | | | SR 3.3.1.1.2 | 48% RTP and |
| | | | | SR 3.3.1.1.3 | 111% |
| | | | | SR 3.3.1.1.8 | RTP (b) |
| | | | | SR 3.3.1.1.9 | |
| | | | | SR 3.3.1.1.11 | |
| | | | | SR 3.3.1.1.14 | |
| | | | | SR 3.3.1.1.15 | |
| | | | | SR 3.3.1.1.17 | |
| | | | | SR 3.3.1.1.18 | ≤ 0.09 sec (c) (d) |

(continued)

- a. With any control rod withdrawn from a core cell containing one or more fuel assemblies.
- b. Nominal setpoint is 0.66 W + 42.7% RTP when reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating."
- c. Not including simulated thermal power time constant specified in the COLR.
- d. Response time shall be measured from the detector output or from the input to the first electronic component in the channel.
- e), (f), (g), (h) not used this page

Table 3.3.1.1-1 (page 2 of 3)
Reactor Protection System Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER TRIP SYSTEM | CONDITIONS REFERENCED FROM REQUIRED ACTION 5.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT/ RESPONSE TIME |
|--|--|--|--|---|--|
| 2. Average Power Range Monitors (continued) | | | | | |
| c. Fixed Neutron Flux - High | 1 | 3 | G | SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.11 SR 3.3.1.1.15 SR 3.3.1.1.18 | 118% RTP < 0.09 sec (d) |
| d. Trip | 1,2 | 3 | H | SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.15 | NA |
| e. Reactor Vessel Steam Dome Pressure - High | 1,2 | 2 | H | SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.18 | 1064.7 psig $T_L \leq 0.35$ sec (h) |
| f. Reactor Vessel Water Level - Low, Level 1 | 1,2 | 2 | H | SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.18 | 9.7 inches $T_L \leq 1.05$ sec (h) |
| g. Reactor Vessel Water Level - High, Level 1 | 2, 25% RTP | 2 | F | SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.18 | 51 inches $T_L \leq 1.05$ sec (h) |
| h. Main Steam Isolation Valve - Closure ^{1e} | 1 | 8 | G | SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.18 | 8% closed < 0.09 sec |
| i. Main Steam Pressure - High | 1,2 | 2 | H | SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 | 1.68 psid |

(continued)

- a. (b), (c), (f), (g) not used this page
- d. Response time shall be measured from the detector output or from the input to the first electronic component in the channel.
- e. This function automatically bypassed with the reactor mode switch not in RUN.
- h. $T_L = T_x + T_z$ where:
 T_L = Measured total response time of the isolation system instrumentation
 T_x = Hydraulic response time of the channel sensor measured upon initial installation
 T_z = Measured response time of the logic circuit excluding the channel sensor
 The given numerical value is the acceptance criterion for T_L .
 In case the sensor is replaced or refurbished, a hydraulic response time test must be performed to determine a revised value for T_x .

Table 3.3.1.1-1 (page 3 of 3)
Reactor Protection System Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER TRIP SYSTEM | CONDITIONS REFERENCED FROM REQUIRED ACTION D.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT/ RESPONSE TIME |
|---|--|--|--|---|--|
| 9. Steam Discharge Volume Water Level - High | | | | | |
| a. Transmitter/Trip Unit | 1,2 | 2 | H | SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 | 49 inches |
| | 5(a) | 2 | I | SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 | 49 inches |
| b. Float Switch | 1,2 | 2 | H | SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 | 47.32 inches for LSN013A, B 45.44 inches for LSN013C, D |
| | 5(a) | 2 | I | SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 | 47.32 inches for LSN013A, B 45.44 inches for LSN013C, D |
| c. Turbine Stop Valve Closure | 2 40% RTP | 4 | E | SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.16 TSR 3.3.1.1.16 SR 3.3.1.1.18 | 5% closed 1g) ≤ 0.06 sec |
| d. Turbine Control Valve Fast Closure Trip Oil Pressure - Low | 2 40% RTP | 2 | E | SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.16 TSR 3.3.1.1.16 SR 3.3.1.1.18 | 530 psig 1g) ≤ 0.07 sec(f) |
| 11. Reactor Mode Switch - Shutdown Position | 1,2 | 2 | H | SR 3.3.1.1.12 SR 3.3.1.1.15 | NA |
| | 5(a) | 2 | I | SR 3.3.1.1.12 SR 3.3.1.1.15 | NA |
| 12. Manual Scram | 1,2 | 2 | H | SR 3.3.1.1.5 SR 3.3.1.1.15 | NA |
| | 5(a) | 2 | I | SR 3.3.1.1.5 SR 3.3.1.1.15 | NA |

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

(b), (c), (d), (e), (f) not used this page

(f) Measured from start of turbine control valve fast closure.

(g) The Turbine First Stage Pressure nominal setpoint is 177 psig with an Allowable value ≤ 187 psig.

TR 3.3.2.1 Control Rod Block Instrumentation

TLCO 3.3.2.1 The control rod block instrumentation for each Function in Table 3.3.2.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.2.1-1.

ACTIONS

-----NOTE-----
1. Separate Condition entry is allowed for the channels not required by the Technical Specifications.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|----------------------------------|
| A. One or more required channels inoperable. | A.1 Enter the Condition referenced in Table 3.3.2.1-1 for that channel. | Immediately |
| B. As required by Required Action A.1 and referenced in Table 3.3.2.1-1. | <p>B.1 -----NOTE----- Applicable if only <u>one</u> required channel of the Function is inoperable. ----- Enter Condition C.</p> <p>AND</p> <p>B.2 -----NOTE----- Applicable if more than <u>one</u> required channel of the Function is inoperable. ----- Enter Condition C.</p> | <p>7 days</p> <p>Immediately</p> |
| <p>C. As required by Required Action A.1 and referenced in Table 3.3.2.1-1.</p> <p>OR</p> <p>As required by Condition B.</p> | C.1 Place at least one of the inoperable channel(s) in the tripped condition. | 1 hour |

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| D. As required by Required Action A.1 and referenced in Table 3.3.2.1-1. | D.1.1 Verify Control Rod Block capability is maintained for the applicable function. | 1 hour |
| | <u>AND</u> | |
| | D.1.2 Place at least one INOPERABLE channel in the tripped condition | 24 hours |
| | <u>OR</u> | |
| | D.2 Initiate a control rod block. | 1 hour |

SURVEILLANCE REQUIREMENTS

-----NOTES-----

1. Refer to Table 3.3.2.1-1 to determine which TSRs apply for each Control Rod Block Function.
 2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains control rod block capability.
-

| SURVEILLANCE | FREQUENCY |
|--|--|
| TSR 3.3.2.1.1 - 3.3.2.1.6 (Not Used) | |
| TSR 3.3.2.1.7 Perform CHANNEL CALIBRATION | 184 days |
| TSR 3.3.2.1.8 - 3.3.2.1.9 (Not Used) | |
| TSR 3.3.2.1.10 -----NOTE----- Enter LCO 3.3.2.1 Condition A if this surveillance requirement is not met. ----- Verify that all bypass valves are closed. | Initially, prior to > 20% RTP. <u>AND</u> 12 hours, thereafter |
| TSR 3.3.2.1.11 Perform a CHANNEL CHECK. | 12 hours |

(continued)

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>TSR 3.3.2.1.12 -----NOTE----- Not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2 (12 hours after IRMs are on range 2 for SRMs). ----- Perform a CHANNEL FUNCTIONAL TEST.</p> | <p>Within 7 days prior to entering MODE 2 from a shutdown exceeding 7 days duration <u>AND</u> 7 days for IRMs <u>AND</u> 31 days for SRMs</p> |
| <p>TSR 3.3.2.1.13 -----NOTE----- For APRM neutron flux - upscale, Startup, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. ----- Perform a CHANNEL FUNCTIONAL TEST.</p> | <p>92 days</p> |
| <p>TSR 3.3.2.1.14 Perform a CHANNEL FUNCTIONAL TEST.</p> | <p>Within 7 days prior to entering MODE 2 from a shutdown exceeding 7 days duration</p> |
| <p>TSR 3.3.2.1.15 Calibrate the trip unit</p> | <p>92 days</p> |

(continued)

SURVEILLANCE REQUIREMENTS (continued)

| | SURVEILLANCE | FREQUENCY |
|----------------|---|-----------|
| TSR 3.3.2.1.16 | <p>-----NOTES-----</p> <ol style="list-style-type: none"> 1. Neutron detectors and Reactor Recirc Flow Reference transmitters, as applicable, may be excluded. 2. For SRMs, IRMs, and APRM neutron flux - upscale - Startup, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. <p>-----</p> <p>Perform a CHANNEL CALIBRATION.</p> | 184 days |
| TSR 3.3.2.1.17 | Perform a CHANNEL CALIBRATION. | 18 months |
| TSR 3.3.2.1.18 | Calibrate the Recirc Flow Reference transmitters. | 18 months |

Table 3.3.2.1-1 (Page 1 of 2)
Control Rod Block Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER TRIP FUNCTION | CONDITIONS REFERENCED FROM TLCO REQUIRED ACTION A.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT | ALLOWABLE VALUE |
|---|---|--|--|---|---|---|
| 1. Rod Pattern Control System | | | | | | |
| a. Rod withdrawal limiter | a) | 2 | ENTER LCO 3.3.2.1 | SR 3.3.2.1.1 SR 3.3.2.1.6 SR 3.3.2.1.9 TSR 3.3.2.1.7 TSR 3.3.2.1.10 | | |
| | b) | 2 | | SR 3.3.2.1.2 SR 3.3.2.1.5 SR 3.3.2.1.7 SR 3.3.2.1.9 TSR 3.3.2.1.10 | | |
| c. Rod pattern monitoring | c) | 2 | ENTER LCO 3.3.2.1 | SR 3.3.2.1.3 SR 3.3.2.1.4 SR 3.3.2.1.5 SR 3.3.2.1.7 SR 3.3.2.1.9 | | |
| d. Reactor Mode Switch Shutdown Position | d) | 2 | ENTER LCO 3.3.2.1 | SR 3.3.2.1.8 | | |
| e. Low Power Setpoint | DR, LDR, L | 2 | ENTER LCO 3.3.2.1 | TSR 3.3.2.1.11 | 27.5 ± 3% RTP | 27.5 ± 7.5% RTP |
| f. High Power Setpoint | H, HPSE | 2 | ENTER LCO 3.3.2.1 | TSR 3.3.2.1.11 | 67.9% RTP | ≤ 68.2% RTP |
| Interlocks / WRM Range | | | | | | |
| g. Bulk Blended Neutron Flux - Profile | | | | | | |
| 1. Two Recirculation Loop Operation | 1 | 6 | B | TSR 3.3.2.1.13 TSR 3.3.2.1.14 TSR 3.3.2.1.16 TSR 3.3.2.1.18 | .66W + 42% RTP ⁽¹⁾ | ≤ .66W + 45% RTP ⁽¹⁾ |
| 2. Single Recirculation Loop Operation | 1 | 6 | B | TSR 3.3.2.1.13 TSR 3.3.2.1.14 TSR 3.3.2.1.16 TSR 3.3.2.1.18 | .66W + 36.7% RTP ⁽²⁾ and ≤ 108% RTP | ≤ .66W + 39.7% RTP ⁽²⁾ and ≤ 110% RTP |
| 3. Iterative | 1, 2 | 6 | B | TSR 3.3.2.1.13 TSR 3.3.2.1.14 | NA | NA |
| 4. Downscale | 1 | 6 | B | TSR 3.3.2.1.13 TSR 3.3.2.1.14 TSR 3.3.2.1.16 | 5% RTP | ≥ 3% RTP |
| 5. Neutron Flux - Upscale, Startup | 2 | 6 | B | TSR 3.3.2.1.13 TSR 3.3.2.1.14 TSR 3.3.2.1.16 | 12% RTP | ≤ 14% RTP |

(continued)

Table 3.3.2.1-1 (Page 2 of 2)
Control Rod Block Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER TRIP FUNCTION | CONDITIONS REFERENCED FROM TLCO REQUIRED ACTION A.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT | ALLOWABLE VALUE |
|---|---|--|--|--|--------------------------------------|---|
| 4. Full Range Monitors | | | | | | |
| a. Detector not full in* | 1 | 3 | B | TSR 3.3.2.1.12 | NA | NA |
| | 5* | 2** | C | TSR 3.3.2.1.12 | NA | NA |
| b. Upscale† | 2 | 3 | B | TSR 3.3.2.1.12 TSR 3.3.2.1.16 | 1×10^3 cps | $\leq 1.6 \times 10^3$ cps |
| | 5* | 2** | C | TSR 3.3.2.1.12 TSR 3.3.2.1.16 | 1×10^3 cps | $\leq 1.6 \times 10^3$ cps |
| c. Inoperative ‡ | 2 | 3 | B | TSR 3.3.2.1.12 | NA | NA |
| | 5* | 2** | C | TSR 3.3.2.1.12 | NA | NA |
| d. Downscale § | 2 | 3 | B | TSR 3.3.2.1.12 TSR 3.3.2.1.16 | 0.7 cps ⁽¹⁾ | ≥ 0.5 cps ⁽¹⁾ |
| | 5* | 2** | C | TSR 3.3.2.1.12 TSR 3.3.2.1.16 | 0.7 cps ⁽¹⁾ | ≥ 0.5 cps ⁽¹⁾ |
| 5. Intermediate Range Monitors | | | | | | |
| a. Detector not full in | 2, 5* | 6 | B | TSR 3.3.2.1.12 | NA | NA |
| b. Upscale | 2, 5* | 6 | B | TSR 3.3.2.1.12 TSR 3.3.2.1.16 | 108/125 division of full scale | $\leq 110/125$ division of full scale |
| c. Inoperative | 2, 5* | 6 | B | TSR 3.3.2.1.12 | NA | NA |
| d. Downscale ¶ | 2, 5* | 6 | B | TSR 3.3.2.1.12 TSR 3.3.2.1.16 | 5/125 division of full scale | $\geq 3/125$ division of full scale |
| e. Reactor shutdown volume water inventory | 1, 2, 5* | 2 | D | TSR 3.3.2.1.13 TSR 3.3.2.1.18 TSR 3.3.2.1.17 | 18.00" | ≤ 21.12 " |
| | | | | | 18.00" | ≤ 21.60 " |
| f. Reactor shutdown system recirculation flow failure | 1 | 2 | D | TSR 3.3.2.1.13 TSR 3.3.2.1.14 TSR 3.3.2.1.16 TSR 3.3.2.1.18 | 114% of rated flow | $\leq 117\%$ of rated flow |

* With any control rod withdrawn. Not applicable to control rods removed per Technical Specification LCO 3.10.3 or 3.10.6.

** PERABLE channels must be associated with SRM required OPERABLE per Technical Specification LCO 3.3.1.3.

a. THERMAL POWER \geq HPSP.

b. THERMAL POWER $\geq 35\%$ RTP and \leq HPSP.

c. With THERMAL POWER $\leq 20\%$ RTP.

d. Reactor mode switch in the shutdown position.

e. This function shall be automatically bypassed if detector count rate is ≥ 100 cps or the IRM channels are on range 3 or higher.

f. This function shall be automatically bypassed when the associated IRM channels are on range 8 or higher.

g. This function shall be automatically bypassed when the IRM channels are on range 3 or higher.

h. This function shall be automatically bypassed when the IRM channels are on range 1.

i. Provided the signal to noise ratio is ≥ 2.0 , otherwise nominal setpoint of 3.0 cps and allowable 1.8 cps.

j. The APRM Rod Block Function is varied as a function of recirculation loop flow (W). The trip setting for this function must be maintained in accordance with TLCO 3.2.4.

TR 3.3.3.2 Remote Shutdown System

TABLE 3.3.3.2-1
REMOTE SHUTDOWN MONITORING INSTRUMENTATION

| FUNCTION | REQUIRED LOCATIONS * | REQUIRED CHANNELS PER FUNCTION | NORMALLY ENERGIZED |
|--------------------------------------|----------------------------|---|-----------------------|
| 1. Reactor Vessel Pressure | RSP1, | 1 | NO |
| | RSP2 | 1 | YES |
| 2. Reactor Vessel Water Level | RSP1 | 1 | NO |
| | RSP2 | 1 | YES |
| 3. Safety/Relief Valve Demand | RSP1 | 1/valve | NO |
| Position, 1 Valves | RSP2 | 1/valve | NO |
| 4. Suppression Pool Water | RSP1 | 1 | NO |
| Level | RSP2 | 1 | NO |
| 5. Suppression Pool Water | RSP1 | 1 | YES |
| Temperature | RSP2 | 1 | YES |
| 6. Drywell Pressure | RSP1 | 1 | NO |
| | RSP2 | 1 | NO |
| 7. Drywell Temperature | RSP1 | 1 | YES |
| | RSP2 | 1 | YES |
| 8. RHR System Flow: Loop A | RSP1 | 1 | NO |
| RHR System Flow: Loop B | RSP2 | 1 | YES |
| RHR System Flow: Loop C | RSP2 | 1 | YES |
| 9. RHR Hx Cooling Water System Flow: | RSP1 | 1 | YES |
| Loop A | | | |
| RHR Hx Cooling Water System Flow: | RSP2 | 1 | YES |
| Loop B | | | |
| 10. RHR System Flow | RSP1 | 1 | NO |
| 11. Turbine Speed | RSP1 | 1 | NO |

- * RSP1 - Remote Shutdown Panels 1C61*P001 and 1RSS*PNL101
RSP2 - Remote Shutdown Panel 1RSS*PNL102

TABLE 3.3.3.2-2 page 1 of 3
REMOTE SHUTDOWN SYSTEM CONTROLS

| | | MINIMUM CHANNELS OPERABLE | |
|-----|--|---------------------------|------|
| | | RSP1 | RSP2 |
| 1. | RCIC Suction from CST MOV (1E51*MOVFO10) | 1 | NA |
| 2. | RCIC Injection Shutoff MOV (1E51*MOVFO13) | 1 | NA |
| 3. | RCIC Min. Flow to Suppression Pool MOV (1E51*MOVFO19) | 1 | NA |
| 4. | RCIC Test Bypass to CST MOV (1E51*MOVFO22) | 1 | NA |
| 5. | RCIC Gland Seal Air Compressor (1E51-C002C) | 1 | NA |
| 6. | RCIC Pump Suction from Suppression Pool MOV (1E51*MOVFO31) | 1 | NA |
| 7. | RCIC Steam to Turbine MOV (1E51*MOVFO45) | 1 | NA |
| 8. | RCIC Turbine Lube Oil Cooling MOV (1E51*MOVFO46) | 1 | NA |
| 9. | RCIC Test Bypass to CST MOV (1E51*MOVFO59) | 1 | NA |
| 10. | RCIC Steam Supply Inboard Isolation MOV (1E51*MOVFO63) | 1 | NA |
| 11. | RCIC Steam Supply Outboard Isolation MOV (1E51*MOVFO64) | 1 | NA |
| 12. | RCIC Turbine Exhaust to Suppression Pool MOV (1E51*MOVFO68) | 1 | NA |
| 13. | RCIC Steam Line Warmup Line Isolation MOV (1E51*MOVFO76) | 1 | NA |
| 14. | RCIC Vacuum Breaker Outboard Isolation MOV (1E51*MOVFO77) | 1 | NA |

(continued)

TABLE 3.3.3.2-2 page 2 of 3

REMOTE SHUTDOWN SYSTEM CONTROLS

| | | MINIMUM CHANNELS OPERABLE | |
|-----|---|---------------------------|------------------|
| | | RSP1 | RSP2 |
| 15. | RCIC Vacuum Breaker Inboard Isolation MOV (1E51*MOVFO78) | 1 | NA |
| 16. | RCIC Turbine Flow Controller (1C61*FICR001) | 1 | NA |
| 17. | RCIC Turbine Trip & Throttling MOV (1E51*MOVCO02) | 1 | NA |
| 18. | RCIC Turbine Local Control Select Switch (1C61A-S11) | 1 | NA |
| 19. | RHR Pump (1E12*PC002A, 2B, 2C) | 1 | 2 ^(a) |
| 20. | RHR Hx Shell Side Outlet MOV (1E12*MOVFO03A, B) | 1 | 1 |
| 21. | RHR Pump Suction MOV (1E12*MOVFO04A, B; 1E12*MOVFI05) | 1 | 2 ^(a) |
| 22. | RHR Shutdown Cooling MOV (1E12*MOVFO06A, 6B) | 2 ^(a) | NA |
| 23. | RHR Outboard Shutdown Isolation MOV (1E12*MOVFO08) | 1 | NA |
| 24. | RHR Inboard Shutdown Isolation MOV (1E12*MOVFO09) | 1 | NA |
| 25. | RHR Hx Flow to Suppression Pool MOV (1E12*MOVFO11A, B) | 1 | 1 |
| 26. | RHR Reactor Head Spray MOV (1E12*MOVFO23) | 1 | NA |
| 27. | RHR Test Line MOV (1E12*MOVFO24A, B) | 1 | 1 |
| 28. | RHR Injection Shutoff MOV (1E12*MOVFO27A, B) | 1 | 1 |

(continued)

(a) One per control equipment

TABLE 3.3.3.2-2 page 3 of 3

REMOTE SHUTDOWN SYSTEM CONTROLS

| | | MINIMUM CHANNELS OPERABLE | |
|-----|---|---------------------------|------------------|
| | | RSP1 | RSP2 |
| 29. | RHR Upper Pool Cooling Shutoff MOV (1E12*MOVFO37A, B) | 1 | 1 |
| 30. | RHR Injection MOV (1E12*MOVFO42A, B, C) | 1 | 2 ^(a) |
| 31. | RHR Hx Shell Side Inlet MOV (1E12*MOVFO47A, B) | 1 | 1 |
| 32. | RHR Hx Shell Side Bypass MOV (1E12*MOVFO48A, B) | 1 | 1 |
| 33. | RHR Discharge to Radwaste MOV (1E12*MOVFO40) | 1 | NA |
| 34. | RHR Injection MOV (1E12*MOVFO53A, B) | 1 | 1 |
| 35. | RHR Pump Minimum Flow MOV (1E12*MOVFO64A, B, C) | 1 | 2 ^(a) |
| 36. | RHR Hx Water Discharge MOV (1E12*MOVFO68A, B) | 1 | 1 |
| 37. | Safety Relief Valves (1B21*RVF051C, G, D) | 3 ^(a) | 3 ^(a) |
| 38. | SSW Pump (1SWP*P2A, 2C ^(b) , 2B, 2D) | 1, (b) | 2 ^(a) |
| 39. | Normal Service Water Isolation MOV (1SWP*MOV96A, B) | 1 | 1 |
| 40. | SSW Cooling Tower Inlet MOV (1SWP*MOV55A, B) | 1 | 1 |
| 41. | SSW Component Cooling Water Inlet MOV (1SWP*MOV510A, B) | 1 | 1 |
| 42. | SSW Component Cooling Water Outlet MOV (1SWP*MOV504A, B) | 1 | 1 |

(a) One per control equipment.

(b) SSW pump 1SWP*P2C is provided on panel 1EGS*PNL4C.

TR 3.3.4.1 End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation

-----NOTE-----
The following surveillance requirement applies to Technical Specification LCO 3.3.4.1. Failure to meet this surveillance requirement requires entry into Technical Specification LCO 3.3.4.1.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.3.4.1.1 - 3.3.4.1.8 (Not Used) | |
| TSR 3.3.4.1.9 Verify that all bypass valves are closed when $\geq 40\%$ RTP with any recirc pump in fast speed. | 12 hours |

TABLE 3.3.4.1-1

END OF CYCLE RECIRCULATION PUMP TRIP INSTRUMENTATION

| FUNCTION | NOMINAL SETPOINT | ALLOWABLE VALUE | RESPONSE TIME |
|---|------------------|-------------------|-------------------------|
| a. Turbine Stop Valve Closure | 5% closed | $\leq 7\%$ closed | ≤ 140 milliseconds |
| b. Turbine Control Valve Fast Closure * | 530 psig | ≥ 465 psig | ≤ 140 milliseconds |

- * Automatic bypass Turbine First Stage Pressure nominal setpoint is 177 psig with an allowable value of ≤ 187 psig.

TR 3.3.4.2 Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT)
Instrumentation

TABLE 3.3.4.2-1

ATWS RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

| FUNCTION | NOMINAL SETPOINT | ALLOWABLE VALUE |
|--|---------------------|--------------------|
| 1. Reactor Vessel water level - Low Low Level | - 43 INCHES | 2 - 47 INCHES |
| 2. Reactor Vessel Pressure - High | 1127 PSIG | ≤ 1135 PSIG |

TR 3.3.5.1 Emergency Core Cooling System (ECCS) Instrumentation

-----NOTE-----
The following requirement applies to Technical Specification LCO 3.3.5.1. This additional requirement applies to those Functions required to be OPERABLE in Mode 4 or 5.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| A. Technical Specification Condition A entered in MODES 4 or 5. | A.1 Declare affected supported features inoperable. | Immediately |
| <u>AND</u> | <u>OR</u> | |
| One or more required Functions inoperable with loss of the required initiation capability of a required OPERABLE ECCS subsystem. | A.2 Place the channel in trip to restore required initiation capability. | Immediately |

Table 3.3.5.1-1 (page 1 of 5)
Emergency Core Cooling System Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER FUNCTION | CONDITIONS REFERENCED FROM REQUIRED ACTION A.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT |
|--|--|--------------------------------------|--|--|---------------------|
| Low Pressure Coolant Injection-A (LPCI) and Low Pressure Core Spray (LPCS) Subsystems | | | | | |
| a. Reactor Vessel Water Level - Low Low Low, Level 1 | 1,2,3, 4 (a), 5 (a) | 1 (b) | B TRM A | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | -143 inches |
| b. Drywell Pressure - High | 1,2,3 | 1 (b) | B | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 1.68 psid |
| c. LPCI Pump Start - Time Delay Relay | 1,2,3, 4 (a), 5 (a) | 1 | C TRM A | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.6 | 2.0 seconds |
| d. LPCI Pump A Start - Time Delay Relay | 1,2,3, 4 (a), 5 (a) | 1 | C | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.6 | 5.0 seconds |
| e. Reactor Vessel Pressure - Low Injection Permissive | 1,2,3 | 4 | C | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 487 psig |
| | 4 (a), 5 (a) | 4 | B, TRM A | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 487 psig |
| f. LPCI Pump Discharge Flow - Low Bypass | 1,2,3, 4 (a), 5 (a) | 1 | E TRM A | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 875 gpm |
| g. LPCI Pump B Discharge Flow - Low Bypass | 1,2,3, 4 (a), 5 (a) | 1 | E TRM A | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 1100 gpm |
| h. Manual Initiation | 1,2,3, 4 (a), 5 (a) | 1 per system | C TRM A | SR 3.3.5.1.6 | NA |

(continued)

- a. When associated subsystems are required to be OPERABLE.
b. Also required to initiate the associated Diesel generator.

Table 3.3.5.1-1 (page 2 of 3)
Emergency Core Cooling System Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER FUNCTION | CONDITIONS REFERENCED FROM REQUIRED ACTION A.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT |
|--|--|--------------------------------------|--|--|---------------------|
| 1. LPCI B and LPCI C Shutdown | | | | | |
| a. Reactor Vessel Water Level - High (H) - Low (L) - High | 1,2,3, 4 a, 5 a | 2 (b) | B TRM A | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | -143 inches |
| b. Drywell Pressure - High | 1,2,3 | 2 (b) | B | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 1.68 psid |
| c. LPCI Pump B Start - Time Delay Relay | 1,2,3, 4 a, 5 a | 1 | C TRM A | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.6 | 7.0 seconds |
| d. LPCI Pump C Start - Time Delay Relay | 1,2,3, 4 a, 5 a | 1 | C TRM A | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.6 | 2.0 seconds |
| e. Reactor Vessel Pressure - Low Injection Permissive | 1,2,3 | 4 | C | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 487 psig |
| f. Reactor Vessel Pressure - High | 1 a, 5 a | 4 | B, TRM A | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 487 psig |
| g. LPCI Pump B and LPCI Pump C Discharge Flow - Low Bypass | 1,2,3, 4 a, 5 a | 1 per pump | E TRM A | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 1100 gpm |
| h. Manual Initiation | 1,2,3, 4 a, 5 a | 1 | C TRM A | SR 3.3.5.1.6 | NA |

(continued)

- a. When associated subsystem(s) are required to be OPERABLE.
b. Also required to initiate the associated diesel generator.

Table 3.3.5.1-1 (page 3 of 5)
Emergency Core Cooling System Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER FUNCTION | CONDITIONS REFERENCED FROM REQUIRED ACTION A.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT |
|---|--|--------------------------------------|--|--|------------------|
| 3. High Pressure Core Spray (HPCS) System | | | | | |
| a. Reactor Vessel Water Level - Low | 1,2,3, 4 (a), 5 (a) | 4 (b) | B | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | -43 inches |
| Low Level 2 | | | TRM A | | |
| b. Downcomer Pressure - High | 1,2,3 | 4 (b) | B | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 1.68 psid |
| c. Reactor Vessel Water Level - High | 1,2,3, 4 (a), 5 (a) | 2 | C | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 51 inches |
| High Level 1 | | | TRM A | | |
| d. Condensate Storage Tank Level - Low | 1,2,3, 4 (c), 5 (c) | 2 | D | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 0 inches |
| Low Level 2 | | | TRM A | | |
| e. Suppression Pool Water Level - High | 1,2,3 | 2 | D | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 7 inches |
| f. HPCS Pump Discharge Pressure High Bypass | 1,2,3, 4 (a), 5 (a) | 1 | E | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 300 psig |
| High Pressure | | | TRM A | | |
| g. HPCS System Flow Rate - Low Bypass | 1,2,3, 4 (a), 5 (a) | 1 | E | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 750 gpm |
| Low Flow | | | TRM A | | |
| h. Manual Initiation | 1,2,3, 4 (a), 5 (a) | 1 | C | SR 3.3.5.1.6 | NA |
| | | | TRM A | | |

(continued)

a. When associated subsystems are required to be OPERABLE.

b. Also required to initiate the associated diesel generator.

c. When HPCS is OPERABLE for compliance with Technical Specification LCO 3.5.2, "ECCS - Shutdown," and aligned to the condensate storage tank while tank water level is not within the limit of Technical Specification SR 3.5.2.2.

Table 3.3.5.1-1 (page 4 of 5)
Emergency Core Cooling System Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER FUNCTION | CONDITIONS REFERENCED FROM REQUIRED ACTION A.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT |
|--|--|--------------------------------------|--|--|-------------------------|
| a. Automatic Depressurization System - ADS Trip System A | | | | | |
| 1. Reactor Vessel Water Level - Low Low Low, Level 1 | 1, 2 d, 3 d | 2 | F | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | -143 inches |
| 2. Drywell Pressure - High | 1, 2 d, 3 d | 2 | F | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 1.58 psia |
| 3. ADS Initiation Timer | 1, 2 d, 3 d | 1 | G | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.6 | 106 seconds |
| 4. Reactor Vessel Water Level - Low, Level 3 Confirmatory | 1, 2 d, 3 d | 1 | F | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 9.7 inches |
| 5. LPCP Pump Discharge Pressure - High | 1, 2 d, 3 d | 2 | G | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 145 psig, increasing |
| 6. LPCP Pump A Discharge Pressure - High | 1, 2 d, 3 d | 2 | G | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 135 psig, increasing |
| 7. ADS System Trip - High Pressure - Low Pressure | 1, 2 d, 3 d | 2 | G | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.6 | 5.0 minutes |
| 8. Reactor Isolation | 1, 2 d, 3 d | 1 per system | G | SR 3.3.5.1.6 | NA |

(continued)

d. With reactor steam dome pressure > 100 psig.

Table 3.3.5.1-1 page 5 of 5:
Emergency Core Cooling System Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER FUNCTION | CONDITIONS REFERENCED FROM REQUIRED ACTION A.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT |
|---|---|--------------------------------------|--|--|-------------------------|
| 1. ADS Trip System B | | | | | |
| a. Reactor Vessel Water Level - Low Low Low, Level 1 | 1, 2 d, 3 d | 2 | F | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | -143 inches |
| b. Drywell Pressure - High | 1, 2 d, 3 d | 2 | F | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 1.68 psid |
| c. ADS Initiation Timer | 1, 2 d, 3 d | 1 | G | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.6 | 106 seconds |
| d. Reactor Vessel Water Level - Low, Level 2 Confirmatory | 1, 2 d, 3 d | 1 | F | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 9.7 inches |
| e. LPTI Pumps B & C Discharge Pressure - High | 1, 2 d, 3 d | 1 per pump | G | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6 | 135 psig, increasing |
| f. ADS Eject Timer High Drywell Pressure | 1, 2 d, 3 d | 2 | G | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.6 | 5.0 minutes |
| g. Manual Initiation | 1, 2 d, 3 d | 2 per system | G | SR 3.3.5.1.6 | NA |

1. With reactor steam dome pressure > 100 psig.

TR 3.3.5.1.1 Emergency Core Cooling System (ECCS) ADS Inhibit Instrumentation

TLCO 3.3.5.1.1 Automatic Depressurization System (ADS) Trip System A and B,
Manual Inhibit Function shall be OPERABLE.

APPLICABILITY: MODE 1,
MODE 2 and 3, with reactor steam dome pressure > 100 psig.

ACTIONS

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

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|--|
| A. One or more manual inhibit channel(s) inoperable. | A.1 Declare ADS valves inoperable. | 1 hour from discovery of loss of ADS initiation capability in both trip systems. |
| | AND A.2 Restore channel to OPERABLE status. | 96 hours from discovery of inoperable channel concurrent with HPCS or RCIC inoperable AND 8 days |
| B. Required Action and associated Completion Time of Condition A not met. | B.1 Declare ADS valves inoperable. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.3.5.1.1.1 Perform CHANNEL FUNCTIONAL TEST. | 92 days |
| TSR 3.3.5.1.1.2 Perform LOGIC SYSTEM FUNCTIONAL TEST. | 18 months |

TR 3.3.5.2 Reactor Core Isolation Cooling (RCIC) System Instrumentation

Table 3.3.5.2-1, page 2 of 4
Reactor Core Isolation Cooling System Instrumentation

| FUNCTION | REQUIRED CHANNELS PER FUNCTION | CONDITIONS REFERENCED FROM REQUIRED ACTION A.1 | SR TOLLANCE REQUIREMENTS | NOMINAL SETPOINT |
|--|--------------------------------|--|--|------------------|
| 1. Reactor Vessel Water Level - Low Low, Level 2 | 4 | B | SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4 SR 3.3.5.2.5 | -43 inches |
| 2. Reactor Vessel Water Level - High, Level 2 | 2 | C | SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4 SR 3.3.5.2.5 | 51 inches |
| 3. Condensate Storage Tank Level - Low | 2 | D | SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4 SR 3.3.5.2.5 | 0 inches |
| 4. Suppression Pool Water Level - High | 2 | D | SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4 SR 3.3.5.2.5 | 6.5 inches |
| 5. Main Condensate Tank Level - High | 2 | E | SR 3.3.5.2.5 | NA |

TR 3.3.6.1 Primary Containment and Drywell Isolation Instrumentation

TLCO 3.3.6.1 The primary containment and drywell isolation instrumentation for each Function in Table 3.3.6.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6.1-1.

ACTIONS

-----NOTE-----

Separate Condition entry is allowed for each channel.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|---|
| A. One or more required channels inoperable. | A.1 Place channel in trip. | 12 hours for Functions 2.b, 5.b, 5.d, and 5.e |
| | <u>AND</u> | <u>AND</u> |
| | A.2 Enter Condition L for function 1.1 in MODES 1,2 and 3. | 24 hours for Functions other than Functions 2.b, 5.b, 5.d, and 5.e Immediately |

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|--|
| B. One or more automatic Functions with isolation capability not maintained | B.1 Restore isolation capability | 1 hour |
| C. Required Action and associated Completion Time of Condition A or B not met. | C.1 Enter the Condition referenced in Table 3.3.6.1-1 for the channel. | Immediately |
| D. As required by Required Action C.1 and referenced in Table 3.3.6.1-1. | D.1 Isolate associated main steam line (MSL). <u>OR</u> D.2.1 Be in MODE 3. <u>AND</u> D.2.2 Be in MODE 4. | 12 hours 12 hours 36 hours |
| E. (Not Used) | | |
| F. As required by Required Action C.1 and referenced in Table 3.3.6.1-1. | F.1 Isolate the affected penetration flow path(s). | 1 hour |
| G. (Not Used) | | |

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|-------------------|-----------------|
| H. As required by Required Action C.1 and referenced in Table 3.3.6.1-1. <u>OR</u> Required Action and associated Completion Time of Condition F not met. | H.1 Be in MODE 3. | 12 hours |
| | <u>AND</u> | |
| | H.2 Be in MODE 4. | 36 hours |

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|---|
| I. (not Used) | | |
| J. (not Used) | | |
| K. (not Used) | | |
| L. Entry directed by Condition A for inoperable Main Steam Line Radiation Monitors. | <p>L.1 Enter TLCO 3.0.3.</p> <p><u>AND</u></p> <p>L.2 Place the channel in trip.</p> | <p>Immediately upon discovery of loss of isolation, alarm, or monitoring capability</p> <p>12 hours</p> |

SURVEILLANCE REQUIREMENTS

-----NOTES-----

1. Refer to Table 3.3.6.1-1 to determine which TSRs apply for each Function.
2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains isolation capability.

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.3.6.1.1 Perform CHANNEL CHECK. | 12 hours |
| TSR 3.3.6.1.2 Perform CHANNEL FUNCTIONAL TEST. | 92 days |
| TSR 3.3.6.1.3 (Not Used) | |
| TSR 3.3.6.1.4 (Not Used) | |
| TSR 3.3.6.1.5 Perform CHANNEL CALIBRATION. | 18 months |
| TSR 3.3.6.1.6 Perform LOGIC SYSTEM FUNCTIONAL TEST. | 18 months |

Primary Containment and Drywell Isolation Instrumentation

TR 3.3.6.1

Table 3.3.6.1-1 (page 1 of 3)
Primary Containment and Drywell Isolation Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER TRIV SYSTEM | CONDITIONS REFERENCED FROM REQUIRED ACTION C.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT/ RESPONSE TIME |
|--|--|--|--|--|--|
| 1. Main Steam Line Isolation | | | | | |
| a. Reactor Vessel Water Level - Low Low Low, Level 1 | 1,2,3 | 2 | D | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 SR 3.3.6.1.7 | -143 inches $T_L \leq 1.0^{(g)}$ |
| b. Main Steam Line Pressure - Low | 1 | 2 | E | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 SR 3.3.6.1.7 | 849 psig $T_L \leq 1.0^{(g)}$ |
| c. Main Steam Line Flow - High | 1,2,3 | 1 per MSL | D | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 146 psid, Line A 156 psid, Line B 153 psid, Line C 164 psid, Line D $T_L \leq 0.5^{(g)}$ |
| d. Condenser Vacuum - Low | 1,2,3 1,2,3 | 2 | D | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 8.5 inches Hg vacuum |
| e. Main Steam Tunnel Temperature - High | 1,2,3 | 2 | D | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 | 141°F |
| f. Main Steam Tunnel Area Temperature - High (El. 95ft) | 1,2,3 | 2 | D | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 142°F |
| g. Main Steam Tunnel Area Temperature - High (El. 114ft) | 1,2,3 | 2 | D | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 142°F |

(continued)

a. With any turbine stop valve not closed.

b. d, e, f - Not used this page.

c. $T_L = T_M + T_H$ where:

T_L = Measured total response time of the isolation system instrumentation

T_M = Hydraulic response time of the channel sensor measured upon initial installation

T_H = Measured response time of the logic circuit excluding the channel sensor

The given numerical value is the acceptance criterion for T_L Isolation system instrumentation response time for MSIVs only; no diesel generator delays are assumed.

T_L shall be added to the 5-second isolation time shown in Table 3.6.1.3-1 for the MSIVs to obtain ISOLATION SYSTEM RESPONSE TIME for the MSIVs.

In case the sensor is replaced or refurbished, a hydraulic response time test must be performed to establish revised value for T_L .

Primary Containment and Drywell Isolation Instrumentation

TR 3.3.6.1

Table 3.3.6.1-1 (page 2 of 5)
Primary Containment and Drywell Isolation Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER TRIP SYSTEM | CONDITIONS REFERENCED FROM REQUIRED ACTION C.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT |
|--|--|--|--|--|--|
| Main Steam Line Isolation Radiation | | | | | |
| 1. Main Steam Line Isolation Radiation - High | 1.2.3 | 1 | 2 | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 108°F |
| 2. MBI Moisture Separator and Reheater Area Temperature - High | 1.2.3 | 1 | 0 | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 126°F |
| 3. Manual Initiation | 1.2.3 | 2 | 3 | SR 3.3.6.1.6 | NA |
| 4. DELETED | | | | | |
| 5. Main Steam Line Radiation - High-High | 1.2.3 | 1 (f) | TLCO L | TSR 3.3.6.1.1 TSR 3.3.6.1.2 TSR 3.3.6.1.5 TSR 3.3.6.1.6 | 30x full power background (Allowable Value ≤ 3.6 x full power background) |
| 2. Primary Containment and Drywell Isolation | | | | | |
| 6. Reactor Vessel Water Level - Low Low, Level 1 | 1.2.3 | 1 (b) | H | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | -43 inches |
| 7. Drywell Pressure - High | 1.2.3 | 1 (b) | H | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 1.68 psid |
| 8. Drywell Purge Radiation - High | 1.2.3 | 1 | H | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 1.3 R/hr |
| 9. Manual Initiation | 1.2.3 | 1 (b) | 3 | SR 3.3.6.1.6 | NA |

(continued)

b. Also required to initiate the associated drywell isolation function.

f. Only trips and isolates mechanical vacuum pumps, reactor sample valves, and provides monitoring/alarm.

Primary Containment and Drywell Isolation Instrumentation
TR 3.3.6.1

Table 3.3.6.1-1 (page 3 of 5)
Primary Containment and Drywell Isolation Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER TRIP SYSTEM | CONDITIONS REFERENCED FROM REQUIRED ACTION 2.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT |
|---|--|--|--|--|--|
| 3. Reactor Core Isolation Cooling (RCIC) System Isolation | | | | | |
| a. RCIC Steam Line Flow - High | 1,2,3 | 1 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 127 inches water |
| b. RCIC Steam Line Flow Time Delay | 1,2,3 | 1 | F | SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6 | 3 seconds and ≤ 13 seconds maximum allowable |
| c. RCIC Steam Supply Line Pressure - Low | 1,2,3 | 1 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 60 psig |
| d. RCIC Turbine Exhaust Diaphragm Pressure - High | 1,2,3 | 1 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 10 psig |
| e. RCIC Equipment Room Ambient Temperature - High | 1,2,3 | 1 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 | 182°F |
| f. Main Steam Line Tunnel Ambient Temperature - High | 1,2,3 | 1 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 | 141°F |
| g. Main Steam Line Tunnel Temperature Timer | 1,2,3 | 1 | F | SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6 | NA |
| h. RHR Equipment Room Ambient Temperature - High | 1,2,3 | 1 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 | 117°F |
| i. RCIC/RHR Steam Line Flow - High | 1,2,3 | 1 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 60.7 inches water |
| j. Drywell Pressure - High | 1,2,3 | 1 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 1.68 psid |
| k. Manual Initiation | 1,2,3 | 1 | G | SR 3.3.6.1.6 | NA |

(continued)

Primary Containment and Drywell Isolation Instrumentation

TR 3.3.6.1

Table 3.3.6.1-1 (page 4 of 5)
Primary Containment and Drywell Isolation Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER TRIP SYSTEM | CONDITIONS REFERENCED FROM REQUIRED ACTION C.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT |
|--|--|---|--|--|---------------------|
| 1. Reactor Vessel Water Level - RWCU System Isolation | | | | | |
| a. Differential Flow - High | 1,2,3 | 1 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 | 55 gpm |
| b. Differential Flow - Timer | 1,2,3 | 1 | F | SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6 | 45 seconds |
| c. RWCU Heat Exchanger Equipment Room Temperature - High | 1,2,3 | 1 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 | 104.5°F |
| d. RWCU Pump Rooms Temperature - High | 1,2,3 | 1 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 | 165°F |
| e. RWCU Valve Nest Room Temperature - High | 1,2,3 | 1 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 | 110°F |
| f. RWCU Demineralizer Rooms Temperature - High | 1,2,3 | 1 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 | 110°F |
| g. RWCU Purge Tank Room Temperature - High | 1,2,3 | 1 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 | 110°F |
| h. Main Duct Line Tunnel Ambient Temperature - High | 1,2,3 | 1 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 | 141°F |
| i. Reactor Vessel Water Level - Low Low, Level 2 | 1,2,3 | 2 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | - 43 inches |
| j. Standby Liquid Control System Initiation | 1,2 | 1 | I | SR 3.3.6.1.6 | NA |
| k. Manual Initiation | 1,2,3 | 2 | G | SR 3.3.6.1.6 | NA |

(continued)

Primary Containment and Drywell Isolation Instrumentation
TR 3.3.6.1

Table 3.3.6.1-1 (page 5 of 5)
Primary Containment and Drywell Isolation Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER TRIP SYSTEM | CONDITIONS REFERENCED FROM REQUIRED ACTION C.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT |
|--|--|---|--|--|---------------------|
| 1. RHR System Isolation | | | | | |
| a. RHR Equipment Room Ambient Temperature - High | 1,2,3 | 2 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 | 117°F |
| b. Reactor Vessel Water Level - Low, Level 3 | 1,2,3,4 | 2 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 9.7 inches |
| c. Reactor Vessel Water Level - Low, Level 2 | 1,2,3,4,5 | 2 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 9.7 inches |
| d. Reactor Vessel Water Level - Low, Low, Low, Level 1 | 1,2,3 | 2 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | -143 inches |
| e. Reactor Steam Dome Pressure - High | 1,2,3 | 2 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 135 psig |
| f. Drywell Pressure - High | 1,2,3 | 2 | F | SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 | 1.68 psid |
| g. Manual Initiation | 1,2,3 | 2 | G | SR 3.3.6.1.6 | NA |

1. With reactor steam dome pressure greater than or equal to the RHR cut-in permissive pressure.
2. With reactor steam dome pressure less than the RHR cut-in permissive pressure.
3. Only one trip system required in MODES 4 and 5 with RHR Shutdown Cooling System integrity maintained.

TABLE 3.3.6.1-2 (page 1 of 3)
Primary Containment and Drywell Isolation Instrumentation

| TRIP FUNCTION | VALVE GROUP OPERATED BY SIGNAL * |
|---|--|
| 1. <u>MAIN STEAM LINE ISOLATION</u> | |
| a. Reactor Vessel Water Level - Low Low Low Level 1 | 6 |
| b. Main Steam Line Pressure - Low | 6 |
| c. Main Steam Line Flow - High | 6 |
| d. Condenser Vacuum - Low | 6 |
| e. Main Steam Tunnel Temperature - High | 6 |
| f. Main Steam Tunnel Area Temperature - High (El. 95 ft) | 6 |
| g. Main Steam Tunnel Area Temperature - High (El. 114 ft) | 6 |
| h. Main Steam Line Turbine Shield Wall Temperature - High | 6 |
| i. MSL Moisture Separator and Reheater Area Temperature - High | 6 |
| j. Manual Initiation | 6 |
| k. DELETED | |
| l. Main Steam Line Radiation - High | 9,(a) |
| 2. <u>PRIMARY CONTAINMENT ISOLATION</u> | |
| a. Reactor Vessel Water Level - Low Low Level 2 | 1, 7, 8, 9 15, 16 |
| b. Drywell Pressure - High | 1, 3, 8 |
| c. Containment Purge Isolation Radiation - High | 8 |
| d. Manual Initiation | 1, 7, 8, 15, 16 |

(continued)

(a) Trip and isolate the mechanical vacuum pumps and provide alarm/indication.

TABLE 3.3.6.1-2 (page 2 of 3)
Primary Containment and Drywell Isolation Instrumentation

| TRIP FUNCTION | VALVE GROUP OPERATED BY SIGNAL * |
|--|--|
| 3. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION | |
| a. RCIC Steam Line Flow - High | 2 |
| b. RCIC Steam Line Flow Time Delay | 2 |
| c. RCIC Steam Supply Line Pressure - Low | 2 |
| d. RCIC Turbine Exhaust Diaphragm Pressure - High | 2 |
| e. RCIC Equipment Room Ambient Temperature - High | 2 |
| f. Main Steam Line Tunnel Ambient Temperature - High | 2 |
| g. Main Steam Line Tunnel Temperature Timer | 2 |
| h. RHR Equipment Room Ambient Temperature - High | 2 |
| i. RHR/RCIC Steam Line Flow - High | 2 |
| j. Drywell Pressure - High | 3 |
| k. Manual Initiation | 2 |

(continued)

Primary Containment and Drywell Isolation Instrumentation
TR 3.3.6.1

TABLE 3.3.6.1-2 (page 3 of 3)
Primary Containment and Drywell Isolation Instrumentation

| TRIP FUNCTION | VALVE GROUP OPERATED BY SIGNAL * |
|---|--|
| 4. REACTOR WATER CLEANUP SYSTEM ISOLATION | |
| a. Diff Flow- High | 7, 15, 16 |
| b. Diff Flow Timer | 7, 15, 16 |
| c. RWCU Heat Exchanger Equipment Room Temperature - High | 7, 15, 16 |
| d. RWCU pump Rooms Temperature - High | 7, 15, 16 |
| e. RWCU Valve Nest Room Temperature - High | 7, 15, 16 |
| f. RWCU Demineralizer Rooms Temperature - High | 7, 15, 16 |
| g. RWCU Receiving Tank Room Temperature - High | 7, 15, 16 |
| h. Main Steam Line Tunnel Ambient Temperature - High | 7, 15, 16 |
| i. Reactor Vessel Water Level-Low Low Level 2 | 7, 15, 16 |
| j. SLCS Initiation | 7, 16 |
| k. Manual Initiation | 7, 15, 16 |
| 5. RHR SYSTEM ISOLATION | |
| a. RHR Equipment Room Ambient Temperature - High | 5, 14 |
| b. Reactor Vessel Water Level - Low Level 3 | 5, 14 |
| c. Reactor Vessel Water Level - Low Low Low Level 1 | 10 |
| d. Reactor Steam Dome Pressure - High | 5 |
| e. Drywell Pressure - High | 10, 14 |
| f. Manual Initiation | 5, 14 |

* The valve groups listed are designated in Table 3.6.1.3-1 and 3.6.5.3-1.

TR 3.3.6.2 Secondary Containment Isolation Instrumentation

TLCO 3.3.6.2 The secondary containment isolation instrumentation for each Function 6 in Table 3.3.6.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6.2-1.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---------------------------------|--|-----------------|
| A. Required channel inoperable. | A.1 Initiate and maintain Annulus Mixing System with the reactor building annulus exhaust to at least one operating Standby Gas Treatment train. | 1 hour |

SURVEILLANCE REQUIREMENTS

-----NOTES-----

1. Refer to Table 3.3.6.2-1 to determine which TSRs apply for the Secondary Containment Isolation Function.
 2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains secondary containment isolation capability.
-

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.3.6.2.1 Perform CHANNEL CHECK. | 12 hours |
| TSR 3.3.6.2.2 Perform CHANNEL FUNCTIONAL TEST. | 92 days |
| TSR 3.3.6.2.3 (Not Used) | |
| TSR 3.3.6.2.4 Perform CHANNEL CALIBRATION. | 18 months |
| TSR 3.3.6.2.5 Perform LOGIC SYSTEM FUNCTIONAL TEST. | 18 months |

Secondary Containment Isolation Instrumentation
TR 3.3.6.2

Table 3.3.6.2-1
Secondary Containment Isolation Instrumentation

| FUNCTION | APPLICABLE MODES AND OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER TRIP SYSTEM | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT |
|---|---|--|--|---|
| 1. Reactor Bldg. Asst. Drywell Pressure - High | 1, 2, 3 | 2 | SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.3 SR 3.3.6.2.4 SR 3.3.6.2.5 | -43 inches |
| 2. Drywell Pressure - High | 1, 2, 3 | 2 | SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.3 SR 3.3.6.2.4 SR 3.3.6.2.5 | 1.68 psid |
| 3. Fuel Building Ventilation Exhaust Radiation - High 1RMS*RESA | (a) | 1 | SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.5 | $1.82 \times 10^3 \mu\text{Ci/sec}$ |
| 4. Fuel Building Ventilation Exhaust Radiation - High 1RMS*RESB | (a) | 1 | SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.5 | $5.29 \times 10^{-4} \mu\text{Ci/cc}$ |
| 5. Manual Initiation | 1, 2, 3, (a) | 2 | SR 3.3.6.2.5 | NA |
| 6. Reactor Building Annular Ventilation Exhaust Radiation - High | 1, 2, 3 | 1 | TSR 3.3.6.2.1 TSR 3.3.6.2.2 TSR 3.3.6.2.4 TSR 3.3.6.2.5 | $4.32 \times 10^{-5} \mu\text{Ci/cc}$ (Allowable Value $\leq 5.19 \times 10^{-5} \mu\text{Ci/cc}$) |

(a) - Number of irradiated fuel assemblies in the fuel building for fuel building isolation.

TABLE 3.3.6.2-2
Secondary Containment Isolation Instrumentation

| TRIP FUNCTION | VALVE GROUP OPERATED BY SIGNAL * |
|---|--|
| 1. Reactor Vessel Water Level- Low Low Level 2 | 11, 12, 13 ^{(a)(b)(c)} |
| 2. Drywell Pressure - High | 11, 12, 13 ^{(a)(b)(c)} |
| 3. Fuel Building Ventilation Exhaust Radiation - High | 13 ^{(a)(c)} |
| 4. Fuel Building Ventilation Exhaust Radiation - High | 13 ^{(a)(c)} |
| 5. Manual Initiation | 11, 12, 13 ^{(a)(b)(c)} |
| 6. Reactor Building Annulus Ventilation Exhaust Radiation - High | 12 ^{(a)(b)} |

* The valve groups listed are designated in Table 3.6.4.2-1.

(a) Also actuates secondary containment ventilation isolation dampers.

(b) Also starts Standby Gas Treatment and
Annulus Mixing Systems.

(c) Also starts Fuel Building Exhaust Filter Trains A and B

TR 3.3.6.3 Containment Unit Cooler System Instrumentation

Table 3.3.6.3-1
Containment Unit Cooler System Instrumentation

| FUNCTION | REQUIRED CHANNELS PER TRIP SYSTEM | CONDITIONS REFERENCED FROM REQUIRED ACTION A.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT |
|--|-----------------------------------|--|--|------------------------|
| 1. Drywell Pressure - High | 0 | B | SR 3.3.6.3.1 SR 3.3.6.3.2 SR 3.3.6.3.3 SR 3.3.6.3.4 SR 3.3.6.3.5 | 1.68 psid |
| 2. Containment-to-Annulus Differential Pressure - High | 3 | B | SR 3.3.6.3.1 SR 3.3.6.3.2 SR 3.3.6.3.3 SR 3.3.6.3.4 SR 3.3.6.3.5 | -11.98 inches of water |
| 3. Reactor Vessel Water Level - Low Low Low, Level 1 | 2 | B | SR 3.3.6.3.1 SR 3.3.6.3.2 SR 3.3.6.3.3 SR 3.3.6.3.4 SR 3.3.6.3.5 | -143 inches |
| 4. System A and System B Timers | 1 | C | SR 3.3.6.3.2 SR 3.3.6.3.4 SR 3.3.6.3.5 | 600 seconds |

TR 3.3.6.4 Relief and Low-Low Set (LLS) Instrumentation

Table 3.3.6.4-1
Relief and Low - Low set Instrumentation

| Valve | Relief Setpoint ¹ | Relief pressure switch | Safety setpoint ^{1, 2} | low - low set lift setpoint ^{1, 2} | low - low set reclose setpoint ^{1, 2} |
|-----------|---------------------------------|------------------------------|------------------------------------|---|--|
| FD41A | 1123 | N670 | 1165 | | |
| FD41B | 1113 | N669 | 1180 | | |
| FD41B ADS | 1123 | N670 | 1165 | | |
| FD51B | 1113 | N669, N618 | 1190 | 1113 | 946 |
| FD41F ADS | 1123 | N670 | 1165 | | |
| FD41F | 1113 | N669, N618 | 1180 | 1113 | 946 |
| FD41F ADS | 1123 | N670 | 1165 | | |
| FD11F | 1113 | N669, N617 | 1190 | 1073 | 936 |
| FD41D ADS | 1113 | N669 | 1180 | | |
| FD51D ADS | 1113 | N669, N618 | 1190 | 1113 | 946 |
| FD41E | 1123 | N670 | 1165 | | |
| FD41E | 1113 | N669 | 1180 | | |
| FD41E ADS | 1123 | N670 | 1165 | | |
| FD11E | 1103 | N668, N616 | 1190 | 1033 | 926 |
| FD41E | 1123 | N670 | 1165 | | |
| FD41A ADS | 1113 | N669 | 1180 | | |

(1) The lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures.

(2) The allowable values shall be within ± 15 psig of listed setpoints.

(3) The allowable values shall be within $+ 0$, and $- 2\%$ of listed setpoints.

TR 3.3.6.4.1 Relief and Low-Low Set (LLS) Acoustic Monitor Instrumentation

TICO 3.3.6.4.1 The acoustic monitor for each required OPERABLE S/RV tailpipe shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------|
| A. One or more required S/RV acoustic monitors inoperable. | A.1 Restore the inoperable monitor(s) to OPERABLE status. | 7 days |
| B. Required Action and associated Completion Time for Condition A not met. | A.1 Be in MODE 3. | 12 hours |
| | AND A.2 Be in MODE 4. | 36 hours |

SURVEILLANCE REQUIREMENTS

-----NOTE-----

When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours.

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.3.6.4.1.1 Perform CHANNEL FUNCTIONAL TEST. | 92 days |
| TSR 3.3.6.4.1.2 (Not Used) | |
| TSR 3.3.6.4.1.3 -----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----- Perform CHANNEL CALIBRATION. | 18 months |

TR 3.3.7.1 Control Room Fresh Air (CRFA) System Instrumentation

Table 3.3.7.1-1)
Control Room Fresh Air System Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER TRIP SYSTEM | CONDITIONS REFERENCED FROM REQUIRED ACTION A.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT |
|--|--|--|--|--|--|
| 1. Reactor Vessel Water Level - Low Low, Level 2 | 1,2,3 | 1 | B | SR 3.3.7.1.1 SR 3.3.7.1.2 SR 3.3.7.1.3 SR 3.3.7.1.4 SR 3.3.7.1.5 | -43 inches |
| 2. Drywell Pressure - High | 1,2,3 | 2 | C | SR 3.3.7.1.1 SR 3.3.7.1.2 SR 3.3.7.1.3 SR 3.3.7.1.4 SR 3.3.7.1.5 | 1.68 psid |
| 3. Control Room Ventilation Radiation Monitors providing Initiation | 1,2,3 (a), (b) | 1 | D | SR 3.3.7.1.1 SR 3.3.7.1.2 SR 3.3.7.1.4 SR 3.3.7.1.5 | 0.84×10^{-5} $\mu\text{Ci/cc}$ |

a. During operations with a potential for draining the reactor vessel.

b. During CORE ALTERATIONS and during movement of irradiated fuel assemblies in the primary or secondary containment.

TLCO 3.3.7.1 The Control room ventilation remote intake radiation monitor alarm function shall be OPERABLE with its setpoint $\leq 0.97 \times 10^{-5} \mu\text{Ci/cc}$

APPLICABILITY: MODES 1, 2, 3
 During movement of irradiated fuel assemblies in the primary containment or fuel building

ACTIONS

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

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---------------------------------------|--|-------------------|
| A. Required alarm channel inoperable. | A.1 Perform area surveys of the monitored area with portable monitoring instrumentation. | once per 24 hours |

SURVEILLANCE REQUIREMENTS

-----NOTE-----
The TSRs apply for the Remote Intake Control Room Vent Rad Monitor only.

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.3.7.1.1 Perform CHANNEL CHECK. | 12 hours |
| TSR 3.3.7.1.2 Perform CHANNEL FUNCTIONAL TEST. | 92 days |
| TSR 3.3.7.1.3 (Not Used) | |
| TSR 3.3.7.1.4 Perform CHANNEL CALIBRATION. | 18 months |
| TSR 3.3.7.1.5 (Not Used) | |

TR 3.3.7.2 Turbine Overspeed Protection System

TLCO 3.3.7.2 At least one turbine overspeed protection system shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each high pressure or low pressure steam lead.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---------------------------------|
| <p>A. One stop valve or control valve per high pressure steam lead inoperable.</p> <p><u>OR</u></p> <p>One turbine intercept valve or turbine intermediate stop valve per low pressure steam lead inoperable.</p> | <p>A.1 Restore the valve to OPERABLE.</p> <p><u>OR</u></p> <p>A.2 Close one valve in the affected steam lead.</p> | <p>72 hours</p> <p>72 hours</p> |
| <p>B. Required Action and associated Completion Time of Condition A not met.</p> <p><u>OR</u></p> <p>Required turbine overspeed protection system inoperable for reasons other than Condition A.</p> | <p>B.1 Isolate the turbine from the steam supply.</p> | <p>6 hours</p> |

SURVEILLANCE REQUIREMENTS

-----NOTE-----
The provisions of TSR 3.0.4 are not applicable.

| SURVEILLANCE | | FREQUENCY |
|---------------|---|-----------|
| TSR 3.3.7.2.1 | (Not used) | |
| TSR 3.3.7.2.2 | <p>Cycle each of the following valves through at least one complete cycle from the running position:</p> <ol style="list-style-type: none"> 1) Four high pressure turbine stop valves, 2) Four high pressure turbine control valves, 3) Four low pressure turbine intermediate stop valves, and 4) Four low pressure turbine intercept valves. | 92 days |
| TSR 3.3.7.2.3 | Perform a CHANNEL CALIBRATION of the turbine overspeed protection system. | 18 months |
| TSR 3.3.7.2.4 | <p>Disassemble at least one of each type of the following valves and perform a visual and surface inspection of valve seats, disks and stems and verify no unacceptable flaws. If unacceptable flaws are found, all other valves of that type shall be inspected.</p> <ol style="list-style-type: none"> 1) Four high pressure turbine stop valves, 2) Four high pressure turbine control valves, 3) Four low pressure turbine intermediate stop valves, and 4) Four low pressure turbine intercept valves. | 40 months |

TR 3.3.7.3 Feedwater/Main Turbine Level 8 Trip Instrumentation

TLCO 3.3.7.3 The feedwater/main turbine trip Function shall have 3 channels of reactor vessel water level - high, level 8, instrumentation OPERABLE.

APPLICABILITY: Mode 1

ACTIONS

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

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-----------------|
| A. One or more required channel(s) inoperable. | A.1 Restore channel(s) to OPERABLE status. | 7 days |
| B. The feedwater/main turbine trip Function not maintained. | B.1 Restore the feedwater/main turbine trip capability. | 72 hours |
| C. Required Action and associated Completion Time not met. | C.1 Be in MODE 2. | 6 hours |

SURVEILLANCE REQUIREMENTS

-----NOTE-----
When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided that the trip Function capability is maintained.

| SURVEILLANCE | | FREQUENCY |
|---------------|--|-----------|
| TSR 3.3.7.3.1 | Perform a CHANNEL CHECK. | 24 hours |
| TSR 3.3.7.3.2 | Perform a CHANNEL FUNCTIONAL TEST. | 92 days |
| TSR 3.3.7.3.3 | Perform a CHANNEL CALIBRATION. The Allowable Value shall be ≤ 52.5 inches. The Nominal Setpoint is 51 inches. | 18 months |
| TSR 3.3.7.3.4 | <p>-----NOTE-----</p> <p>The actuated device shall also be tested as part of the LSFT or by separate overlapping system functional test.</p> <p>-----</p> <p>Perform a LOGIC SYSTEM FUNCTIONAL TEST and simulated automatic operation of all channels.</p> | 18 months |

TR 3.3.7.4 Fire Detection Instrumentation

TLCO 3.3.7.4 The fire detection instrumentation for each fire detection zone shown in Table 3.3.7.4-1 shall be OPERABLE.

APPLICABILITY: When equipment protected by the fire detection instrument is required to be OPERABLE.

ACTIONS

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

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|---|
| A. One or more required Function A fire detection instrument(s) inoperable. | A.1 Restore the instrument(s) to OPERABLE | 14 days |
| <p>B. Required Action and associated Completion Time for Condition A not met.</p> <p><u>OR</u></p> <p>More than one-half the required Function A fire detection instruments in any fire zone inoperable.</p> <p><u>OR</u></p> <p>Any required Function B fire detection instrument inoperable.</p> <p><u>OR</u></p> <p>Any two or more adjacent required instruments inoperable.</p> | <p>B.1 -----NOTE----- Only applicable to instrument(s) located outside the containment. ----- Establish a hourly fire watch patrol to inspect the zone(s) with required instrument(s) inoperable.</p> <p><u>AND</u></p> <p>-----NOTE----- Only applicable to instrument(s) located inside the containment. -----</p> <p>B.2.1 Inspect the affected primary containment zone.</p> <p><u>OR</u></p> <p>B.2.2 Monitor the containment or drywell air temperature at the locations monitored in SR 3.6.1.5.1 and SR 3.6.5.5.1</p> | <p>1 hour.</p> <p>Once per 8 hours</p> <p>Once per 1 hour</p> |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-----------------|
| <p>TSR 3.3.7.4.1</p> <p>-----NOTE----- Only required during cold shutdowns exceeding 24 hours for instruments not accessible during unit operation ----- Perform a CHANNEL FUNCTIONAL TEST</p> | <p>6 months</p> |
| <p>TSR 3.3.7.4.2</p> <p>The NFPA Standard 72D supervised circuits supervision associated with the detector alarms of each required fire detection instruments shall be demonstrated OPERABLE.</p> | <p>6 months</p> |

TABLE 3.3.7.4-1 (Page 1 of 5)
FIRE DETECTION INSTRUMENTATION

| INSTRUMENT LOCATION | TOTAL INSTRUMENTS OPERABLE* | | |
|--|-----------------------------|----------------|----------------|
| | HEAT (x/y) | FLAME (x/y) | SMOKE (x/y) |
| I. CONTROL BUILDING ZONE | | | |
| SD-1 HVAC ROOM, EL 115'0" & 116'0" | | | 6/0 |
| SD-2 HPCS SWGR, EL 115'0" & 116'0" | | | 3/0 |
| SD-3 BATTERY ROOMS (3) & DC EQUIP RMS, EL 115'0" & 116'0" | | | 8/0 |
| SD-4 HVAC ROOM, EL 98'0" | | | 6/0 |
| SD-5 STBY SWGR ROOM B, EL 98'0" | | | 3/0 |
| SD-6 STBY SWGR ROOM A, EL 98'0" | | | 3/0 |
| SD-15 HVAC ROOM 1A, EL 70'0" | | | 2/0 |
| SD-16 HVAC ROOM 1B, EL 70'0" | | | 2/0 |
| SD-17 CABLE VAULT, EL 70'0" | | | 0/3 |
| SD-18 CABLE VAULT, EL 70'0" | | | 0/4 |
| SD-19 CABLE VAULT, EL 70'0" | | | 0/9 |
| SD-20 CABLE CHASES, EL 70'0" | | | 17/0 |
| SD-50 CABLE CHASES, EL 98'0" | | | 9/0 |
| SD-54 CABLE CHASES, EL 116'0" | | | 10/0 |
| SD-60 125 VDC SWGR & BATT CHGR, EL 115'0" & 116'0" | | | 10/0 |
| SD-61 GENERAL AREA, EL 98'0" | | | 8/0 |
| SD-125 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 10/0 |
| SD-126 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 13/0 |
| SD-127 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 11/0 |
| SD-128 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 9/0 |
| SD-129 PGCC PANEL MODULE, EL 136'0" | 0/9 | | 12/0 |
| SD-130 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 11/0 |
| SD-131 PGCC PANEL MODULE, EL 136'0" | 0/9 | | 17/0 |
| SD-132 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 17/0 |
| SD-133 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 13/0 |
| SD-134 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 12/0 |
| SD-135 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 9/0 |
| SD-136 PGCC PANEL MODULE, EL 136'0" | 0/9 | | 9/0 |
| SD-137 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 8/0 |
| SD-138 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 10/0 |
| SD-139 PGCC PANEL MODULE, EL 136'0" | 0/12 | | 12/0 |
| SD-140 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 14/0 |

(continued)

* (x/y): x is number of Function A (early warning fire detection and notification only) instruments.
y is number of Function B (actuation of fire suppression systems and early warning fire detection) instruments.

TABLE 3.3.7.4-1 (Page 2 of 5)
FIRE DETECTION INSTRUMENTATION

| INSTRUMENT LOCATION | TOTAL INSTRUMENTS OPERABLE* | | |
|--|-----------------------------|----------------|----------------|
| | HEAT (x/y) | FLAME (x/y) | SMOKE (x/y) |
| I. CONTROL BUILDING ZONE (continued) | | | |
| SD-141 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 13/0 |
| SD-142 PCCC PANEL MODULE, EL 136'0" | 0/9 | | 16/0 |
| SD-143 PGCC PANEL MOOULE, EL 136'0" | 0/9 | | 17/0 |
| SD-144 PGCC PANEL MODULE, EL 136'0" | 0/9 | | 17/0 |
| SD-145 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 8/0 |
| SD-146 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 8/0 |
| SD-147 PGCC PANEL MODULE, EL 136'0" | 0/12 | | 14/0 |
| SD-148 PGCC PANEL MODULE, EL 136'0" | 0/12 | | 18/0 |
| SD-149 PGCC PANEL MODULE, EL 136'0" | 0/10 | | 14/0 |
| SD-150 PGCC PANEL MODULE, EL 136'0" | 0/9 | | 15/0 |
| SD-151 PGCC PANEL MODULE, EL 136'0" | 0/10 | | 10/0 |
| SD-158 PGCC PANEL MODULE, EL 136'0" | 0/8 | | 8/0 |
| SD-152 NON PANEL MODULE AREA NORTH, EL 135'0" | | | 10/0 |
| SD-153 NON PANEL AREA SOUTH, EL 135'0" | | | 10/0 |
| SD-154 GENERAL AREA, EL 136'0" | | | 84/0 |
| SD-162 REMOTE SHUTDOWN PANEL DIV I, EL 98'0" | | | 1/0 |
| SD-163 REMOTE SHUTDOWN PANEL DIV II, EL 98'0" | | | 1/0 |
| FD-26 CHARCOAL FILTER 1HVC*FLT3B, EL 115'0" | 1/0 | | |
| FD-27 CHARCOAL FILTER 1HVC*FLT3A, EL 115'0" | 1/0 | | |
| II. REACTOR BUILDING ZONE | | | |
| SD-57 #CONTAINMENT AREA, EL 114'0" | | | 13/0 |
| SD-104 #CONTAINMENT AREA, EL 186'3" | | | 17/0 |
| SD-117 #CONTAINMENT AREA, EL 162'3" | | | 7/0 |
| SD-119 #CONTAINMENT AREA, EL 141'0" | | | 13/0 |
| FD-13 #RECIRC PUMPS - DRYWELL, EL 70'0" & 98'0" | 2/0 | | |

(continued)

- * (x/y): x is number of Function A (early warning fire detection and notification only) instruments.
y is number of Function B (actuation of fire suppression systems and early warning fire detection) instruments.

- # The fire detection instruments located within the Containment are not required to be OPERABLE during the performance of Type A Containment Leakage Rate Tests.

TABLE 3.3.7.4-1 (Page 3 of 5)
FIRE DETECTION INSTRUMENTATION

| INSTRUMENT LOCATION | TOTAL INSTRUMENTS OPERABLE* | | |
|--|-----------------------------|----------------|----------------|
| | HEAT (x/y) | FLAME (x/y) | SMOKE (x/y) |
| <u>III. AUXILIARY BUILDING ZONE</u> | | | |
| SD-28 HFCS PUMP ROOM, EL 70'0" | | | 1/0 |
| SD-29 R4R PUMP ROOM B, EL 70'0" | | | 2/0 |
| SD-30 RHR PUMP ROOM C, EL 70'0" | | | 2/0 |
| SD-31 RHR PUMP ROOM A, EL 70'0" | | | 2/0 |
| SD-32 LPCS PUMP ROOM, EL 70'0" | | | 1/0 |
| SD-43 GENERAL AREA WEST, EL 95'0" | | | 2/0 |
| SD-49 GENERAL AREA, EL 141'0" | | | 9/0 |
| SD-52 GENERAL AREA EAST, EL 114'0" | | | 5/0 |
| SD-53 GENERAL AREA WEST, EL 114'0" | | | 5/0 |
| SD-55 PASS ROOM, EL 114'0" | | | 1/0 |
| SD-96 RCIC PUMP ROOM, EL 70'0" | | | 0/2 |
| SD-97 GENERAL AREA, EL 70'0" | | | 4/0 |
| SD-98 GENERAL AREA EAST, EL 95'9" | | | 2/0 |
| SD-99 GENERAL AREA WEST, EL 95'9" | | | 2/0 |
| SD-100 GENERAL AREA WEST, EL 95'9" | | | 3/0 |
| SD-101 STANDBY GAS TREATMENT ROOM "B", EL 141'0" | | | 4/0 |
| SD-103 STANDBY GAS TREATMENT ROOM "A", EL 141'0" | | | 4/0 |
| SD-106 ANNULUS MIXING FAN AREA, EL 171'0" | | | 3/0 |
| FD-33 STANDBY GAS TREATMENT FILTER "B", EL 141'0" | 1/0 | | |
| FD-34 STANDBY GAS TREATMENT FILTER "A", EL 141'0" | 1/0 | | |
| SD-164 WATER CURTAIN, EL 70'0" | | | 0/2 |
| SD-165 WATER CURTAIN, EL 141'0" | | | 0/4 |
| <u>IV. FUEL BUILDING ZONE</u> | | | |
| SD-33 FUEL POOL COOLING PUMP AREAS, EL 70'0" | | | 2/0 |
| SD-44 1ENS*SWG 3A & 4A AREA, EL 95'0" | | | 7/0 |
| SD-59 GENERAL AREA, EL 113'0" | | | 13/0 |
| SD-91 GENERAL AREA, EL 70'0" | | | 7/0 |
| SD-94 NEW FUEL RECEIVING AREA, EL 95'0" | | | 2/0 |

(continued)

- * (x/y): x is number of Function A (early warning fire detection and notification only) instruments.
y is number of Function B (actuation of fire suppression systems and early warning fire detection) instruments.

TABLE 3.3.7.4-1 (Page 4 of 5)
FIRE DETECTION INSTRUMENTATION

| INSTRUMENT LOCATION | TOTAL INSTRUMENTS OPERABLE* | | |
|--|-----------------------------|----------------|----------------|
| | HEAT (x/y) | FLAME (x/y) | SMOKE (x/y) |
| IV. <u>FUEL BUILDING ZONE</u> (continued) | | | |
| SD-110 FUEL POOL PURIFICATION & BACKWASH PUMP AREAS, EL 70'0" | | | 3/0 |
| SD-111 FUEL POOL COOLER (A & B) AREAS, EL 95'0" | | | 2/0 |
| SD-121 CHARCOAL FILTER "A" ROOM, EL 148'0" | | | 2/0 |
| SD-123 CHARCOAL FILTER "B" ROOM, EL 148'0" | | | 2/0 |
| SD-124 IRMS-CABLOI AREA, EL 148'0" | | | 4/0 |
| SD-125 GENERAL AREA, EL 113'0" | | | 4/0 |
| FD-35 CHARCOAL FILTER "A" ROOM, EL 148'0" | 1/0 | | |
| FD-36 CHARCOAL FILTER "B" ROOM, EL 148'0" | 1/0 | | |
| V. <u>ELECTRICAL TUNNELS ZONE</u> | | | |
| SD-79 GENERAL AREA, EL 67'6" | | | 0/6 |
| SD-80 GENERAL AREA, EL 67'6" | | | 0/6 |
| SD-81 GENERAL AREA, EL 67'6" | | | 0/11 |
| SD-82 GENERAL AREA, EL 67'6" | | | 0/12 |
| SD-83 GENERAL AREA, EL 70'0" | | | 0/12 |
| VI. <u>PIPE TUNNEL ZONE</u> | | | |
| SD-86 GENERAL AREA, EL 70'0" | | | 0/18 |
| SD-87 GENERAL AREA, EL 67'6" | | | 0/7 |
| SD-88 GENERAL AREA, EL 67'6" | | | 0/10 |
| SD-89 GENERAL AREA, EL 67'6" | | | 0/17 |
| VII. <u>DIESEL GENERATOR BUILDING ZONE</u> | | | |
| SD-105 GENERAL AREA, EL 98'0" | | | 3/0 |
| FD-16 DIESEL ROOM DIV II, EL 98'0" | 0/4 | | |
| FD-17 DIESEL ROOM DIV III, EL 98'0" | 0/4 | | |
| FD-18 DIESEL ROOM DIV I, EL 98'0" | 0/4 | | |

(continued)

* (x/y): x is number of Function A (early warning fire detection and notification only) instruments.
y is number of Function B (actuation of fire suppression systems and early warning fire detection) instruments.

Table 3.3.7.4-1 (Page 5 of 5)
FIRE DETECTION INSTRUMENTATION

| INSTRUMENT LOCATION | TOTAL INSTRUMENTS OPERABLE* | | |
|--|-----------------------------|----------------|----------------|
| | HEAT (x/y) | FLAME (x/y) | SMOKE (x/y) |
| VIII. <u>STANDBY SERVICE WATER</u> <u>PUMP HOUSE ZONE</u> | | | |
| SD-72 STANDBY SERVICE WATER PUMP AREA | | | 4/0 |
| SD-73 STANDBY SERVICE WATER PUMP AREA | | | 4/0 |

- * (x/y): x is number of Function A (early warning fire detection and notification only) instruments.
y is number of Function B (actuation of fire suppression systems and early warning fire detection) instruments.

TR 3.3.7.5 Seismic Monitoring Instrumentation

TLCO 3.3.7.5 The seismic monitoring instrumentation shown in Table 3.3.7.5-1 shall be OPERABLE.

APPLICABILITY: At all times.

ACTIONS

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

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------|
| A. One or more required seismic monitoring instruments inoperable. | A.1 Restore required seismic monitoring instruments to OPERABLE. | 30 days |
| B. Required Action A.1 and associated Completion Time not met. | B.1 Prepare and submit a Special Report to the Commission, pursuant to Technical Requirement 5.6.9 outlining the cause of the malfunction and the plans for restoring the instrument(s) to OPERABLE status. | 10 Days |

SURVEILLANCE REQUIREMENTS

-----NOTE-----
Refer to Table 3.3.7.5-1 to determine which TSRs apply for each instrument

| SURVEILLANCE | | FREQUENCY |
|---------------|--|---|
| TSR 3.3.7.5.1 | Perform a CHANNEL CHECK. | 31 days |
| TSR 3.3.7.5.2 | Perform a CHANNEL FUNCTIONAL TEST. | 6 months |
| TSR 3.3.7.5.3 | Perform a CHANNEL CALIBRATION. | 18 months |
| TSR 3.3.7.5.4 | <p>-----NOTE----- Not required to be performed until instrument is actuated by a seismic event ≥ 0.01 g. -----</p> <p>Restore to OPERABLE.</p> <p>AND</p> <p>Perform a CHANNEL CALIBRATION.</p> <p>AND</p> <p>Initiate action to retrieve and analyze data from actuated instruments to determine the magnitude of vibratory ground motion</p> <p>AND</p> <p>Initiate action to prepare and submit a Special Report to the Commission, pursuant to Technical Requirement 5.6.9, within 10 days describing the magnitude, frequency spectrum and resultant effect upon unit features important to safety.</p> | <p>24 hours</p> <p>5 days</p> <p>Immediately after event</p> <p>Immediately after event</p> |

TABLE 3.3.7.5-1 (Page 1 of 1)
SEISMIC MONITORING INSTRUMENTATION

| | MINIMUM INSTRUMENTS OPERABLE | SURVEILLANCE REQUIREMENTS | MEASUREMENT RANGE |
|--|------------------------------------|---|----------------------|
| 1. Triaxial Time-History Accelerographs | | | |
| a. Reactor Bldg Mat EL 70' 0" | 1 | TSR 3.3.7.5.1 TSR 3.3.7.5.2 TSR 3.3.7.5.3 TSR 3.3.7.5.4 | 0 ± 1.0 g |
| b. Reactor Bldg Ext Shield Wall EL 232' 0" | 1 | TSR 3.3.7.5.1 TSR 3.3.7.5.2 TSR 3.3.7.5.3 TSR 3.3.7.5.4 | 0 ± 1.0 g |
| c. Reactor Bldg Drywell EL 151' 0" | 1 | TSR 3.3.7.5.1 TSR 3.3.7.5.2 TSR 3.3.7.5.3 TSR 3.3.7.5.4 | 0 ± 1.0 g |
| d. Free Field - Grade Level | 1 | TSR 3.3.7.5.1 TSR 3.3.7.5.2 TSR 3.3.7.5.3 TSR 3.3.7.5.4 | 0 ± 1.0 g |
| 2. Triaxial Peak Accelerographs | | | |
| a. Reactor Bldg SLCS Storage Tank | 1 | TSR 3.3.7.5.3 TSR 3.3.7.5.4 | 0 ± 10.0 g |
| b. Reactor Bldg - RHR Inj. Piping | 1 | TSR 3.3.7.5.3 TSR 3.3.7.5.4 | 0 ± 10.0 g |
| c. Aux. Bldg Service Water Piping | 1 | TSR 3.3.7.5.3 TSR 3.3.7.5.4 | 0 ± 10.0 g |
| 3. Triaxial Seismic Switches | | | |
| a. Reactor Bldg Mat EL 70' 0" | 1 (a) | TSR 3.3.7.5.1 ^(b) TSR 3.3.7.5.2 TSR 3.3.7.5.3 TSR 3.3.7.5.4 | 0.025 to 0.25 g |
| 4. Triaxial Response - Spectrum Recorders | | | |
| a. Reactor Bldg Mat EL 70' 0" | 1 (a) | TSR 3.3.7.5.1 TSR 3.3.7.5.2 TSR 3.3.7.5.3 TSR 3.3.7.5.4 | 0 ± 2 g |
| b. Reactor Bldg Floor EL 141' 0" | 1 | TSR 3.3.7.5.3 TSR 3.3.7.5.4 | 0 ± 2 g |
| c. Auxiliary Bldg Mat EL 70' 0" | 1 | TSR 3.3.7.5.3 TSR 3.3.7.5.4 | 0 ± 2 g |
| d. Auxiliary Bldg Floor EL 141' 0" | 1 | TSR 3.3.7.5.3 TSR 3.3.7.5.4 | 0 ± 2 g |

(a) With reactor control room indication and annunciation.

(b) Except seismic trigger.

TR 3.3.7.6 Loose-part Detection System

TLCO 3.3.7.6 The loose-part detection system shall be OPERABLE.

APPLICABILITY: MODE 1 and 2.

ACTIONS

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

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|-----------------|
| A. One or more required loose part detection channels inoperable. | A.1 Restore required channels to OPERABLE. | 30 days |
| B. Required Action and associated Completion Time not met. | B.1 Prepare and submit a Special Report to the Commission, pursuant to Technical Requirement 5.6.9 outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status. | 10 days |

SURVEILLANCE REQUIREMENTS

-----NOTE-----
The following SURVEILLANCE REQUIREMENTS apply to each required channel.

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.3.7.6.1 Perform a CHANNEL CHECK. | 24 hours |
| TSR 3.3.7.6.2 Perform a CHANNEL FUNCTIONAL TEST. | 31 days |
| TSR 3.3.7.6.3 Perform a CHANNEL CALIBRATION. | 18 months |

TR 3.3.7.7 Traversing In-core Probe System

TLCO 3.3.7.7 The traversing in-core probe system shall be OPERABLE with:

- a. Four movable detectors, drives and readout equipment to map the core, and
- b. Indexing equipment to allow all four detectors to be calibrated in a common location.

APPLICABILITY: When the traversing in-core probe is used for:

- a. Recalibration of the LPRM detectors, and
- b.* Monitoring the APLHGR, LHGR, MCPR, or MFLPD.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------|
| A. The traversing in-core probe system inoperable. | A.1 Do not use the system for the above applicable monitoring or calibration. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| <p>TSR 3.3.7.7.1 -----NOTE-----</p> <p>Only required to be met during use for LPRM calibration.</p> <p>-----</p> <p>Normalizing each of the above required detector outputs.</p> | <p>Within 72 hours prior to use for LPRM calibration.</p> |

- * Only the detector(s) in the location(s) of interest are required to be OPERABLE.

TR 3.3.7.8.1 Area Radiation Monitoring Instrumentation

TLCO 3.3.7.8.1 Fuel Building Spent Fuel Storage Pool Area Radiation Monitor shall be OPERABLE with its nominal alarm setpoint 12.3 mR/hr.

APPLICABILITY: With fuel in the spent fuel storage pool

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|-------------------|
| A. Required radiation monitoring instrument alarm setpoint exceeding the limit. | A.1 Adjust the setpoint to within the limit. | 4 hours |
| | <u>OR</u> A.2 Declare the channel inoperable. | 4 hours |
| B. Required radiation monitor inoperable. | B.1 Perform area surveys of the monitored area with portable monitoring instrumentation. | Once per 24 hours |

SURVEILLANCE REQUIREMENTS

-----NOTE-----
The provisions of Technical Requirement TLCO 3.0.4 are not applicable.

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.3.7.8.1.1 Perform a CHANNEL CHECK. | 12 hours |
| TSR 3.3.7.8.1.2 Perform a CHANNEL FUNCTIONAL TEST. | 31 days |
| TSR 3.3.7.8.1.3 Perform a CHANNEL CALIBRATION. | 18 months |

TR 3.3.7.8.2 Offgas System Radiation Monitoring Instrumentation

TLCO 3.3.7.8.2 The Offgas System Radiation Monitoring Instrumentation shown in Table 3.3.7.8.2-1 shall be OPERABLE with its alarm/trip setpoints within the specified limits.

APPLICABILITY: During operation of the main condenser air ejector

ACTIONS

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

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|--------------------------------------|
| A. A radiation monitoring instrumentation channel alarm/trip setpoint exceeding the limit. | A.1 Adjust the setpoint to within the limit. | 4 hours |
| | OR A.2 Declare the channel inoperable. | 4 hours |
| B. One or more radiation monitoring channels inoperable. | B.1 Enter the Condition Referenced in Table 3.3.7.8.2-1 for the channel. | Immediately |
| C. As required by Required Action B.1 and referenced in Table 3.3.7.8.2-1. | C.1 Obtain a grab sample of the monitored parameter | Once per 12 hours |
| | AND C.2 Analyze the sample for gross radioactivity. | Within 24 hours of sample collection |
| | AND C.3 Terminate effluent release via this pathway | 30 days |

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------|
| D. As required by Required Action B.1 and referenced in Table 3.3.7.8.2-1. | D.1 Verify by administrative means the required Function 1.a post treatment monitor is OPERABLE | Immediately |
| | AND | |
| | D.2 Verify the offgas system is not bypassed. | Immediately |
| | AND | |
| | D.3 Terminate effluent release via this pathway | 72 hours |
| E Required Action and associated Completion Time for Condition D not met. | E.1 Be in at least MODE 2 | 12 hours |

SURVEILLANCE REQUIREMENTS

-----NOTES-----

1. Refer to Table 3.3.7.8.2-1 to determine which TSRs apply to each channel.
2. The provisions of Technical Requirement TLCO 3.0.4 are not applicable.

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.3.7.8.2.1 Perform a CHANNEL CHECK. | 24 hours |
| TSR 3.3.7.8.2.2 Perform a CHANNEL FUNCTIONAL TEST. | 92 days |
| TSR 3.3.7.8.2.3 Perform a CHANNEL CALIBRATION. | 18 months |

TABLE 3.3.7.8.2-1

OFFGAS AND RADIATION MONITORING INSTRUMENTATION

| INSTRUMENTS | MINIMUM INSTRUMENTS OPERABLE | CONDITIONS REFERENCED FROM REQUIRED ACTION B.1 | SURVEILLANCE REQUIREMENTS | NOMINAL SETPOINT |
|---|------------------------------------|--|---|--|
| Main Condenser Offgas Post-Treatment System Effluent Monitoring System | | | | |
| a. Noble Gas Activity Monitor Providing Alarm and Automatic Termination of Release | 1 | | TSR 3.3.7.8.2.1 TSR 3.3.7.8.2.2 TSR 3.3.7.8.2.3 | 5.08×10^5 cpm |
| Condenser Air Ejector Pretreatment Radiolactivity Monitor | | | | |
| a. Noble Gas Activity Monitor | 1 | | TSR 3.3.7.8.2.1 TSR 3.3.7.8.2.2 TSR 3.3.7.8.2.3 | 1.5X Full Power Process Background Radiation Level* (alarm only) |

- (a) The nominal setpoint of 1.5 times the full power process background radiation level shall not exceed a value corresponding to the Technical Specification LCO 3.7.4 allowable release rate.

Offgas System Hydrogen Monitoring Instrumentation
TR 3.3.7.8.3

TR 3.3.7.8.3 Offgas System Hydrogen Monitoring Instrumentation

TLCO 3.3.7.8.3 One Offgas System Hydrogen Monitoring Instrumentation channel shall be OPERABLE and in operation with its nominal alarm setpoint 4% by volume.

APPLICABILITY: During operation of the main condenser offgas treatment system.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-------------------------------------|
| A. The required hydrogen monitoring instrumentation channel alarm setpoint exceeding the limit. | A.1 Declare the channel inoperable. | Immediately |
| B. Required monitor inoperable. | B.1 Obtain a grab sample of the monitored parameter | Once per 4 hours |
| | <u>AND</u> | |
| | B.2 Analyze the sample for Hydrogen concentration | Within 4 hours of sample collection |
| | <u>AND</u> | |
| | B.3 Terminate effluent release via this pathway | 30 days |

SURVEILLANCE REQUIREMENTS

-----NOTE-----
The provisions of Technical Requirement TLCO 3.0.4 are not applicable.

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.3.7.8.3.1 Perform a CHANNEL CHECK. | 24 hours |
| TSR 3.3.7.8.3.2 Perform a CHANNEL FUNCTIONAL TEST. | 31 days |
| <p>TSR 3.3.7.8.3.3 -----NOTE----- The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:</p> <ul style="list-style-type: none"> a. One volume percent hydrogen, balance nitrogen, and b. Four volume percent hydrogen, balance nitrogen. <p>----- Perform a CHANNEL CALIBRATION.</p> | 92 days |

TR 3.3.8.1 Loss of Power (LOP) Instrumentation

Table 3.3.8.1-1 (page 1 of 1)
Loss of Power Instrumentation

| FUNCTION | REQUIRED CHANNELS PER DIVISION | SURVEILLANCE REQUIREMENTS | TRIP SETPOINT |
|--|--------------------------------|--|---|
| Divisions 1 and 2 - 4.16 kV Emergency Bus Undervoltage | | | |
| a. Loss of Voltage - 4.16 kV Basis | 1 | SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4 | ≥ 2910 V and ≤ 3030 V |
| b. Loss of Voltage - Time Delay | 1 | SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4 | ≥ 2.7 seconds and ≤ 3.3 seconds |
| c. Degraded Voltage - 4.16 kV Basis | 1 | SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4 | ≥ 3665 V and ≤ 3815 V |
| d. Degraded Voltage - Time Delay, No LOCA | 1 | SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4 | ≥ 54 seconds and ≤ 66 seconds |
| e. Degraded Voltage - Time Delay, LOCA | 1 | SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4 | ≥ 2.7 seconds and ≤ 3.3 seconds |
| Division 3 - 4.16 kV Emergency Bus Undervoltage | | | |
| a. Loss of Voltage - 4.16 kV Basis | 2 | SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.4 | ≥ 2892 V and ≤ 3198 V |
| b. Loss of Voltage - Time Delay | 2 | SR 3.3.8.1.3 SR 3.3.8.1.4 | ≥ 2.7 seconds and ≤ 3.3 seconds |
| c. Degraded Voltage - 4.16 kV Basis | 2 | SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4 | ≥ 3147 V and ≤ 3807 V |
| d. Degraded Voltage - Time Delay, No LOCA | 2 | SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4 | ≥ 54 seconds and ≤ 66 seconds |
| e. Degraded Voltage - Time Delay, LOCA | 2 | SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4 | ≥ 2.7 seconds and ≤ 3.3 seconds |

TR 3.3.8.2 RPS Electric Power Monitoring

-----NOTE-----
The following surveillance Note applies to the identified SR of Technical
Specification LCO 3.3.8.2.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| SR 3.3.8.2.2-----NOTE----- Underfrequency nominal trip setpoint is between 57 HZ and 58.14 HZ. ----- | |

TR 3.3.11.2 Radioactive Liquid Effluent Monitoring Instrumentation

TLCO 3.3.11.2 The radioactive liquid effluent monitoring instrumentation channels shown in Table 3.3.11.2-1 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Technical Requirement 3.11.1.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined and adjusted in accordance with the methodology and parameters in the OFFSITE DOSE CALCULATION MANUAL (ODCM).

APPLICABILITY: At all times.

ACTIONS

- NOTES-----
1. Separate Condition entry is allowed for each Channel.
 2. Completion Time for an inoperable channel is tracked from initial discovery of inoperability even when release is not in progress.
-

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|--|
| A. One or more required channels inoperable. | A.1 Suspend release of radioactive effluent via affected pathway. | Immediately |
| | <u>OR</u> A.2 Enter the Condition referenced in Table 3.3.11.2-1 for the channel. | Immediately |
| B. As required by Required Action A.2 and referenced in Table 3.3.11.2-1. | B.1 Estimate flow rate. | Once per 4 hours during actual releases. |
| | <u>AND</u> B.2 Restore channel to OPERABLE. | 30 days (continued) |

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-------------------|
| C. As required by Required Action A.2 and referenced in Table 3.3.11.2-1 | C.1 Take grab samples during release and analyze the required samples for gross radioactivity (beta or gamma). The LLD for this analysis shall be 1×10^{-5} $\mu\text{Ci/ml}$. | Once per 12 hours |
| | AND C.2 Restore channel to OPERABLE. | 30 days |
| D. As required by Required Action A.2 and referenced in Table 3.3.11.2-1 | D.1 Perform a second independent set of samples and analyses per Table 3.11.1.1-1. | prior to release |
| | AND D.2 Perform verification of release rate calculation and discharge line valving by a second qualified member of the technical staff | prior to release |
| | AND D.3 Restore channel to OPERABLE. | 14 days |
| E. Required Actions and associated Completion Times not met. | E.1 Suspend release of radioactive effluent via this pathway. | Immediately |
| | AND E.2 Initiate action to explain why this inoperability was not corrected in a timely manner in the next Annual Radioactive Effluent Release Report. | Immediately |

SURVEILLANCE REQUIREMENTS

- NOTES-----
1. Refer to Table 3.3.11.2-1 to determine which TSRs apply to each channel.
 2. The provisions of TLCO 3.0.4 are not applicable.
-

| SURVEILLANCE | | FREQUENCY |
|----------------|----------------------------------|-----------------------|
| TSR 3.3.11.2.1 | Perform CHANNEL CHECK. | 24 hours |
| TSR 3.3.11.2.2 | Perform SOURCE CHECK. | 31 days |
| TSR 3.3.11.2.3 | Perform CHANNEL FUNCTIONAL TEST. | 92 days |
| TSR 3.3.11.2.4 | Perform a CHANNEL CALIBRATION. | 18 months |
| TSR 3.3.11.2.5 | Perform SOURCE CHECK. | Prior to each release |

TABLE 3.3.11.2-1 (PAGE 1 OF 2)
RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

| INSTRUMENT | MINIMUM CHANNELS OPERABLE | CONDITION REFERENCED FROM REQUIRED ACTION A.2 | SURVEILLANCE REQUIREMENTS |
|--|---------------------------------|---|---|
| 1. Gross Radioactivity Monitors Providing Alarm and Automatic Termination of Release | | | |
| a. Liquid Radwaste Effluent Line (RMS-RE107) | 1 | D | TSR 3.3.11.2.1 TSR 3.3.11.2.3 ⁽¹⁾⁽²⁾ TSR 3.3.11.2.4 ⁽³⁾ TSR 3.3.11.2.5 |
| 2. Gross Radioactivity Monitors Providing Alarm but not Providing Automatic Termination of Release | | | |
| a. Cooling Tower Blowdown Line (RMS-RE108) | 1 | C | TSR 3.3.11.2.1 TSR 3.3.11.2.2 TSR 3.3.11.2.3 ⁽²⁾ TSR 3.3.11.2.4 ⁽³⁾ |
| 3. Flow Rate Measurement Devices | | | |
| a. Liquid Radwaste Effluent Line (LWS-FE197) | 1 | B | TSR 3.3.11.2.1 ⁽⁴⁾ TSR 3.3.11.2.3 TSR 3.3.11.2.4 |
| b. Cooling Tower Blowdown Line (CWS-FE113) | 1 | B | TSR 3.3.11.2.1 ⁽⁴⁾ TSR 3.3.11.2.3 TSR 3.3.11.2.4 |

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway occurs if any of the following conditions exist:

- a. Instrument indicates measured levels above the alarm/trip setpoint.
- b. Circuit failure.

(CONTINUED)

TABLE 3.3.11.2-1 (PAGE 2 OF 2)
RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

- (2) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exist:
- a. Instrument indicates measured levels above the alarm setpoint.
 - b. Circuit failure.
 - c. Instrument indicates a downscale failure.
 - d. Instrument controls not set in operate mode.
- (3) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards or using standards that have been obtained from suppliers that participate with NBS in measurement assurance activities. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.
- (4) CHANNEL CHECK shall consist of verifying indication of flow during periods of release. CHANNEL CHECK shall be made at least once per 24 hours on days during which continuous, periodic, or batch releases are made.

TR 3.3.11.3 Radioactive Gaseous Effluent Monitoring Instrumentation

TLCO 3.3.11.3 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3.11.3-1 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Technical Requirement 3.11.2.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined and adjusted in accordance with the methodology and parameters in the ODCM.

APPLICABILITY: At All Times

ACTIONS

-----NOTE-----
1. Separate Condition entry is allowed for each Channel.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|--|
| A. One or more required channels inoperable. | A.1 Suspend release of radioactive gaseous effluents via affected pathway. | Immediately |
| | OR A.2 Enter the Condition referenced in Table 3.3.11.3-1 for the channel. | Immediately |
| B. As required by Required Action A.2 and referenced in Table 3.3.11.3-1. | B.1 Estimate flow rate. | Once per 4 hours during actual releases. |
| | AND B.2 Restore channel to OPERABLE. | 30 days |

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|--------------------------------|
| C. As required by Required Action A.2 and referenced in Table 3.3.11.3-1 | C.1 Take grab samples during release | Once per 12 hours |
| | AND | |
| | C.2 Analyze the required samples for gross activity | Within 24 hours after sampling |
| | AND | |
| | C.3 Restore channel to OPERABLE. | 30 days |
| D. As required by Required Action A.2 and referenced in Table 3.3.11.3-1 | D.1 Establish continuous sample collection with auxiliary sampling equipment. | 8 hours |
| | AND | |
| | D.2 Restore channel to OPERABLE. | 30 days |
| E. Required Actions and associated Completion Times not met. | E.1 Suspend release of radioactive gaseous effluents via this pathway. | Immediately |
| | AND | |
| | E.2 Initiate action to explain why this inoperability was not corrected in the time specified in the next Annual Radioactive Effluent Release Report. | Immediately |

SURVEILLANCE REQUIREMENTS

- NOTES-----
1. Refer to Table 3.3.11.3-1 to determine which TSRs apply to each channel.
 2. The provisions of TLCO 3.0.4 are not applicable.
 3. The surveillance requirements apply to all ranges of the monitoring equipment.
-

| SURVEILLANCE | | FREQUENCY |
|----------------|----------------------------------|-----------|
| TSR 3.3.11.3.1 | Perform CHANNEL CHECK. | 24 hours |
| TSR 3.3.11.3.2 | Perform CHANNEL CHECK. | 7 days |
| TSR 3.3.11.3.3 | Perform SOURCE CHECK. | 31 days |
| TSR 3.3.11.3.4 | Perform CHANNEL FUNCTIONAL TEST. | 92 days |
| TSR 3.3.11.3.5 | Perform a CHANNEL CALIBRATION. | 18 months |

TABLE 3.3.11.3-1 (Page 1 of 2)
RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

| INSTRUMENT | MINIMUM CHANNELS OPERABLE | CONDITION REFERENCED FROM REQUIRED ACTION A.2 | SURVEILLANCE REQUIREMENTS |
|--|---------------------------------|---|--|
| 1. Main Plant Exhaust Duct Monitoring System | | | |
| a. Noble Gas Activity Monitor | 1 | C | TSR 3.3.11.3.1 TSR 3.3.11.3.3 TSR 3.3.11.3.4 ⁽¹⁾ TSR 3.3.11.3.5 ⁽²⁾ |
| b. Iodine Sampler | 1 | D | TSR 3.3.11.3.2 |
| c. Particulate Sampler | 1 | D | TSR 3.3.11.3.2 |
| d. Effluent System Flow Rate Monitor | 1 | B | TSR 3.3.11.3.1 TSR 3.3.11.3.4 TSR 3.3.11.3.5 |
| e. Sampler Flow Rate Monitor | 1 | B | TSR 3.3.11.3.1 TSR 3.3.11.3.4 TSR 3.3.11.3.5 |
| 2. Fuel Building Exhaust Duct Monitoring System | | | |
| a. Noble Gas Activity Monitor | 1 | C | TSR 3.3.11.3.1 TSR 3.3.11.3.3 TSR 3.3.11.3.4 ⁽¹⁾ TSR 3.3.11.3.5 ⁽²⁾ |
| b. Iodine Sampler | 1 | D | TSR 3.3.11.3.2 |
| c. Particulate Sampler | 1 | D | TSR 3.3.11.3.2 |
| d. Effluent System Flow Rate Monitor | 1 | B | TSR 3.3.11.3.1 TSR 3.3.11.3.4 TSR 3.3.11.3.5 |
| e. Sampler Flow Rate Monitor | 1 | B | TSR 3.3.11.3.1 TSR 3.3.11.3.4 TSR 3.3.11.3.5 |

(continued)

TABLE 3.3.11.3-1 (Page 2 of 2)
RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

| INSTRUMENT | MINIMUM CHANNELS OPERABLE | CONDITION REFERENCED FROM REQUIRED ACTION A.2 | SURVEILLANCE REQUIREMENTS |
|---|---------------------------|---|--|
| 3. Radwaste Building Ventilation Exhaust Duct Monitoring System | | | |
| a. Noble Gas Activity Monitor | 1 | C | TSR 3.3.11.3.1 TSR 3.3.11.3.3 TSR 3.3.11.3.4 ⁽¹⁾ TSR 3.3.11.3.5 ⁽²⁾ |
| b. Iodine Sampler | 1 | D | TSR 3.3.11.3.2 |
| c. Particulate Sampler | 1 | D | TSR 3.3.11.3.2 |
| d. Effluent System Flow Rate Monitor | 1 | B | TSR 3.3.11.3.1 TSR 3.3.11.3.4 TSR 3.3.11.3.5 |
| e. Sampler Flow Rate Monitor | 1 | B | TSR 3.3.11.3.1 TSR 3.3.11.3.4 TSR 3.3.11.3.5 |

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists:

- Instrument indicates measured levels above the alarm setpoint.
- Circuit failure.
- Instrument indicates a downscale failure.
- Instrument controls not set in operate mode.

(2) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards (NBS) or using standards that have been obtained from suppliers that participate with NBS in measurement assurance activities. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.

TR 3.3.12 Meteorological Monitoring Instrumentation

TLCO 3.3.12 The meteorological monitoring instrumentation channels shown in Table 3.3.12-1 shall be OPERABLE.

APPLICABILITY: At all times.

ACTIONS

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

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------|
| A. One or more required channels inoperable. | A.1 Restore to OPERABLE | 7 days |
| | OR A.2 Prepare and submit a Special Report to the Commission, pursuant to Technical Requirement 5.6.9 outlining the cause of the malfunction and the plans for restoring the instrumentation to OPERABLE status. | 10 days |

SURVEILLANCE REQUIREMENTS

-----NOTE-----
Refer to Table 3.3.12-1 to determine which TSRs apply to each channel.

| SURVEILLANCE | | FREQUENCY |
|--------------|------------------------------|-----------|
| TSR 3.3.12.1 | Perform CHANNEL CHECK. | 24 hours |
| TSR 3.3.12.2 | Perform CHANNEL CALIBRATION. | 184 days |

TABLE 3.3.12-1
METEOROLOGICAL MONITORING INSTRUMENTATION

| INSTRUMENT | MINIMUM CHANNELS OPERABLE | SURVEILLANCE REQUIREMENTS |
|----------------------------------|---------------------------------|------------------------------|
| a. Wind Speed | | |
| 1. Elev. 30 ft. | 1 | TSR 3.3.12.1 TSR 3.3.12.2 |
| 2. Elev. 150 ft. | 1 | TSR 3.3.12.1 TSR 3.3.12.2 |
| b. Wind Direction | | |
| 1. Elev. 30 ft. | 1 | TSR 3.3.12.1 TSR 3.3.12.2 |
| 2. Elev. 150 ft. | 1 | TSR 3.3.12.1 TSR 3.3.12.2 |
| c. Air Temperature Difference | | |
| 1. Elev. 30/150 ft. | 1 | TSR 3.3.12.1 TSR 3.3.12.2 |

TABLE 3.6.1.3-1 (page 6 of 6)
PRIMARY CONTAINMENT ISOLATION VALVES

| SYSTEM | VALVE NUMBER(a) | PENETRATION NUMBER | VALVE GROUP(l) | MAXIMUM ISOLATION TIME (Seconds) | SECONDARY CONTAINMENT BYPASS PATH (Yes/No) |
|-------------------------------------|-----------------|--------------------|----------------|----------------------------------|--|
| c. Other Isolation Valves continued | | | | | |
| Equip. Drain Disch. | 1DER*V4 | 1KJB*238 | | | No |
| Floor Drain Disch. | 1DFR*V180 | 1KJB*235 | | | No |
| Fire Protection Hdr. | 1FPW*V263 | 1KJB*241 | | | Yes(f) |
| Service Air Supply | 1SAS*V486 | 1KJB*244 | | | Yes(f) |
| Instr. Air Supply | 1IAS*V80 | 1KJB*246 | | | Yes(f) |
| RPCCW Supply | 1CCP*V118 | 1KJB*248 | | | No |
| RPCCW Return | 1CCP*V160 | 1KJB*249 | | | No |
| Service Water Supply | 1SWP*V174 | 1KJB*252A | | | No |
| Service Water Supply | 1SWP*V175 | 1KJB*252B | | | No |
| Air Sup. for Main Steam SRV | 1SVV*V9 | 1KJB*2102 | | | No |
| Air Sup. for Main Steam SRV | 1SVV*V31 | 1KJB*2103 | | | No |
| Vent. Chilled Water Rtn. | 1HVN*V1316 | 1KJB*2131 | | | Yes(f) |
| Vent. Chilled Water Sup. | 1HVN*V541 | 1KJB*2132 | | | Yes(f) |
| Condensate Makeup Sup. | 1CNS*V86 | 1KJB*2134 | | | Yes(f) |

- (a) Subject to a Type C leak rate test at a test pressure of 7.6 psig except as otherwise noted.
- (b) Also isolates the drywell.
- (c) Testable check valve.
- (d) Isolates on MS-PLCS air line high flow or MS-PLCS air line header to Main Steam Line low differential pressure.
- (e) Receives a remote manual isolation signal.
- (f) This line is sealed by the penetration valve leakage control system (PVLCSS). The combined leakage from valves sealed by the PVLCSS is not included in 0.60 La Type B and C test total.
- (g) This valve sealed by the main steam positive leakage control system (MS-PLCS). Valves sealed by the MS-PLCS are tested in accordance with Technical Specification Surveillance Requirement SR 3.6.1.3.8 to verify that leakage does not exceed the limit specified in the SR. This leakage is not included in the 0.60 La Type B and C test total.
- (h) Not subject to Type C leakage tests. Valve(s) will be included in the Type A test.
- (j) Valve is hydrostatically leak tested at a test pressure of 8.36 psig (1.1 Pa). The leakage from hydrostatically tested valves is not included in the 0.60 La Type B and C test total.
- (k) Not subject to a Type A, B, or C leak rate test.
- (l) Valve groups are designated in Table 3.3.6.1-2
- (m) The valve position indications for these valves are not required for Technical Specification LCO 3.3.3.1.
- (n) DELETED.
- (o) DELETED.
- (p) In Modes 4 and 5, an equivalent isolation barrier for LCO 3.6.1.10 is established by maintaining a minimum suppression pool level of 18 feet.
- (q) In Modes 4 and 5, an equivalent isolation barrier for LCO 3.6.1.10 is established by maintaining a minimum suppression pool level of 18 feet, provided penetrations KJB-218B and KJB-218C are isolated.

TR 3.6.1.5 Primary Containment Air Temperature

-----NOTE-----
The following surveillance Note applies to the identified SR of Technical
Specification LCO 3.6.1.5.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY | | | | | | | | | | | | | | | |
|--|------------------|----------------------------------|----------------|----|-------|-------------------|----|--|--|----|-------|-------|----|-------|----------------------------------|--|
| <div>SR 3.6.1.5.1</div> <div>-----NOTE-----</div> <div>Technical Specification SR 3.6.1.5.1 is evaluated based on the arithmetical average of the temperatures at the locations listed below. At least one temperature from each of the two elevations (167' <u>and</u> 122' or 119') is required. All OPERABLE instruments should be used in the calculation.</div> <table><thead><tr><th></th><th><u>ELEVATION</u></th><th><u>AZIMUTH</u></th></tr></thead><tbody><tr><td>a.</td><td>~167'</td><td>~37°, ~72°, ~108°</td></tr><tr><td>b.</td><td></td><td></td></tr><tr><td>1)</td><td>~122'</td><td>~170°</td></tr><tr><td>2)</td><td>~119'</td><td>~66°, ~117°, ~219°, ~270°, ~322°</td></tr></tbody></table> <div>-----</div> | | <u>ELEVATION</u> | <u>AZIMUTH</u> | a. | ~167' | ~37°, ~72°, ~108° | b. | | | 1) | ~122' | ~170° | 2) | ~119' | ~66°, ~117°, ~219°, ~270°, ~322° | <div> </div> <div> </div> <div> </div> |
| | <u>ELEVATION</u> | <u>AZIMUTH</u> | | | | | | | | | | | | | | |
| a. | ~167' | ~37°, ~72°, ~108° | | | | | | | | | | | | | | |
| b. | | | | | | | | | | | | | | | | |
| 1) | ~122' | ~170° | | | | | | | | | | | | | | |
| 2) | ~119' | ~66°, ~117°, ~219°, ~270°, ~322° | | | | | | | | | | | | | | |

TR 3.6.1.8 Penetration Valve Leakage Control System (PVLCS)

-----NOTE-----
The following Action applies to Condition B of Technical Specification LCO 3.6.1.8 and is to be entered concurrently.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|-------------------------------------|--|--|
| A. Not Used | A.1 Not used | |
| B. Two PVLCS subsystems inoperable. | <p>B.1 Perform TS Action B.1</p> <p><u>AND</u></p> <p>B.2.1 Verify by administrative means availability of the Diesel driven instrument air compressor.</p> <p><u>OR</u></p> <p>B.2.2 -----NOTE----- An alternate air supply to the SVV accumulators is considered to be air pressure at or above 101 psig delivered by a diesel-driven air compressor or other source not dependent on off-site power. ----- Provide for a source of alternate air pressure for SR/V operation.</p> | <p>Per TS Condition B.1</p> <p>4 hours</p> <p><u>AND</u></p> <p>once per 24 hours thereafter.</p> <p>12 hours</p> <p><u>AND</u></p> <p>once per 24 hours thereafter.</p> |
| C. Not used | C.1 Not used | |

SURVEILLANCE REQUIREMENTS

-----NOTE-----
The following surveillance Note applies to the identified SR of Technical Specification LCO 3.6.1.8.

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| SR 3.6.1.8.2 -----NOTE----- The system functional test of each PVLCS subsystem includes verifying each automatic valve actuates to its correct position and that a sealing pressure ≥ 22 psig is established in each sealing valve. ----- | |

-----NOTE-----
The following surveillance requirement applies to Technical Specification LCO 3.6.1.8. Failure to meet this surveillance requirement requires entry into Technical Specification LCO 3.6.1.8.

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.6.1.8.1 - TSR 3.6.1.8.2 (Not Used) | |
| TSR 3.6.1.8.3 Perform a CHANNEL CALIBRATION | 18 months |

TR 3.6.1.9 Main Steam—Positive Leakage Control System (MS-PLCS)

SURVEILLANCE REQUIREMENTS

-----NOTE-----
The following surveillance Note applies to the identified SR of Technical Specification LCO 3.6.1.9.

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| SR 3.6.1.9.3 -----NOTE----- The system functional test of each MS-PLCS subsystem includes verifying each automatic valve actuates to its correct position and that 8.5 ± 3 psid sealing pressure is established in each steam line. ----- | |

-----NOTE-----
The following surveillance requirement applies to Technical Specification LCO 3.6.1.9. Failure to meet this surveillance requirement requires entry into Technical Specification LCO 3.6.1.9.

| SURVEILLANCE | FREQUENCY |
|---|--------------------|
| TSR 3.6.1.9.1 - TSR 3.6.1.9.3 (Not Used) | |
| TSR 3.6.1.9.4 Perform a CHANNEL CALIBRATION | 18 months |
| TSR 3.6.1.9.5 -----NOTE----- Not required if performed within the previous 92 days ----- Cycle each motor - operated valve including the Main Steam Shutoff Valves (MSSVs) through at least one complete cycle of full travel. | Each Cold Shutdown |

TR 3.6.2.1 Suppression Pool Average Temperature

TLCO 3.6.2.1 Eight Suppression pool temperature indicators, one in each of eight locations, shall be OPERABLE.

APPLICABILITY: Modes 1, 2, and 3

ACTIONS

-----NOTE-----
1. Separate Condition entry is allowed for each required indicator.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-------------------|
| A. One required suppression pool temperature indicator inoperable. | A.2 Restore the inoperable indicator to OPERABLE status. | 7 days |
| B. Required Action and associated Completion Time for Condition A not met. | B.1 Verify the suppression pool water temperature to be within the limits of LCO 3.6.2.1. | Once per 12 hours |
| C. Two or more required suppression pool temperature indicators inoperable. | C.1 Restore at least six required indicators to OPERABLE status. | 8 hours |
| D. Required Action and associated Completion Time of Condition C not met. | D.1 Be in MODE 3. | 12 hours |
| | <u>AND</u> D.2 Be in MODE 4. | 36 hours |

TR 3.6.2.2 Suppression Pool Water Level

TLCO 3.6.2.2 Two suppression pool water level indicators shall be
OPERABLE

APPLICABILITY: Modes 1, 2, and 3

ACTIONS

-----NOTE-----
1. Separate Condition entry is allowed for each indicator.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-------------------|
| A. One required indicator inoperable. | A.2 Restore the inoperable indicator to OPERABLE status. | 7 days |
| B. Required Action and associated Completion Time for Condition A not met. | B.1 Verify the suppression pool water level to be within the limits of LCO 3.6.2.2. | Once per 12 hours |
| C. Both required suppression pool level indicators inoperable. | C.1 Restore at least one indicator to OPERABLE. | 8 hours |
| D. Required Action and associated Completion Time of Condition C not met. | D.1 Be in MODE 3. | 12 hours |
| | AND D.2 Be in MODE 4. | 36 hours |

TR 3.6.3.1 Primary Containment Hydrogen Recombiners

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---------------|---|-----------|
| TSR 3.6.3.1.1 | (Not Used) | |
| TSR 3.6.3.1.2 | (Not Used) | |
| TSR 3.6.3.1.3 | (Not Used) | |
| TSR 3.6.3.1.4 | Perform a CHANNEL CALIBRATION of all control room recombiner indication instrumentation and control circuits. | 18 months |

TR 3.6.4.2 Secondary Containment Isolation Dampers (SCIDs)

TABLE 3.6.4.2-1 (page 1 of 1)
SECONDARY CONTAINMENT AUTOMATIC ISOLATION DAMPERS

| DAMPER FUNCTION | MAXIMUM ISOLATION TIME (Seconds) | DAMPER GROUP # | APPLICABLE OPERATIONAL CONDITION |
|---|--|-------------------|--|
| 1. Shield Building Annulus Ventilation Exhaust Damper (1HVR*A00161) | 15 | 12 | 1, 2, 3 |
| 2. Shield Building Annulus Ventilation Exhaust Damper (1HVR*A0023A) | 15 | 12 | 1, 2, 3 |
| 3. Shield Building Annulus Ventilation Exhaust Damper (1HVR*A0023B) | 15 | 12 | 1, 2, 3 |
| 4. Auxiliary Building Ventilation Exhaust Damper (1HVR*A00214) | 15 | 11 | 1, 2, 3 |
| 5. Auxiliary Building Ventilation Exhaust Damper (1HVR*A00262) | 15 | 11 | 1, 2, 3 |
| 6. Auxiliary Building Ventilation Exhaust Damper (1HVR*A00249) | 15 | 11 | 1, 2, 3 |
| 7. Auxiliary Building Ventilation Exhaust Damper (1HVR*A0010A) | 15 | 11 | 1, 2, 3 |
| 8. Auxiliary Building Ventilation Exhaust Damper (1HVR*A0010B) | 15 | 11 | 1, 2, 3 |
| 9. Auxiliary Building Ventilation Supply Damper (1HVR*A00143) | 15 | 11 | 1, 2, 3 |
| 10. Auxiliary Building Ventilation Supply Damper (1HVR*A00164) | 15 | 11 | 1, 2, 3 |
| 11. Fuel Building Ventilation Supply Damper (1HVF*A00122) | 15 | 13 | 1, 2, 3, ## |
| 12. Fuel Building Ventilation Supply Damper (1HVF*A00101) | 15 | 13 | 1, 2, 3, ## |
| 13. Fuel Building Ventilation Exhaust Damper (1HVF*A00104) | 15 | 13 | 1, 2, 3, ## |
| 14. Fuel Building Ventilation Exhaust Damper (1HVF*A00137) | 15 | 13 | 1, 2, 3, ## |
| 15. Fuel Building Ventilation Exhaust Damper (1HVF*A00102) | 15 | 13 | 1, 2, 3, ## |
| 16. Fuel Building Ventilation Exhaust Damper (1HVF*A00112) | 15 | 13 | 1, 2, 3, ## |

Damper groups are designated in Table 3.3.6.2-2
When handling irradiated fuel in the Fuel Building.

TR 3.6.4.3 Standby Gas Treatment (SGT) System

SURVEILLANCE REQUIREMENTS

-----NOTE-----

The following surveillance requirements apply to Technical Specification LCO 3.6.4.3. Failure to meet these surveillance requirements requires entry into Technical Specification LCO 3.6.4.3.

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.6.4.3.1 (Not Used) | |
| TSR 3.6.4.3.2 (Not Used) | |
| TSR 3.6.4.3.3 Verify each SGT subsystem will actuate on an actual or simulated Annulus ventilation exhaust high radiation initiation signal. | 18 months |
| TSR 3.6.4.3.4 (Not Used) | |
| TSR 3.6.4.3.5 Verify each SGT subsystem filter train starts and dampers align on a manual initiation signal. | 18 months |

TR 3.6.4.4 Shield Building Annulus Mixing System

SURVEILLANCE REQUIREMENTS

-----NOTE-----
The following surveillance requirements apply to Technical Specification LCO 3.6.4.4. Failure to meet these surveillance requirements requires entry into Technical Specification LCO 3.6.4.4.

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.6.4.4.1 (Not Used) | |
| TSR 3.6.4.4.2 Verify each shield building annulus mixing subsystem will actuate on an actual or simulated Annulus ventilation exhaust high radiation initiation signal. | 18 months |
| TSR 3.6.4.4.3 Verify each shield building annulus mixing subsystem starts and isolation dampers open on a manual initiation signal. | 18 months |

TR 3.6.4.6 Fuel Building Ventilation System - Operating

SURVEILLANCE REQUIREMENTS

-----NOTE-----
The following surveillance requirements apply to Technical Specification LCO 3.6.4.6. Failure to meet these surveillance requirements requires entry into Technical Specification LCO 3.6.4.6.

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.6.4.6.1 (Not Used) | |
| TSR 3.6.4.6.2 (Not Used) | |
| TSR 3.6.4.6.3 Verify each fuel building ventilation charcoal filtration subsystem will actuate on a Fuel Building ventilation exhaust high radiation initiation signal. | 18 months |
| TSR 3.6.4.6.4 (Not Used) | |
| TSR 3.6.4.6.5 Verify that the subsystem starts and isolation dampers actuate to isolate the normal flow path and to divert flow through the charcoal filters on manual initiation from the control room. | 18 months |

TR 3.6.4.7 Fuel Building Ventilation System - Fuel Handling

SURVEILLANCE REQUIREMENTS

-----NOTE-----
The following surveillance requirements apply to Technical Specification LCO 3.6.4.7. Failure to meet these surveillance requirements requires entry into Technical Specification LCO 3.6.4.7.

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.6.4.7.1 (Not Used) | |
| TSR 3.6.4.7.2 (Not Used) | |
| TSR 3.6.4.7.3 (Not Used) | |
| TSR 3.6.4.7.4 Verify each fuel building ventilation charcoal filtration subsystem will actuate on a Fuel Building ventilation exhaust high radiation initiation signal. | 18 months |
| TSR 3.6.4.7.5 (Not Used) | |
| TSR 3.6.4.7.6 Verify that the subsystem starts and isolation dampers actuate to isolate the normal flow path and to divert flow through the charcoal filters on manual initiation from the control room. | 18 months |

TR 3.6.5.1 Drywell

-----NOTE-----
The following surveillance Notes apply to the identified SRs of Technical
Specification LCO 3.6.5.1.

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| <p>SR 3.6.5.1.3 -----NOTE-----</p> <p>The drywell bypass leakage rate test shall be conducted at an initial differential pressure of 3.0 psid and the $A\sqrt{k}$ shall be calculated from the measured leakage. One drywell air lock door shall remain open during the drywell leakage test such that each drywell door is leak tested during at least every other leakage rate test.</p> <p>-----</p> | |

TR 3.6.5.3 Drywell Isolation Valves

TABLE 3.6.5.3-1 (page 1 of 2)
DRYWELL ISOLATION VALVES

| SYSTEM | VALVE NUMBER | PENETRATION NUMBER | VALVE GROUP (C) | MAXIMUM ISOLATION TIME (seconds) |
|--------------------------------------|-----------------|-----------------------|--------------------|---|
| <u>a. Automatic Isolation Valves</u> | | | | |
| RPCCW Supply | 1CCP*MOV142 | 1DRB*Z50 | 1 | 30 |
| RPCCW Return | 1CCP*MOV144 | 1DRB*Z51 | 1 | 30 |
| RPCCW Return | 1CCP*MOV143 | 1DRB*Z51 | 1 | 30 |
| Service Water Supply | 1SWP*MOV4A | 1DRB*Z54 | 1 | 52.8 |
| Service Water Supply | 1SWP*MOV4B | 1DRB*Z54 | 1 | 51.7 |
| Service Water Return | 1SWP*MOV5A | 1DRB*Z55 | 1 | 50.6 |
| Service Water Return | 1SWP*MOV5B | 1DRB*Z55 | 1 | 53.9 |
| Recirc. Flow Control | 1RCS*MOV58A | 1DRB*Z152 | 1 | 11.0 |
| Recirc. Flow Control | 1RCS*MOV59A | 1DRB*Z153 | 1 | 10.6 |
| Recirc. Flow Control | 1RCS*MOV60A | 1DRB*Z154 | 1 | 6.3 |
| Recirc. Flow Control | 1RCS*MOV61A | 1DRB*Z155 | 1 | 8.6 |
| Recirc. Flow Control | 1RCS*MOV58B | 1DRB*Z156 | 1 | 10.6 |
| Recirc. Flow Control | 1RCS*MOV59B | 1DRB*Z157 | 1 | 10.8 |
| Recirc. Flow Control | 1RCS*MOV60B | 1DRB*Z158 | 1 | 6.38 |
| Recirc. Flow Control | 1RCS*MOV61B | 1DRB*Z159 | 1 | 8.9 |
| Cont./Drywell Purge Sup. | 1HVR*AOV125 | 1DRB*Z32 | 1 | 3 |
| Cont./Drywell Purge Rtn. | 1HVR*AOV126 | 1DRB*Z34 | 1 | 3 |
| Cont./Drywell Purge Sup. | 1HVR*AOV147 | 1DRB*Z32 | 1 | 3 |
| Cont./Drywell Purge Rtn. | 1HVR*AOV148 | 1DRB*Z34 | 1 | 3 |
| Hydrogen Mixing Line Inlet | 1CPM*MOV2A | 1DRB*Z57A | 10 | 33 |
| Hydrogen Mixing Line Inlet | 1CPM*MOV4A | 1DRB*Z57A | 10 | 33 |
| Hydrogen Mixing Line Inlet | 1CPM*MOV2B | 1DRB*Z57B | 10 | 33 |
| Hydrogen Mixing Line Inlet | 1CPM*MOV4B | 1DRB*Z57B | 10 | 33 |
| Hydrogen Mixing Line Exhaust | 1CPM*MOV3A | 1DRB*Z58A | 10 | 33 |
| Hydrogen Mixing Line Exhaust | 1CPM*MOV1A | 1DRB*Z58A | 10 | 33 |
| Hydrogen Mixing Line Exhaust | 1CPM*MOV3B | 1DRB*Z58B | 10 | 33 |
| Hydrogen Mixing Line Exhaust | 1CPM*MOV1B | 1DRB*Z58B | 10 | 33 |
| Reactor Plant Sampling | 1B33*AOVF019 | 1DRB*Z449 | 9 | 5 |
| Reactor Plant Sampling | 1B33*AOVF020 | 1DRB*Z449 | 9 | 5 |
| <u>b. Manual Isolation Valves</u> | | | | |
| Service Air Supply | 1SAS*V489 | 1DRB*Z45 | | |
| Instrument Air Supply | 1IAS*V79 | 1DRB*Z47 | | |
| Service Water Supply | 1HVN*V542 | 1DRB*Z54 | | |
| Service Water Supply | 1SWP*V205 | 1DRB*Z54 | | |
| Service Water Return | 1HVN*V543 | 1DRB*Z55 | | |
| Service Water Return | 1SWP*V206 | 1DRB*Z55 | | |
| Air Sup. for Main Steam SRV | 1SVV*V50 | 1DRB*Z107 | | |
| Air Sup. for Main Steam SRV | 1SVV*V53 | 1DRB*Z112 | | |
| Cont Atmos. Monitor Probe | 1CMS*SOV34A(b) | 1DRB*Z500 | | |
| Cont Atmos. Monitor Probe | 1CMS*SOV34B(b) | 1DRB*Z430 | | |
| Cont Atmos. Monitor Probe | 1CMS*SOV34C(b) | 1DRB*Z499 | | |
| Cont Atmos. Monitor Probe | 1CMS*SOV34D(b) | 1DRB*Z428 | | |
| Cont Atmos. Monitor Probe | 1CMS*SOV32A(b) | 1DRB*Z333 | | |
| Cont Atmos. Monitor Probe | 1CMS*SOV32G(b) | 1DRB*Z335 | | |
| <u>c. Other Isolation Valves</u> | | | | |
| Main Steam SRV Disch. | 1B21*RVF047A | 1DRB*Z136 | | |
| Main Steam SRV Disch. | 1B21*RVF041A | 1DRB*Z137 | | |
| Main Steam SRV Disch. | 1B21*RVF051G | 1DRB*Z138 | | |
| Main Steam SRV Disch. | 1B21*RVF041L | 1DRB*Z139 | | |
| Main Steam SRV Disch. | 1B21*RVF047C | 1DRB*Z140 | | |

(continued)

TABLE 3.6.5.3-1 (page 2 of 2)
DRYWELL ISOLATION VALVES (continued)

| SYSTEM | VALVE NUMBER | PENETRATION NUMBER |
|---------------------------------------|------------------|-----------------------|
| c. Other Isolation Valves (continued) | | |
| Main Steam SRV Disch. | 1B21*RVF041G | 1DRB*2141 |
| Main Steam SRV Disch. | 1B21*RVF051C | 1DRB*2142 |
| Main Steam SRV Disch. | 1B21*RVF041C | 1DRB*2143 |
| Main Steam SRV Disch. | 1B21*RVF047B | 1DRB*2144 |
| Main Steam SRV Disch. | 1B21*RVF041B | 1DRB*2145 |
| Main Steam SRV Disch. | 1B21*RVF051B | 1DRB*2146 |
| Main Steam SRV Disch. | 1B21*RVF041F | 1DRB*2147 |
| Main Steam SRV Disch. | 1B21*RVF047F | 1DRB*2148 |
| Main Steam SRV Disch. | 1B21*RVF041D | 1DRB*2149 |
| Main Steam SRV Disch. | 1B21*RVF047D | 1DRB*2150 |
| Main Steam SRV Disch. | 1B21*RVF051D | 1DRB*2151 |
| LPCI A to Reactor | 1E12*AOVF041A(a) | 1DRB*222A |
| LPCI B to Reactor | 1E12*AOVF041B(a) | 1DRB*222B |
| Reactor Bldg. Floor Drain Hdr. | 1DFR*V4 | 1DRB*237A |
| Reactor Bldg. Floor Drain Hdr. | 1DFR*V3 | 1DRB*237A |
| Reactor Bldg. Floor Drain Hdr. | 1DFR*V1 | 1DRB*237B |
| Reactor Bldg. Floor Drain Hdr. | 1DFR*V2 | 1DRB*237B |
| Reactor Bldg. Equip. Drain Hdr. | 1DER*V14 | 1DRB*240A |
| Reactor Bldg. Equip. Drain Hdr. | 1DER*V15 | 1DRB*240A |
| Reactor Bldg. Equip. Drain Hdr. | 1DER*V16 | 1DRB*240B |
| Reactor Bldg. Equip. Drain Hdr. | 1DER*V17 | 1DRB*240B |
| Service Air Supply | 1SAS*V487 | 1DRB*245 |
| Instr. Air Supply | 1IAS*V78 | 1DRB*247 |
| RPCCW Supply | 1CCP*V119 | 1DRB*250 |
| Service Water Supply | 1SWP*RV119 | 1DRB*254 |
| SLCS Injection | 1C41*VEXF004A | 1DRB*256 |
| SLCS Injection | 1C41*VEXF004B | 1DRB*256 |
| SLCS Injection | 1C41*VF006 | 1DRB*256 |
| SLCS Injection | 1C41*VF007 | 1DRB*256 |
| RPCCW Return | 1CCP*V133 | 1DRB*251 |
| Air Sup. for Main Steam SRV | 1B21*VF036A | 1DRB*2107 |
| Air Sup. for Main Steam SRV | 1B21*VF036F | 1DRB*2107 |
| Air Sup. for Main Steam SRV | 1B21*VF036G | 1DRB*2107 |
| Air Sup. for Main Steam SRV | 1B21*VF036P | 1DRB*2107 |
| Air Sup. for Main Steam SRV | 1B21*VF039C | 1DRB*2107 |
| Air Sup. for Main Steam SRV | 1B21*VF039H | 1DRB*2107 |
| Air Sup. for Main Steam SRV | 1B21*VF039K | 1DRB*2107 |
| Air Sup. for Main Steam SRV | 1B21*VF039S | 1DRB*2107 |
| Air Sup. for Main Steam SRV | 1B21*VF036J | 1DRB*2112 |
| Air Sup. for Main Steam SRV | 1B21*VF036L | 1DRB*2112 |
| Air Sup. for Main Steam SRV | 1B21*VF036M | 1DRB*2112 |
| Air Sup. for Main Steam SRV | 1B21*VF036N | 1DRB*2112 |
| Air Sup. for Main Steam SRV | 1B21*VF036R | 1DRB*2112 |
| Air Sup. for Main Steam SRV | 1B21*VF039B | 1DRB*2112 |
| Air Sup. for Main Steam SRV | 1B21*VF039D | 1DRB*2112 |
| Air Sup. for Main Steam SRV | 1B21*VF039E | 1DRB*2112 |
| Recirc. Pump Seal Water Sup. | 1B33*VF013A | 1DRB*2133 |
| Recirc. Pump Seal Water Sup. | 1B33*VF017A | 1DRB*2133 |
| Recirc. Pump Seal Water Sup. | 1B33*VF013B | 1DRB*2135 |
| Recirc. Pump Seal Water Sup. | 1B33*VF017B | 1DRB*2135 |

(a) Testable check valve.

(b) Receives a remote manual isolation signal.

(c) Valve groups are designated in Table 3.3.6.1-2

TR 3.6.3.5 Drywell Air Temperature

-----NOTE-----
The following surveillance Note applies to the identified SR of
Technical Specification LCO 3.6.5.5.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY | | | | | | | | | | |
|--|---------------------------------------|---------|----------|-------------------------------------|----------|---------------------------------------|----------|---------------------------------------|----------|---------------------------------------|--|
| <p>SR 3.6.5.5.1 -----NOTE-----</p> <p>Technical Specification SR 3.6.5.5.1 shall be the arithmetical average of the temperatures at the following locations.</p> <table> <tr> <th>ELEVATION</th><th>AZIMUTH</th></tr> <tr> <td>a. ~145'</td><td>$20^{\circ} \leq A \leq 60^{\circ}$</td></tr> <tr> <td>b. ~145'</td><td>$100^{\circ} \leq A \leq 150^{\circ}$</td></tr> <tr> <td>c. ~145'</td><td>$190^{\circ} \leq A \leq 265^{\circ}$</td></tr> <tr> <td>d. ~145'</td><td>$290^{\circ} \leq A \leq 330^{\circ}$</td></tr> </table> <p>-----</p> | ELEVATION | AZIMUTH | a. ~145' | $20^{\circ} \leq A \leq 60^{\circ}$ | b. ~145' | $100^{\circ} \leq A \leq 150^{\circ}$ | c. ~145' | $190^{\circ} \leq A \leq 265^{\circ}$ | d. ~145' | $290^{\circ} \leq A \leq 330^{\circ}$ | |
| ELEVATION | AZIMUTH | | | | | | | | | | |
| a. ~145' | $20^{\circ} \leq A \leq 60^{\circ}$ | | | | | | | | | | |
| b. ~145' | $100^{\circ} \leq A \leq 150^{\circ}$ | | | | | | | | | | |
| c. ~145' | $190^{\circ} \leq A \leq 265^{\circ}$ | | | | | | | | | | |
| d. ~145' | $290^{\circ} \leq A \leq 330^{\circ}$ | | | | | | | | | | |

TR 3.7 PLANT SYSTEMS

TR 3.7.1 Standby Service Water (SSW) System and Ultimate Heat Sink (UHS)

In MODES 4 and 5, the OPERABILITY requirements of the SSW System and UHS are determined by the systems they support.

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SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|-----------|
| TSR 3.7.1.1 | Verify the water level of UHS cooling tower basin is $\geq 78\%$. | 24 hours |
| TSR 3.7.1.2 | Verify the average water temperature of UHS is $\leq 88^{\circ}\text{F}$. | 24 hours |
| TSR 3.7.1.3 | Operate each cooling tower fan cell for ≥ 15 minutes. | 31 days |
| TSR 3.7.1.4 | Verify each required SSW subsystem manual, power operated, and automatic valve in the flow path servicing required OPERABLE safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position. | 31 days |
| TSR 3.7.1.5 | Verify each SSW subsystem actuates on an actual or simulated initiation signal. | 18 months |

TR 3.7.2 Control Room Fresh Air (CRFA) System

SURVEILLANCE REQUIREMENTS

-----NOTE-----
The following surveillance Note applies to the identified SR of Technical
Specification LCO 3.7.2.

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| SR 3.7.2.3 -----NOTE----- This SR includes verification that the isolation valves close in ≤ 30 seconds. ----- | |

TR 3.7.3 Control Room Air Conditioning (AC) System

-----NOTE-----
The following surveillance requirement applies to Technical Specification LCO
3.7.3. Failure to meet this surveillance requirement requires entry into
Technical Specification LCO 3.7.3.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.7.3.1 (Not Used) | |
| TSR 3.7.3.2 Verify the SSW fill valves isolate on a LOCA signal. | 18 months |

TR 3.7.5 Main Turbine Bypass System

SURVEILLANCE REQUIREMENTS

-----NOTE-----
The following surveillance Note applies to the identified SR of Technical
Specification LCO 3.7.5.

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| <p>SR 3.7.5.3 -----NOTE----- The TURBINE BYPASS SYSTEM RESPONSE TIME is to be within the following limits:</p> <p>a. 0.3 seconds to 80% valve capacity per TS definition part a, and</p> <p>b. 0.1 seconds to initiate opening per TS definition part b. -----</p> | |

TR 3.7.7 Snubbers

TLCO 3.7.7 All required snubbers shall be OPERABLE. The only snubbers excluded from this requirement are those installed on nonsafety-related systems and then only if their failure or failure of the system on which they are installed would have no adverse effect on any safety-related system.

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

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each required snubber

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| A. One or more required snubbers inoperable on a system | A.1 Replace or restore the inoperable snubber(s) to OPERABLE status, | 72 hours |
| | AND A.2 Perform engineering evaluations per the applicable section of the approved ISI Program. | 72 hours |
| B. Required Action and associated Completion Time for Condition A not met. | B.2 Declare the attached system inoperable | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| <p>TSR 3.7.7.1 -----NOTE----- Only a previously approved revision of the ISI Program may be implemented. Subsequent revisions to the program shall be submitted to the NRC in accordance with the requirements of 10 CFR 50.55a(g). ----- Each required snubber shall be demonstrated to be OPERABLE by implementing the examination and test requirements of the approved ISI Program.</p> | As specified in the approved ISI program |

TR 3.7.8 Sealed Source Contamination

TLCO 3.7.8 Each sealed source containing radioactive material in excess of either 100 microcuries of beta and/or gamma emitting material or 10 microcuries of alpha emitting material shall be free of greater than or equal to 0.005 microcuries of removable contamination.

APPLICABILITY: At all times.

ACTIONS

NOTES

1. Separate Condition entry is allowed for each sealed source
2. The provisions of TLCO 3.0.4 are not applicable.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-------------------------|
| A. With a sealed source having removable contamination in excess of the above limit | A.1 withdraw the sealed source from use | Immediately |
| | <u>AND</u> | |
| | A.2.1 Decontaminate and repair the sealed source | Prior to subsequent use |
| | <u>OR</u> | |
| | A.2.2 Dispose of the sealed source in accordance with Commission Regulations. | Not specified |
| | <u>AND</u> | |
| | A.3 Prepare and submit to the Commission a report of Condition entry. | 12 months |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| <p>TSR 3.7.8.1 -----NOTES-----</p> <ol style="list-style-type: none"> 1. The test method shall have a detection sensitivity of at least 0.005 microcuries per test sample. 2. Applicable to all sealed sources containing radioactive material excluding startup sources and fission detectors previously subjected to core flux: <ol style="list-style-type: none"> a. With a half-life greater than 30 days, excluding Hydrogen 3, and b. In any form other than gas 3. <u>Stored</u> sealed sources and fission detectors are <u>only</u> required to be tested prior to use or transfer to another licensee, unless tested within the previous six months. 4. Sealed sources and fission detectors transferred without a certificate indicating the last test date shall be tested prior to being placed into use 5. Tests shall be performed by: <ol style="list-style-type: none"> a. The licensee, or b. Other persons specifically authorized by the Commission or an Agreement State. <p>-----</p> <p>Each sealed source shall be tested for leakage and/or contamination.</p> | <p>184 days</p> <p><u>AND</u></p> <p>Each sealed startup source and fission detector shall be tested within 31 days prior to being subjected to core flux or installed in the core and following repair of or maintenance to the source</p> |

3.7.9.1 Fire Suppression Systems

-----NOTE-----
The Operating License, NPF-47, may require prior NRC approval for changes to this Technical Requirement.

TLCO 3.7.9.1 The fire suppression water system shall be OPERABLE with:

- a. Three fire suppression pumps, each with a capacity of 1500 gpm, with their discharges aligned to the fire suppression header, and for the diesel pumps,
 - 1. 300 gallons of fuel in the fuel day tank, and
 - 2. Each diesel starting 24 Volt battery bank and charger OPERABLE,
- b. Two separate fire water tanks, each with a minimum contained volume of 253,000 gallons, and
- c. An OPERABLE flow path capable of taking suction from both water storage tanks and transferring the water through distribution piping with OPERABLE sectionalizing control or isolation valves to the yard hydrant curb valves, the last valve ahead of the water flow alarm device on each sprinkler or hose standpipe, and the last valve ahead of the deluge valve on each deluge or spray system, required to be OPERABLE per Requirements 3.7.9.5, 3.7.9.4, and 3.7.9.2.

APPLICABILITY: At all times.

ACTIONS

-----NOTE-----
The provisions of TLCO 3.0.4 are not applicable.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--------------------------------|--|-----------------|
| A. One pump inoperable | A.1 Restore the inoperable pump to OPERABLE status | 7 days |
| | OR | |
| | A.2 Provide an alternate backup pump | 7 days |
| B. One water supply inoperable | B.1 Restore the inoperable water supply to OPERABLE status | 7 days |
| | OR | |
| | B.2 Provide an alternate backup supply | 7 days |

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| C. Fire suppression water system otherwise inoperable | C.1 Establish a backup fire suppression water system | 24 hours |
| D. Required Action and associated Completion Times of Conditions A, B, or C not met. | -----NOTE----- TLCO 3.0.3 shall not be applied to this Condition ----- | |
| | D.1 Be in MODE 3 | 12 hours |
| | <u>AND</u> D.2 Be in MODE 4 | 36 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.7.9.1.1. Verify the minimum contained water supply volume. | 7 days |
| TSR 3.7.9.1.2. Verify that the battery bank electrolyte level of each cell is above the plates | 7 days |
| TSR 3.7.9.1.3. Verify that the overall battery bank voltage is greater than or equal to 24 volts. | 7 days |
| TSR 3.7.9.1.4. Start the electric motor driven fire suppression pump and operate it for at least 15 minutes on recirculation flow. | 31 days |
| TSR 3.7.9.1.5. Verify that each valve (manual, power operated or automatic) in the flow path is in its correct position. | 31 days |
| TSR 3.7.9.1.6. Verify the fuel day tank contains at least 300 gallons of fuel. | 31 days |
| TSR 3.7.9.1.7. Start the diesel driven pumps from ambient conditions and operate each for greater than or equal to 30 minutes on recirculation flow. | 31 days |
| TSR 3.7.9.1.8. At least once per 92 days verify that a sample of diesel fuel from the fuel storage tank, obtained in accordance with ASTM D270-75, is within the acceptable limits specified in Table 1 of ASTM D975-77 when checked for viscosity, water, and sediment. | 92 days |
| TSR 3.7.9.1.9. Verify that the battery bank specific gravity is appropriate for continued service of the battery. The specific gravity, corrected to 77°F and full electrolyte level, shall be greater than or equal to 1.200. | 92 days |
| TSR 3.7.9.1.10. Cycle each testable valve in the flow path through at least one complete cycle of full travel. | 12 months |

(continued)

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.7.9.1.11 Perform a system functional test which includes simulated automatic actuation of the system throughout its operating sequence. | 18 months |
| TSR 3.7.9.1.12 Verify that each fire suppression pump develops at least 2250 gpm at a system head of 248 feet. | 18 months |
| TSR 3.7.9.1.13 Cycle each valve in the flow path, that is not testable during plant operation, through at least one complete cycle of full travel | 18 months |
| TSR 3.7.9.1.14 Verify that each fire suppression pump starts sequentially to maintain the fire suppression water system pressure greater than or equal to 70 psig. | 18 months |
| TSR 3.7.9.1.15 -----NOTE----- TSR 3.0.2 is not applicable. ----- Subject the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of service. | 24 months |
| TSR 3.7.9.1.16 Verify that the battery cases and battery racks show no visual indication of physical damage or abnormal deterioration. | 18 months |
| TSR 3.7.9.1.17 Verify that Battery-to-battery and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material. | 18 months |
| TSR 3.7.9.1.18 Perform a flow test of the system in accordance with Chapter 5, Section 11 of the Fire Protection Handbook, 14th Edition, published by the National Fire Protection Association. | 3 years |

TR 3.7.9.2 Spray and/or Sprinkler Systems

-----NOTE-----
The Operating License NPF-47, may require prior NRC approval for changes to this Technical Requirement.

TLCO 3.7.9.2 The following spray and sprinkler systems shall be OPERABLE:

| LOCATION | ELEVATION | SYSTEM IDENTITY |
|---------------------------------------|-------------|-------------------------------|
| a. Control Bldg. Cable Chases | 116'0" | AS-6A |
| | 98'0" | AS-6B |
| | 70'0" | AS-6C, WS-6A, WS-6B, WS-6C |
| | 115'0" | WS-7A, WS-7B |
| b. Cable Tunnels | 67'6"/70'0" | WS-8D, WS-8E, WS-8F, |
| | 67'6"/70'0" | WS-8G, WS-8H, WS-8K, |
| | 67'6"/70'0" | WS-8L, WS-8M, WS-8N |
| c. Auxiliary Bldg., RCIC Pump Room | 70'0" | PS-1, WS-19 |
| | 141'0" | WS-4A, WS-4B, WS-20, AS-12 |
| d. Diesel Generator Bldg. | 98'0" | PS-2A, PS-2B, PS-2C |
| e. Fuel Bldg. | 95'0" | AS-5 |
| | 148'0" | WS-5A, WS-5B |

APPLICABILITY: Whenever equipment protected by the spray or sprinkler systems is required to be OPERABLE.

ACTIONS

-----NOTE-----

Separate Condition entry is allowed for each required spray or sprinkler system.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|-----------------|
| A. One or more of the above required spray or sprinkler systems inoperable. | A.1 Establish a continuous fire watch with backup fire suppression equipment for those areas in which redundant systems or components could be damaged | 1 hour |
| | AND | |
| | A.2 Establish an hourly fire watch patrol for other areas. | 1 hour |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---------------|---|-----------|
| TSR 3.7.9.2.1 | Verify that each valve (manual, power operated or automatic) in the flow path is in its correct position. | 31 days |
| TSR 3.7.9.2.2 | Cycle each testable valve in the flow path through at least one complete cycle of full travel. | 12 months |
| TSR 3.7.9.2.3 | Perform a system functional test which includes simulated automatic actuation of the automatic systems and verify that the automatic valves in the flow path actuate to their correct positions on a simulated actuation test signal. | 18 months |
| TSR 3.7.9.2.4 | Cycle each valve in the flow path, that is not testable during plant operation, through at least one complete cycle of full travel. | 18 months |

(continued)

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.7.9.2.5 Perform a visual inspection of the dry pipe spray and sprinkler headers to verify their integrity. | 18 months |
| TSR 3.7.9.2.6 -----NOTE----- The charcoal filter system spray nozzles need only be visually inspected and verified to be unobstructed each time the charcoal is changed ----- Perform a visual inspection of each deluge nozzle's spray area to verify that the spray pattern is not obstructed. | 18 months |
| TSR 3.7.9.2.7 -----NOTE----- The charcoal filter system spray nozzles need only be visually inspected and verified to be unobstructed each time the charcoal is changed ----- Perform an air or water flow test through each open head spray and sprinkler header system and verify that each open head spray nozzle and sprinkler header system is unobstructed. | 3 years |

TR 3.4 REACTOR COOLANT SYSTEM

TR 3.4.1 Recirculation Loop Operating

-----NOTE-----
The following surveillance requirement applies to Technical Specification LCO 3.4.1. Failure to meet this surveillance requirement requires entry into Technical Specification LCO 3.4.1.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| TSR 3.4.1.1 and TSR 3.4.1.2 (Not Used) | |
| <p>TSR 3.4.1.3</p> <p>-----NOTES-----</p> <p>1. Only required to be performed once in an operating cycle.</p> <p>2. Detector levels A and C of one LPRM string per core octant plus detectors A and C of one LPRM string in the center of the core should be monitored</p> <p>-----</p> <p>Establish a baseline APRM and LPRM neutron flux noise value.</p> | <p>Within 2 hours after entry into and operation in Technical Specification LCO 3.4.1 Condition C.</p> |

TR 3.4.1.1 Recirculation Loop Operating (Single Loop)

TLCO 3.4.1.1 One recirculation loop shall be operating with:

- a. A volumetric loop flow rate \leq 33000 gpm,
- b. The recirculation loop flow control system in the loop Manual (Position Control) Mode,
- c. Single Loop setpoints per TLCO 3.3.2.1.

-----NOTE-----
Required setpoint modifications for single recirculation loop operation may be delayed for up to 12 hours after transition from two recirculation loop operation to single loop operation.

APPLICABILITY: MODES 1 and 2, with only one recirculation pump operating.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------|
| A. Volumetric loop flow rate greater than the above limit. | A.1 Initiate action to reduce flow. | Immediately |
| | AND A.2 Be within above flow rate limit. | 1 hour |
| B. Flow control not in Loop Manual. | B.1 Initiate action to place flow control in Loop Manual. | Immediately |
| | AND B.2 Place flow control in Loop Manual. | 1 hour |
| C. Required setpoint modification not performed. | C.1 Declare associated limit(s) and setpoint(s) not met. | Immediately |

Recirculation Loops Operating (Single Loop)
TR 3.4.1.1

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---------------|--|---|
| TSR 3.4.1.1.1 | Verify volumetric loop flow rate of the loop in operation is ≤ 33000 gpm. | Initially, within 1 hour and once per 12 hours thereafter |
| TSR 3.4.1.1.2 | Verify THERMAL POWER is $\leq 70\%$ RTP. | Initially, within 1 hour and once per 12 hours thereafter |
| TSR 3.4.1.1.3 | Verify flow control is in Loop Manual. | Initially, within 1 hour and once per 12 hours thereafter |

TR 3.4.4 Stuck Open Safety/Relief Valves (S/RVs)

TLCO 3.4.4 S/RVs shall reclose after lifting

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|-----------------|
| A. One or more S/RVs stuck Open | A.1 Close the SR/V. | Immediately |
| B. Condition A with Suppression pool temperature $\geq 105^{\circ}\text{F}$. | B.1 Place the reactor Mode switch in SHUTDOWN. | Immediately |

TR 3.4.5 RCS Operational LEAKAGE

-----NOTE-----
The following surveillance requirements apply to Technical Specification LCO 3.4.5. Failure to meet these surveillance requirements requires evaluation of Technical Specification LCO 3.4.5. Evaluate equipment inoperabilities per Technical Specification 3.4.7, as applicable.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|-----------|
| TSR 3.4.5.1 | Monitor Drywell sump flow rates. | 12 hours |
| TSR 3.4.5.2 | Monitor Drywell atmospheric particulate radioactivity. | 12 hours |
| TSR 3.4.5.3 | Monitor Drywell air cooler condensate flow rate. | 12 hours |
| TSR 3.4.5.4 | Monitor the reactor vessel head flange leak detection system. | 24 hours |

TR 3.4.6 Reactor Coolant System Pressure Isolation Valves

-----NOTE-----
The following surveillance Note applies to the identified SR of Technical Specification LCO 3.4.6.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| SR 3.4.6.1 -----NOTE----- Technical Specification SR 3.4.6.1 is performed at an 18 month frequency. ----- | 18 months |

TABLE 3.4.6-1
REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVES

| SYSTEM | VALVE NUMBER | FUNCTION |
|---------|---------------|--------------------------------|
| 1. LPCS | 1E21*AOVF006 | LPCS Injection |
| | 1E21*MOVFO05 | LPCS Injection |
| 2. HPCS | 1E22*AOVF005 | HPCS Injection |
| | 1E22*MOVFO04 | HPCS Injection |
| 3. RCIC | 1E51*AOVF065 | RCIC Head Spray |
| | 1E51*MOVFO13 | RCIC Head Spray |
| 4. RHR | 1E12*MOVFO23 | RHR Head Spray |
| | 1E12*AOVF041A | LPCI A Injection |
| | 1E12*MOVFO42A | LPCI A Injection |
| | 1E12*AOVF041B | LPCI B Injection |
| | 1E12*MOVFO42B | LPCI B Injection |
| | 1E12*AOVF041C | LPCI C Injection |
| | 1E12*MOVFO42C | LPCI C Injection |
| | 1E12*MOVFO09 | Shutdown Cooling A & B Suction |
| | 1E12*MOVFO08 | Shutdown Cooling A & B Suction |

TR 3.4.6.1 Reactor Coolant System Pressure Isolation Valve Pressure Monitors

TLCO 3.4.6.1 The high\low pressure interface valve pressure monitors shown in Table 3.4.6.1-1 shall be OPERABLE.

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

ACTIONS

- NOTES-----
1. Separate Condition entry is allowed for each channel.
 2. The provisions of specification TLCO 3.0.4 are not applicable.
-

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-------------------|
| A. One or more pressure monitors inoperable. | A.1 Restore channel to OPERABLE status. | 7 days |
| B. Required Action and associated Completion Time of Condition A not met. | B.1 Verify pressure less than the alarm setpoint. | once per 12 hours |
| | AND B.2 Restore channel to OPERABLE status. | 30 days |
| C. Required Action and associated Completion Time of Condition B not met. | C.1 Be in Mode 3. | 12 hours |
| | AND C.2 Be in Mode 4. | 36 hours |

Reactor Coolant System Pressure Isolation Valve Pressure Monitors
TR 3.4.6.1

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---------------|---|-----------|
| TSR 3.4.6.1.1 | Perform CHANNEL FUNCTIONAL TEST on the high/low pressure interface valves leakage pressure monitor alarm setpoints. | 31 days |
| TSR 3.4.6.1.2 | Perform CHANNEL CALIBRATION on the high/low pressure interface valves leakage pressure monitor setpoints per Table 3.4.6.1-1. | 18 months |

TABLE 3.4.6.1-1
REACTOR COOLANT SYSTEM INTERFACE VALVES
LEAKAGE PRESSURE MONITORS

| <u>INSTRUMENT NUMBER</u> | <u>FUNCTION</u> | <u>NOMINAL ALARM SETPOINT</u> |
|--------------------------|---|-------------------------------|
| 1E21*PTN054 | LPCS Pump Discharge Pressure High | 580 psig |
| 1E22*PTN052 | HPCS Pump Suction Pressure High | 80 psig |
| 1E51*PTN052 | RCIC Pump Suction Pressure High | 77 psig |
| 1E12*PTN053A | RHR A Pump Discharge Pressure High | 474 psig |
| 1E12*PTN053B | RHR B Pump Discharge Pressure High | 474 psig |
| 1E12*PTN053C | RHR C Pump Discharge Pressure High | 474 psig |
| 1E12*PTN057 | RHR Pump Shutdown Cooling Suction Pressure High | 174 psig |

TR 3.4.7 RCS Leakage Detection Instrumentation

-----NOTE-----
The following surveillance requirement applies to Technical Specification LCO
3.4.7 Failure to meet this surveillance requirement requires entry into
Technical Specification LCO 3.4.7.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.4.7.1 - TSR 3.4.7.3 (Not Used) | |
| TSR 3.4.7.4 Flow test the drywell floor drain sump inlet piping for blockage. | 18 months |

TR 3.4.11 RCS Pressure and Temperature (P/T) Limits

TABLE 3.4.11-1
REACTOR VESSEL MATERIAL SURVEILLANCE PROGRAM-WITHDRAWAL SCHEDULE

| <u>CAPSULE NUMBER</u> | <u>VESSEL LOCATION</u> | <u>LEAD FACTOR AT I.D./WT</u> | <u>WITHDRAWAL TIME (EFPY)</u> |
|---------------------------|----------------------------|-----------------------------------|-----------------------------------|
| 1 | 3° | 0.67/0.89 | 6 |
| 2 | 177° | 0.67/0.89 | 15 |
| 3 | 183° | 0.67/0.89 | Standby |

RCS Pressure and Temperature (P/T) Limits(Vessel Hydro)
TR 3.4.11.1

TR 3.4.11.1 RCS Pressure and Temperature (P/T) Limits(Vessel Hdyro)

TLCO 3.4.11.1 RPV heatup/cooldown limit shall be $\leq 10^{\circ}\text{F}$ in any one hour period

Applicability During RCS inservice leak and hydrostatic testing while above the non-nuclear heating limit

ACTIONS

| CONDITION | | REQUIRED ACTION | COMPLETION TIME |
|-----------|---|---|-----------------|
| A | Technical Specification Figure 3.4.11-1 curve bb' exceeded during RCS inservice leak and hydrostatic testing. | A.1 Limit the heatup and cooldown rate to $\leq 10^{\circ}\text{F}$ in any one hour period. | Immediately |

TR 3.4.11.2 Second Recirculation Loop Startup

TLCO 3.4.11.2 When starting a recirculation loop and the other recirculation loop already operating, The operating recirculation loop flow rate shall be maintained within limit.

APPLICABILITY: MODES 1, 2, 3 and 4 with one recirculation pump in operation and a second recirculation loop is to be started.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-----------------|
| A. Operating recirculation loop flow rate greater than the limit. | A.1 Suspend startup of the second recirculation loop. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| TSR 3.4.11.2.1 Verify the operating recirculation loop flow rate is $\leq 16,500$ gpm. | Once within 15 minutes prior to startup of a second recirculation pump |

TR 3.4.13 CHEMISTRY

TLCO 3.4.13 The chemistry of the reactor coolant system shall be maintained within the limits specified in Table 3.4.13-1.

APPLICABILITY: At all times.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|-------------------------------|-----------------|
| A. In MODE 1, with the conductivity, chloride concentration or pH exceeding the limit specified in Table 3.4.13-1. | A.1 Restore to within limits. | 72 hours |
| B. Required Action A.1 and associated Completion Time not met. OR Conductivity or chloride concentration exceeds the limit specified in Table 3.4.13-1 while in MODE 1 for > 336 hours in any 365 day period. | B.1 Be in Mode 2. | 6 hours |
| C. In MODE 2 and 3 with the conductivity, chloride concentration or pH exceeding the limit specified in Table 3.4.13-1. | C.1 Restore to within limits. | 48 hours |

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|--|
| D. Required Action C.1 and associated Completion Time not met. <u>OR</u> The identification while in MODE 1, that conductivity exceeds 10 $\mu\text{mho/cm}$ at 25°C or chloride concentration exceeds 0.5 ppm | D.1 Be in Mode 3. <u>AND</u> D.2 Be in Mode 4. | 12 hours 36 hours |
| E. At all times other than MODE 1,2 or 3, with the conductivity or pH exceeding the limit specified in Table 3.4.13-1. | E.1 Restore the conductivity and pH to within the limit. | 72 hours |
| F. At all times other than MODE 1,2 or 3, with the chloride concentration exceeding the limit specified in Table 3.4.13-1. | F.1 Restore chloride concentration to within limit. | 24 hours |
| G. Required Action F.1 and associated Completion Time not met. | G.1 Perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the reactor coolant system. | Prior to exceeding 200°F RCS temperature. |

SURVEILLANCE REQUIREMENTS

-----NOTE-----
The reactor coolant shall be determined to be within the specified chemistry limit by performance of the following:

| SURVEILLANCE | FREQUENCY |
|---|--|
| TSR 3.4.13.1 Determine reactor coolant to be within the specified chemistry limit by analyzing a sample of the reactor coolant for chlorides. | 72 hours <u>AND</u> -----NOTE----- When conductivity is greater than the limit in Table 3.4.13-1. ----- 8 hours |
| TSR 3.4.13.2 Determine reactor coolant to be within the specified chemistry limit by analyzing a sample of the reactor coolant for conductivity. | 72 hours. |
| TSR 3.4.13.3 Determine reactor coolant to be within the specified chemistry limit by analyzing a sample of the reactor coolant for pH. | 72 hours <u>AND</u> -----NOTE----- When conductivity is greater than the limit in Table 3.4.13-1. ----- 8 hours |
| TSR 3.4.13.4 -----NOTE----- Not required to be met when obtaining in-line conductivity measurements per TSR 3.4.13.5 ----- Record the conductivity of the reactor coolant. | Continuously |

continued

| SURVEILLANCE | FREQUENCY |
|---|---|
| TSR 3.4.13.5 -----NOTE----- Not required to be met when the continuous recording conductivity monitor is operable. ----- Obtain an in-line conductivity measurement. | 4 hours in MODE 1, 2 or 3 <u>AND</u> 24 hours |
| TSR 3.4.13.6 -----NOTE----- Not required to be met when obtaining in-line conductivity measurements per TSR 3.4.13.5 ----- Perform a CHANNEL CHECK of the continuous conductivity monitor with an in-line flow cell. | 7 days <u>AND</u> -----NOTE----- When conductivity is greater than the limit in Table 3.4.13-1. ----- 24 hours |

TABLE 3.4.13-1
REACTOR COOLANT SYSTEM
CHEMISTRY LIMITS

| MODE | CHLORIDES | CONDUCTIVITY (μ mhos/cm @25°C) | pH |
|--------------------|----------------|--|-------------------------------|
| 1 | ≤ 0.2 ppm | ≤ 1.0 | $5.6 \leq \text{pH} \leq 8.6$ |
| 2 and 3 | ≤ 0.1 ppm | ≤ 2.0 | $5.6 \leq \text{pH} \leq 8.6$ |
| At all other times | ≤ 0.5 ppm | ≤ 10.0 | $5.3 \leq \text{pH} \leq 8.6$ |

TR 3.4.14 Structural Integrity

TLCO 3.4.14 The structural integrity of ASME Code Class 1, 2 and 3 components shall be maintained in accordance with the ISI Program per TR 5.5.6.

APPLICABILITY: MODE 1, 2, 3, 4 and 5.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. The structural integrity of any ASME Code Class 1 component(s) not conforming to the above requirements. | A.1 Isolate the affected component(s). | Prior to increasing the Reactor Coolant System temperature more than 50°F above the minimum temperature required by NDT considerations. |
| B. The structural integrity of any ASME Code Class 2 component(s) not conforming to the above requirements. | B.1 Isolate the affected component(s). | Prior to increasing the Reactor Coolant System temperature above 200°F. |
| C. The structural integrity of any ASME Code Class 3 component(s) not conforming to the above requirements. | C.1 Isolate the affected component(s) from service. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| TSR 3.4.14.1 Perform required ISI surveillances on ASME class 1, 2, and 3 components per TR 5.5.6. | As specified by the Inservice Inspection Program. |

TR 3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS) AND REACTOR CORE ISOLATION
COOLING (RCIC) SYSTEM

TR 3.5.1 ECCS - Operating

Table 3.5.1-1
ECCS RESPONSE TIMES

| SUBSYSTEM | TIME (seconds) |
|--------------|----------------|
| HPCS | 27 |
| LPCS | 37 |
| LPCI A, B, C | 37 |

TR 3.5.1.1 ECCS - Operating (keep fill)

TLCO 3.5.1.1 The ECCS discharge line pressure (keep filled) alarm instrumentation shall be OPERABLE.

APPLICABILITY: When associated ECCS is OPERABLE per LCO 3.5.1, or LCO 3.5.2

ACTIONS

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

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|------------------|
| A. One or more ECCS discharge line "keep filled" pressure alarm instrumentation channels inoperable. | A.1 Perform SR 3.5.1.1 for the associated ECCS system(s). | Once per 24 Hour |

TR 3.5.4 Suppression Pool Pumpback System (SPPS)

TLCO 3.5.4 Two Suppression Pool Pumpback Systems shall be OPERABLE, each consisting of:

- a. at least one OPERABLE crescent area sump pump and
- b. an OPERABLE flow path to the suppression pool.

APPLICABILITY: MODE 1, 2, and 3

When Suppression Pool level is required to be maintained per SR 3.5.2.1 or SR 3.5.2.2.a for LCO 3.5.2.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| A. One SPPS subsystem inoperable | A.1 Restore to OPERABLE | 31 days |
| B. Required Action and associated Completion Time for Condition A not met. | B.1 Perform TSR 3.5.4.1 and TSR 3.5.4.2. | 31 days |
| C. Both required SPPS subsystems inoperable | C.1 Restore one subsystem to OPERABLE | 7 days |
| D. Required Action and associated Completion Time for Condition C not met in MODES 1, 2, or 3. | D.1 Be in MODE 3 | 12 hours |
| | <u>AND</u> D.2 Be in MODE 4 | 36 hours |

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|------------------------------|
| E. Required Action and associated Completion Time for Condition C not met when suppression pool level is being maintained for LCO 3.5.2. | E.1 Provide an alternate pumpback method | 24 hours |
| | <u>AND</u> | |
| | E.2 Demonstrate the OPERABILITY of an alternate pumpback method. | once per 24 hours thereafter |
| | <u>OR</u> | |
| | E.3.1 Suspend CORE ALTERATIONS | Immediately |
| | <u>AND</u> | |
| | E.3.2 Suspend operations with a potential for draining the reactor vessel (OPDRVs) | Immediately |
| | <u>AND</u> | |
| | E.3.3 Lock the reactor mode switch in SHUTDOWN | Immediately |
| | <u>AND</u> | |
| | E.4 Establish compliance with LCO 3.6.1.10, Primary Containment - Shutdown. | 8 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.5.4.1 Perform a functional test of each crescent area sump pump verifying it develops 50 gpm. | 92 days |
| TSR 3.5.4.2 Verify the flow path can be aligned to the suppression pool. | 92 days |

TR 3.6 CONTAINMENT SYSTEMS

TR 3.6.1.1 Primary Containment - Operating

SR 3.6.1.1 DELETED

TABLE 3.6.1.1-1
ANNULUS BYPASS LEAKAGE PATHS

1. LEAKAGE PATHS TO THE FUEL BUILDING

PENETRATION

Containment air lock

1JRB*DRA2

2. LEAKAGE PATHS TO THE AUXILIARY BUILDING

PENETRATION

VALVE NO.
(DIV. I)

VALVE NO.
(DIV. II)

1KJB*Z31

1HVR*AOV165

1HVR*AOV123

1KJB*601E

1SSR*SOV133

1SSR*SOV134

1KJB*601F

1SSR*SOV140

V706

1KJB*601B

1SSR*SOV131

1SSR*SOV130

Containment air lock

1JRB*DRA1

CRD removal hatch

--

TR 3.6.1.2 Primary Containment Air Locks

TLCO 3.6.1.2 Meet the requirements of Operating License Condition
2.C.(17)

APPLICABILITY: During movement of irradiated fuel assemblies in the primary
containment,
During CORE ALTERATIONS.

ACTIONS

-----NOTES-----

1. Entry and exit is permissible to perform repairs of the affected air lock components.
 2. Separate Condition entry is allowed for each air lock.
-

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-----------------|
| A. Requirements of the TLCO not met. | A.1 Close the affected air lock. | Immediately |
| | <u>OR</u> | |
| | A.2.1 Suspend movement of irradiated fuel assemblies. | Immediately |
| | <u>AND</u> | |
| | A.2.2 Suspend CORE ALTERATIONS. | Immediately |

| TR 3.6.1.2 Primary Containment Air Locks

-----NOTE-----

The following surveillances apply to SR 3.6.1.2.1 of Technical Specification LCO 3.6.1.2. Both listed TSRs are required to be met to meet SR 3.6.1.2.1 per the Primary Containment Leakage Rate Testing Program.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| TSR 3.6.1.2.1.a Pressurize the gap between the air lock door seals to 2 P _a , 7.6 psig, and verify leakage within limits. | -----NOTE----- TSR 3.0.2 is not applicable ----- within 7 days after each primary containment access OR once every 30 days during periods of multiple entries |
| TSR 3.6.1.2.1.b Perform an overall air lock leakage test at 2 P _a , 7.6 psig, and verify that air lock leakage is within limits. | -----NOTE----- TSR 3.0.2 is not applicable ----- 30 months <u>AND</u> prior to entry into MODES 2 or 3 from MODE 4 when the airlock has been used or maintenance has been performed that could affect airlock sealing capability. |

TR 3.6.1.2.1 Primary Containment Air Lock Seal Air Flask Pressure instrumentation

TLCO 3.6.1.2.1 Primary Containment Air Lock Seal Air Flask Pressure instrumentation channels shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3,
During movement of irradiated fuel assemblies in the primary containment,
During CORE ALTERATIONS,
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|-------------------|
| A. With one required channel inoperable | A.1 Restore the channel to OPERABLE. | 7 days |
| B. Required Action and associated completion time not met | B.1 Perform Technical Specification SR 3.6.1.2.2 | once per 12 hours |

TR 3.6.1.3 Primary Containment Isolation Valves

SR 3.6.1.3.9, 3.6.1.3.10, 3.6.1.3.11, 3.6.1.3.12 DELETED

TABLE 3.6.1.3-1 (page 1 of 6)
PRIMARY CONTAINMENT ISOLATION VALVES

| SYSTEM | VALVE NUMBER(a) | PENETRATION NUMBER | VALVE GROUP (l) | MAXIMUM ISOLATION TIME (Seconds) | SECONDARY CONTAINMENT BYPASS PATH (Yes/No) |
|--------------------------------------|---------------------|--------------------|-----------------|----------------------------------|--|
| <u>a. Automatic Isolation Valves</u> | | | | | |
| MSIV | 1B21*AOVF022A(b)(g) | 1KJB*21A | 6 | 5 | No |
| MSIV | 1B21*AOVF022B(b)(g) | 1KJB*21B | 6 | 5 | No |
| MSIV | 1B21*AOVF022C(b)(g) | 1KJB*21C | 6 | 5 | No |
| MSIV | 1B21*AOVF022D(b)(g) | 1KJB*21D | 6 | 5 | No |
| MSIV | 1B21*AOVF028A(g) | 1KJB*21A | 6 | 5 | No |
| MSIV | 1B21*AOVF028B(g) | 1KJB*21B | 6 | 5 | No |
| MSIV | 1B21*AOVF028C(g) | 1KJB*21C | 6 | 5 | No |
| MSIV | 1B21*AOVF028D(g) | 1KJB*21D | 6 | 5 | No |
| Turbine Plant Misc. Drains | 1B21*MOVFO67A(g) | 1KJB*21A | 6 | 17.8 | No |
| Turbine Plant Misc. Drains | 1B21*MOVFO67B(g) | 1KJB*21B | 6 | 16.1 | No |
| Turbine Plant Misc. Drains | 1B21*MOVFO67C(g) | 1KJB*21C | 6 | 15.9 | No |
| Turbine Plant Misc. Drains | 1B21*MOVFO67D(g) | 1KJB*21D | 6 | 19.8 | No |
| Turbine Plant Misc. Drains | 1B21*MOVFO16(b)(g) | 1KJB*22 | 6 | 16.5 | No |
| Turbine Plant Misc. Drains | 1B21*MOVFO19(g) | 1KJB*22 | 6 | 17.6 | No |
| RHR Return to FW | 1E12*MOVFO53A(m) | 1KJB*23A | 5 | 18.7 | No |
| RHR Return to FW | 1E12*MOVFO53B(m) | 1KJB*23B | 5 | 18.7 | No |
| RHR/RCIC Head Supply | 1E12*MOVFO23(b) | 1KJB*219, | 5 | 36.3 | No |
| | | 1DRB*213 | | | |
| RHR Shutdown Cooling Supply | 1E12*MOVFO08 | 1KJB*220 | 5 | 29.7 | No |
| RHR Shutdown Cooling Supply | 1E12*MOVFO09(b) | 1KJB*220 | 5 | 25.3 | No |
| LPCI A to Reactor | 1E12*MOVFO37A(m) | 1KJB*221A | 14 | 73.7 | No |
| LPCI B to Reactor | 1E12*MOVFO37B(m) | 1KJB*221B | 14 | 74.8 | No |
| MS-PLCS Line | 1E33*MOVFO08(d)(k) | 1KJB*21A,B,C, | 4 | 14.5 | No |
| | | D | | | |
| RWCU Disch. to Condenser | 1G33*MOVFO28 | 1KJB*24 | 15 | 20.9 | Yes(f) |
| RWCU Return to FW | 1G33*MOVFO40 | 1KJB*26 | 15 | 24.2 | No |
| RWCU Pump Suction | 1G33*MOVFO01(b) | 1KJB*27 | 16 | 19.8 | No |
| RWCU Pump Disch. | 1G33*MOVFO53 | 1KJB*2129 | 15 | 5.5 | No |
| RWCU Disch. to Condenser | 1G33*MOVFO34 | 1KJB*24 | 15 | 20.9 | Yes(f) |
| RWCU Return to FW | 1G33*MOVFO39 | 1KJB*26 | 15 | 24.2 | No |
| RWCU Pump Suction | 1G33*MOVFO04 | 1KJB*27 | 7 | 6.6 | No |
| RWCU Pump Disch. | 1G33*MOVFO54 | 1KJB*2129 | 15 | 5.5 | No |
| RWCU Backwash Disch. | 1WCS*MOV178 | 1KJB*25 | 1 | 12.1 | Yes(f) |
| RWCU Backwash Disch. | 1WCS*MOV172 | 1KJB*25 | 1 | 12.6 | Yes(f) |
| HPCS Test Return-Supp. Pool | 1E22*MOVFO23(j) | 1KJB*211 | 1 | 50 | No |

continued

TABLE 3.6.1.3-1 (page 2 of 6)
PRIMARY CONTAINMENT ISOLATION VALVES

| SYSTEM | VALVE NUMBER(a) | PENETRATION NUMBER | VALVE GROUP(l) | MAXIMUM ISOLATION TIME (Seconds) | SECONDARY CONTAINMENT BYPASS PATH (Yes/No) |
|--|---------------------|-----------------------|----------------|----------------------------------|--|
| a. Automatic Isolation Valves continued | | | | | |
| RHR A Return-Supp. Pool | 1E12*MOVFO24A(j)(p) | 1KJB*224A | 10 | 63.8 | No |
| RHR A Hx Dump-Supp. Pool | 1E12*MOVFO11A(j)(p) | 1KJB*224A | 10 | 34.1 | No |
| LPCS Test Return-Supp. Pool | 1E21*MOVFO12(j)(p) | 1KJB*224A | 10 | 57.2 | No |
| RHR B Return-Supp. Pool | 1E12*MOVFO24B(j)(p) | 1KJB*224B | 10 | 63.8 | No |
| RHR B Hx Dump-Supp. Pool | 1E12*MOVFO11B(j)(p) | 1KJB*224B | 10 | 30.8 | No |
| RHR C Return-Supp. Pool | 1E12*MOVFO21(j)(p) | 1KJB*224C | 10 | 97.9 | No |
| Fuel Pool C&C Disch. | 1SFC*MOV119 | 1KJB*226 | 1 | 68 | No |
| Fuel Pool C&C Suction | 1SFC*MOV120 | 1KJB*227 | 1 | 62.7 | No |
| Fuel Pool C&C Suction | 1SFC*MOV122 | 1KJB*227 | 1 | 63.8 | No |
| Fuel Pool Purif. Suction | 1SFC*MOV139 | 1KJB*228 | 1 | 39.6 | No |
| Fuel Pool Purif. Suction | 1SFC*MOV121 | 1KJB*228 | 1 | 39.6 | No |
| Floor Drain Disch. | 1DFR*AOV102(b) | 1KJB*235, 1DRB*236 | 1 | N/A | No |
| Floor Drain Disch. | 1DFR*AOV101(b) | 1KJB*235, 1DRB*236 | 1 | N/A | No |
| Equip. Drain Disch. | 1DER*AOV127(L) | 1KJB*238, 1DRB*239 | 1 | N/A | No |
| Equip. Drain Disch. | 1DER*AOV126(b) | 1KJB*238, 1DRB*239 | 1 | N/A | No |
| Fire Protection Hdr. | 1FPW*MOV121 | 1KJB*241 | 1 | 34.1 | Yes(f) |
| Service Air Supply | 1SAS*MOV102 | 1KJB*244 | 1 | 22.0 | Yes(f) |
| Instr. Air Supply | 1IAS*MOV106 | 1KJB*246 | 1 | 18.7 | Yes(f) |
| RPCCW Supply | 1CCP*MOV138 | 1KJB*248 | 1 | 22.0 | No |
| RPCCW Return | 1CCP*MOV158 | 1KJB*249 | 1 | 23.1 | No |
| RPCCW Return | 1CCP*MOV159 | 1KJB*249 | 1 | 24.2 | No |
| Service Water Return | 1SWP*MOV5A(m) | 1KJB*253A | 1 | 50.6 | No |
| Service Water Return | 1SWP*MOV5B(m) | 1KJB*253B | 1 | 53.9 | No |
| Vent. Chilled Water Rtn. | 1HVN*MOV102 | 1KJB*2131 | 1 | 31.9 | Yes(f) |
| Vent. Chilled Water Rtn. | 1HVN*MOV128 | 1KJB*2131 | 1 | 28.6 | Yes(f) |
| Vent. Chilled Water Sup. | 1HVN*MOV127 | 1KJB*2132 | 1 | 27.5 | Yes(f) |
| Condensate Makeup Supply | 1CNS*MOV125 | 1KJB*2134 | 1 | 22.0 | Yes(f) |
| RHR & RCIC Steam Sup. | 1E51*MOVFO63(b) | 1KJB*215 | 2 | 9.9 | No |
| RHR & RCIC Steam Sup. | 1E51*MOVFO76(b) | 1KJB*215 | 2 | 13.4 | No |
| RHR & RCIC Steam Sup. | 1E51*MOVFO64 | 1KJB*215 | 2 | 9.9 | No |
| RCIC Pump Suc.-Supp. Pool | 1E51*MOVFO31(j) | 1KJB*216 | 2 | 30.5 | No |
| RCIC Turbine Exh.-Supp. Pool | 1E51*MOVFO77(q) | 1KJB*217 | 3 | 14.2 | No |
| RCIC Turbine Exh. Vac. Bkrs. | 1E51*MOVFO78 | 1KJB*218B,C | 3 | 16.5 | No |
| Cont./Drywell Purge Sup. | 1HVR*AOV165 | 1KJB*231 | 8 | 3 | No |
| Cont./Drywell Purge Sup. | 1HVR*AOV123 | 1KJB*231 | 8 | 3 | No |
| Cont./Drywell Purge Outlet | 1HVR*AOV128 | 1KJB*233 | 8 | 3 | No |
| Cont./Drywell Purge Outlet | 1HVR*AOV166 | 1KJB*233 | 8 | 3 | No |
| Post-Accident Samp. Sup. | 1SSR*SOV130 | 1KJB*2601B | 10 | 3 | No |
| Post-Accident Samp. Sup. | 1SSR*SOV131 | 1KJB*2601B | 10 | 3 | No |

continued

TABLE 3.6.1.3-1 (page 3 of 6)
PRIMARY CONTAINMENT ISOLATION VALVES

| SYSTEM | VALVE NUMBER(a) | PENETRATION NUMBER | VALVE GROUP(l) | MAXIMUM ISOLATION TIME (Seconds) | SECONDARY CONTAINMENT BYPASS PATH (Yes/No) |
|-----------------------------------|-----------------------|------------------------|----------------|----------------------------------|--|
| b. Manual Isolation Valves | | | | | |
| LPCI A to Reactor | 1E12*F099A | 1KJB*Z21A | | | No |
| LPCI B to Reactor | 1E12*F099B | 1KJB*Z21B | | | No |
| Reactor Plant Vent. DP Trans. | 1HVR*V8(k) | 1KJB*Z602A | | | No |
| Reactor Plant Vent. DP Trans. | 1HVR*V10(k) | 1KJB*Z602B | | | No |
| PVLCs Pressure Transmitter | 1LSV*V64(k) | 1KJB*Z602D | | | No |
| Reactor Plant Vent. DP Trans. | 1HVR*V12(k) | 1KJB*Z602F | | | No |
| Cont. Leakage Monitor Press. | 1LMS*V14 | 1KJB*Z603A | | | No |
| Cont. Leakage Monitor Press. | 1LMS*V12 | 1KJB*Z603A | | | No |
| Cont. Leakage Monitor Press. | 1LMS*V7 | 1KJB*Z603C | | | No |
| Cont. Leakage Monitor Press. | 1LMS*V16 | 1KJB*Z603C | | | No |
| Cont. Monitor Press. Sensing | 1CMS*V2(k) | 1KJB*Z605A | | | No |
| Cont. Monitor Press. Sensing | 1CMS*V3(k) | 1KJB*Z605B | | | No |
| Reactor Plant Vent. DP Trans. | 1HVR*V14(k) | 1KJB*Z606A | | | No |
| Reactor Plant Vent. DP Trans. | 1HVR*V16(k) | 1KJB*Z606B | | | No |
| Cont. Monitor Press. Sensing | 1CMS*V16(k) | 1KJB*Z606C | | | No |
| Cont. Monitor Press. Sensing | 1CMS*V15(k) | 1KJB*Z606D | | | No |
| PVLCs Pressure Transmitter | 1LSV*V65(k) | 1KJB*Z606E | | | No |
| Reactor Plant Vent. DP Trans. | 1HVR*V18(k) | 1KJB*Z606F | | | No |
| LPCI A to Reactor | 1E12*VF044A | 1KJB*Z21A | | | No |
| LPCI B to Reactor | 1E12*VF044B | 1KJB*Z21B | | | No |
| SW Rtn Vacuum Release | 1SWP*SOV522A(e) | 1KJB*Z53A | | | No |
| SW Rtn Vacuum Release | 1SWP*SOV522B(e) | 1KJB*Z53B | | | No |
| SW Rtn Vacuum Release | 1SWP*SOV522C(e) | 1KJB*Z53A | | | No |
| SW Rtn Vacuum Release | 1SWP*SOV522D(e) | 1KJB*Z53B | | | No |
| Feedwater Line | 1FWS*MOV7A(e) | 1KJB*Z3A | | | No(f) |
| Feedwater Line | 1FWS*MOV7B(e) | 1KJB*Z3B | | | No(f) |
| HPCS Pump Suction from Supp. Pool | 1E22*MOVF015(e)(j) | 1KJB*Z8 | | | No |
| HPCS to Reactor | 1E22*MOVF004(b)(e) | 1KJB*Z9, 1DRB*Z10 | | | No |
| HPCS Min. Flow Bypass | 1E22*MOVF012(e)(j) | 1KJB*Z11 | | | No |
| Supp. Pool Pumpback Rtn. | 1DFR*MOV146(e)(j) | 1KJB*Z11 | | | No |
| LPCS Suction from Supp. Pool | 1E21*MOVF001(e)(j) | 1KJB*Z12 | | | No |
| LPCS to Reactor | 1E21*MOVF005(b)(e) | 1KJB*Z13, 1DRB*Z14 | | | No |
| RCIC Turbine Exh. to Supp. Pool | 1E51*MOVF068(e)(q) | 1KJB*Z17 | | | No |
| RCIC Min. Flow Bypass | 1E51*MOVF019(e)(j)(p) | 1KJB*Z18A | | | No |
| RHR/RCIC Head Spray | 1E51*MOVF013(b)(e) | 1KJB*Z19, 1DRB*Z130 | | | No |
| LPCI A to Reactor | 1E12*MOVF027A(e) | 1KJB*Z21A | | | No |
| LPCI A to Reactor | 1E12*MOVF042A(e) | 1KJB*Z21A | | | No |
| LPCI B to Reactor | 1E12*MOVF027B(e) | 1KJB*Z21B | | | No |
| LPCI B to Reactor | 1E12*MOVF042B(e) | 1KJB*Z21B | | | No |
| LPCI C to Reactor | 1E12*MOVF042C(e) | 1KJB*Z21C | | | No |

continued

TABLE 3.6.1.3-1 (page 4 of 6)
PRIMARY CONTAINMENT ISOLATION VALVES

| SYSTEM | VALVE NUMBER(a) | PENETRATION NUMBER | VALVE GROUP (l) | MAXIMUM ISOLATION TIME (Seconds) | SECONDARY CONTAINMENT BYPASS PATH (Yes/No) |
|---|-----------------------|-----------------------|-----------------------|---|---|
| b. Manual Isolation Valves continued | | | | | |
| RHR A Hx V&R to Supp. Pool | 1E12*MOV073A(e)(j)(q) | 1KJB*Z23A | | | No |
| RHR B Hx V&R to Supp. Pool | 1E12*MOV073B(e)(j)(q) | 1KJB*Z23B | | | No |
| RHR A Min. Flow Bypass | 1E12*MOV064A(e)(j)(p) | 1KJB*Z24A | | | No |
| LPCS Min. Flow Bypass | 1E21*MOV011(e)(j)(p) | 1KJB*Z24A | | | No |
| Post-Acc. Sample Return | 1SSR*SOV139(e)(j) | 1KJB*Z23B | | | No |
| RHR B Min. Flow Bypass | 1E12*MOV064B(e)(j)(p) | 1KJB*Z24B | | | No |
| RHR C Min. Flow Bypass | 1E12*MOV064C(e)(j)(p) | 1KJB*Z24C | | | No |
| RHR A Suction-Supp. Pool | 1E12*MOV004A(e)(j) | 1KJB*Z25A | | | No |
| RHR B Suction-Supp. Pool | 1E12*MOV004B(e)(j) | 1KJB*Z25B | | | No |
| RHR C Suction-Supp. Pool | 1E12*MOV105(e)(j) | 1KJB*Z25C | | | No |
| CRD Hydraulic Sys. Sup. | 1C11*MOV083(e) | 1KJB*Z29 | | | No |
| Cont. Hydrogen Purge Outlet | 1CPP*MOV104(e) | 1KJB*Z33 | | | No |
| Cont. Hydrogen Purge Outlet | 1CPP*MOV105(e) | 1KJB*Z33 | | | No |
| SW Supply | 1SWP*MOV507A(e) | 1KJB*Z52A | | | No |
| SW Supply | 1SWP*MOV507B(e) | 1KJB*Z52B | | | No |
| SW Return | 1SWP*MOV81A(e) | 1KJB*Z53A | | | No |
| SW Return | 1SWP*MOV81B(e) | 1KJB*Z53B | | | No |
| SW Return | 1SWP*MOV503A(e) | 1KJB*Z53C | | | No |
| SW Return | 1SWP*MOV503B(e) | 1KJB*Z53D | | | No |
| Air Sup. for Main Steam SRV | 1SVV*MOV1B(e) | 1KJB*Z102 | | | No |
| Air Sup. for Main Steam SRV | 1SVV*MOV1A(e) | 1KJB*Z103 | | | No |
| Cont. Hydrogen Purge Sup. | 1CPP*SOV140(e) | 1KJB*Z31 | | | No |
| Hydrogen Sample Sup. | 1CMS*SOV35D(e) | 1KJB*Z601E | | | No |
| Hydrogen Sample Sup. | 1CMS*SOV31B(e) | 1KJB*Z601E | | | No |
| Hydrogen Sample Rtn. | 1CMS*SOV35B(e) | 1KJB*Z601F | | | No |
| Hydrogen Sample Rtn. | 1CMS*SOV31D(e) | 1KJB*Z601F | | | No |
| Hydrogen Sample Sup. | 1CMS*SOV35C(e) | 1KJB*Z605E | | | No |
| Hydrogen Sample Sup. | 1CMS*SOV31A(e) | 1KJB*Z605E | | | No |
| Hydrogen Sample Rtn. | 1CMS*SOV35A(e) | 1KJB*Z605F | | | No |
| Hydrogen Sample Rtn. | 1CMS*SOV31C(e) | 1KJB*Z605F | | | No |

continued

TABLE 3.6.1.3-1 (page 5 of 6)
PRIMARY CONTAINMENT ISOLATION VALVES

| SYSTEM | VALVE NUMBER(a) | PENETRATION NUMBER | VALVE GROUP(l) | MAXIMUM ISOLATION TIME (Seconds) | SECONDARY CONTAINMENT BYPASS PATH (Yes/No) |
|---|---------------------|----------------------|----------------|----------------------------------|--|
| c. Other Isolation Valves | | | | | |
| Feedwater Line | 1B21*AOVF032A(c) | 1KJB*Z3A | | | Yes(f) |
| Feedwater Line | 1B21*VF010A(b) | 1KJB*Z3A | | | Yes(f) |
| Feedwater Line | 1B21*AOVF032B(c) | 1KJB*Z3B | | | Yes(f) |
| Feedwater Line | 1B21*VF010B(b) | 1KJB*Z3B | | | Yes(f) |
| RWCU Disch. to Condenser | 1WCS*RV144 | 1KJB*Z4 | | | Yes(f) |
| RWCU Backwash Disch. | 1WCS*RV154 | 1KJB*Z5 | | | Yes(f) |
| HPCS to Reactor | 1E22*AOVF005(b)(c) | 1KJB*Z9, 1DRB*Z10 | | | No |
| Supp. Pool Pump-Back Return Line | 1DFR*V181(j) | 1KJB*Z11 | | | No |
| Supp. Pool Pump-Back Return Line | 1DFR*V182(j) | 1KJB*Z11 | | | No |
| HPCS Th. Relief to Supp. Pool | 1E22*RVF014(h) | 1KJB*Z11 | | | No |
| HPCS Th. Relief to Supp. Pool | 1E22*RVF035(h) | 1KJB*Z11 | | | No |
| HPCS Th. Relief to Supp. Pool | 1E22*RVF039(h) | 1KJB*Z11 | | | No |
| LPCS to Reactor | 1E21*AOVF006(b)(c) | 1KJB*Z13, 1DRB*Z14 | | | No |
| RHR/RCIC Head Spray | 1E51*AOVF065(b)(c) | 1KJB*Z19, 1DRB*Z130 | | | No |
| RHR/RCIC Head Spray | 1E51*AOVF066(b)(c) | 1KJB*Z19, 1DRB*Z130 | | | No |
| RHR Shutdown Cooling Sup. | 1RHS*V240 | 1KJB*Z20 | | | No |
| LPCI C to Reactor | 1E12*AOVF041C(b)(c) | 1KJB*Z21C, 1DRB*Z22C | | | No |
| RHR A Hx V&R to Supp. Pool | 1E12*RVF055A(h)(q) | 1KJB*Z23A | | | No |
| RHR A Hx V&R to Supp. Pool | 1E12*RVF025A(h)(q) | 1KJB*Z23A | | | No |
| RHR A Hx V&R to Supp. Pool | 1E12*RVF017A(h)(q) | 1KJB*Z23A | | | No |
| RHR A Hx V&R to Supp. Pool | 1E12*RVF005(h)(q) | 1KJB*Z23A | | | No |
| LPCS Th. Relief to Supp. Pool | 1E21*RVF018(h)(q) | 1KJB*Z23A | | | No |
| LPCS Th. Relief to Supp. Pool | 1E21*RVF031(h)(q) | 1KJB*Z23A | | | No |
| RHR Stm Condensing Th. Relief to Supp. Pool | 1E12*RVF036(h)(q) | 1KJB*Z23A | | | No |
| RHR B Hx V&R to Supp. Pool | 1E12*RVF055B(h)(q) | 1KJB*Z23B | | | No |
| RHR B Hx V&R to Supp. Pool | 1E12*RVF025C(h)(q) | 1KJB*Z23B | | | No |
| RHR B Hx V&R to Supp. Pool | 1E12*RVF025B(h)(q) | 1KJB*Z23B | | | No |
| RHR B Hx V&R to Supp. Pool | 1E12*RVF030(h)(q) | 1KJB*Z23B | | | No |
| RHR B Hx V&R to Supp. Pool | 1E12*RVF101(h)(q) | 1KJB*Z23B | | | No |
| RHR B Hx V&R to Supp. Pool | 1E12*RVF017B(h)(q) | 1KJB*Z23B | | | No |
| Fuel Pool C&C Disch. | 1SFC*V101 | 1KJB*Z26 | | | No |
| Fuel Pool C&C Suction | 1SFC*V350 | 1KJB*Z27 | | | No |
| Fuel Pool Purif. Suction | 1SFC*V351 | 1KJB*Z28 | | | No |
| CRD Hyd. Sys. Sup. | 1C11*VF122 | 1KJB*Z29 | | | No |

continued

TR 3.7.9.3 Halon Systems

-----NOTE-----
The Operating License, NPF-47, may require prior NRC approval for changes to this Technical Requirement.

TLCO 3.7.9.3 The following main control room Power Generation Control Complex (PGCC) Halon systems shall be OPERABLE with the storage tanks having at least 95% of full charge weight and 90% of full charge pressure:

| | |
|------------------------|------------------------|
| PGCC Panel Module U701 | PGCC Panel Module U730 |
| PGCC Panel Module U702 | PGCC Panel Module U731 |
| PGCC Panel Module U703 | PGCC Panel Module U732 |
| PGCC Panel Module U704 | PGCC Panel Module U740 |
| PGCC Panel Module U710 | PGCC Panel Module U741 |
| PGCC Panel Module U711 | PGCC Panel Module U742 |
| PGCC Panel Module U712 | PGCC Panel Module U743 |
| PGCC Panel Module U713 | PGCC Panel Module U744 |
| PGCC Panel Module U714 | PGCC Panel Module U745 |
| PGCC Panel Module U715 | PGCC Panel Module U746 |
| PGCC Panel Module U717 | PGCC Panel Module U747 |
| PGCC Panel Module U720 | PGCC Panel Module U748 |
| PGCC Panel Module U721 | PGCC Panel Module U799 |
| PGCC Panel Module U723 | PGCC Panel Module U750 |

APPLICABILITY: Whenever equipment protected by the Halon systems is required to be OPERABLE.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each required Halon system.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| A. One or more of the above required Halon systems inoperable. | A.1 Establish a continuous fire watch with backup fire suppression equipment for those areas in which redundant systems or components could be damaged | 1 hour |
| | <u>AND</u> | |
| | A.2 Establish an hourly fire watch patrol for other areas. | 1 hour |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.7.9.3.1. Verify that each Halon system storage tank is pressurized to at least 280 psig. | 31 days |
| TSR 3.7.9.3.2. Verify Halon storage tank weight and pressure. | 6 months |
| TSR 3.7.9.3.3 -----NOTE----- Actual Halon release, Halon bottle initiator valve actuation, and electro-thermal link burning may be excluded from the test ----- Verify the system actuates, manually and automatically, upon receipt of a simulated actuation signal. | 18 months |
| TSR 3.7.9.3.4 Perform a flow test through headers and nozzles to assure no blockage. | 18 months |

TR 3.7.9.1 Fire Hose Stations

-----NOTE-----
The Operating License, NPF-47, may require prior NRC approval for changes to
this Technical Requirement.

TLCO 3.7.9.4 The fire hose stations shown in Table 3.7.9.4-1 shall be
OPERABLE.

APPLICABILITY: Whenever equipment in the areas protected by the fire hose
stations is required to be OPERABLE.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each required fire hose station.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|---|
| A. One or more of the fire hose stations shown in Table 3.7.9.4-1 inoperable | A.1 -----NOTES----- 1. Where it can be demonstrated that the physical routing of the fire hose would result in a recognizable hazard to operating technicians, plant equipment, or the hose itself, the fire hose shall be stored in a roll at the outlet of the OPERABLE hose station. | |
| | 2. Connection at the OPERABLE hose station shall be configured to maintain hose stream protection in both areas. | |
| | ----- Provide a length of hose, sufficient to provide coverage for the area left unprotected by the inoperable hose station, connected at the nearest OPERABLE hose station(s). | 1 hour when the inoperable fire hose is the primary means of fire suppression |
| | AND | AND 24 hours |
| | A.2 Mount a sign on or near the hose valve(s) identifying the proper hose to use. | 1 hour when the inoperable fire hose is the primary means of fire suppression |
| | | AND 24 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.7.9.4.1. Perform a visual inspection of the fire hose stations accessible during plant operation to assure all required equipment is at the station. | 31 days |
| TSR 3.7.9.4.2 Perform a visual inspection of the fire hose stations not accessible during plant operation to assure all required equipment is at the station. | 18 months |
| TSR 3.7.9.4.3 Remove the hose for inspection and re-racking, and inspect all gaskets and replace any degraded gaskets in the couplings. | 18 months |
| TSR 3.7.9.4.4 Partially open each hose station valve to verify valve OPERABILITY and no flow blockage. | 3 years |
| TSR 3.7.9.4.5 Conduct a hose hydrostatic test at a pressure of 150 psig or at least 50 psig above the maximum fire main operating pressure, whichever is greater. | 3 years |

TABLE 3.7.9.4-1 (page 1 of 1)
FIRE HOSE STATIONS

| <u>LOCATION</u> | <u>ELEVATION</u> | <u>HOSE RACK INDENTIFICATION</u> |
|-----------------------|--------------------|--------------------------------------|
| a. Reactor Building | 114'0" | HR - 16, 22 |
| | 141'0" | HR - 17, 23 |
| | 162'3" | HR - 18, 19, 24, 25 |
| | 186'3" | HR - 20, 21, 26 |
| b. Auxiliary Building | 70'0" (Stairwell) | HR - 84 |
| | 95'9" | HR - 6, 7, 8, 9 |
| | 114'0" | HR - 10, 11 |
| | 141'0" | HR - 12, 13, 14, 15 |
| | 170'0" | HR - 80 |
| c. Control Building | 70'0" | HR - 85, 86, 87 |
| | 98'0" | HR - 88, 89, 90 |
| | 115'0" and 116'0" | HR - 91, 92, 93, 94 |
| | 135'0" (Stairwell) | HR - 96 |
| d. Fuel Building | 70'0" | HR - 1, 2, 82 |
| | 95'0" | HR - 3, 4 |
| | 113'0" | HR - 81 |
| | 148'0" | HR - 5 |
| e. Pipe Tunnel | 67'6" | HR - 83 |
| f. Turbine Building | 95'0" | HR - 50, 51 |
| | 123'6" | HR - 53 |

TR 3.7.9.5 Yard Fire Hydrants and Hydrant Hose Houses

-----NOTE-----
The Operating License, NPF-47, may require prior NRC approval for changes to this Technical Requirement.

TLCO 3.7.9.5 The yard fire hydrants and associated hydrant hose houses shown in Table 3.7.9.5-1 shall be OPERABLE.

APPLICABILITY: Whenever equipment in the areas protected by the yard fire hydrants is required to be OPERABLE.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each required yard fire hydrant and hydrant hose station.

| CONDITION | | REQUIRED ACTION | COMPLETION TIME |
|-----------|---|---|---|
| A | One or more of the yard fire hydrants or associated hydrant hose houses shown in Table 3.7.9.5-1 inoperable | A.1 Have sufficient additional lengths of 2 1/2 inch diameter hose located in an adjacent OPERABLE hydrant hose house to provide service to the unprotected area(s) | 1 hour when the inoperable fire hydrant or associated hydrant hose house is the primary means of fire suppression |
| | | | AND 24 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.7.9.5.1. Perform a visual inspection of the hydrant nose house to assure all required equipment is at the nose house. | 31 days |
| TSR 3.7.9.5.2. Visually inspect each yard fire hydrant and verify that the hydrant barrel is dry and that the hydrant is not damaged. | 184 days |
| TSR 3.7.9.5.3 Conduct a hose hydrostatic test at a pressure of 150 psig or at least 50 psig above the maximum fire main operating pressure, whichever is greater. | 12 months |
| TSR 3.7.9.5.4 Replace all degraded gaskets in couplings. | 12 months |
| TSR 3.7.9.5.5 Perform a flow check of each hydrant. | 12 months |

TABLE 3.7.9.5-1 (page 1 of 1)
YARD FIRE HYDRANTS AND ASSOCIATED HYDRANT HOSE HOUSES

| <u>LOCATION</u> | <u>HYDRANT NUMBER</u> |
|----------------------------------|-----------------------|
| a. Northeast of Fuel Bldg | FHY 11 |
| b. East of Control Bldg | FHY 13 |
| c. West of Standby Cooling Tower | FHY 9* |
| d. North of Fuel Bldg | FHY 10 |

*No associated hose house.

TR 3.7.9.6 Fire-Rated Assemblies

-----NOTE-----
The Operating License, NPF-47, may require prior NRC approval for changes to this Technical Requirement.

TLCO 3.7.9.6 All fire barrier assemblies shall be OPERABLE. Fire barrier assemblies include:

- a. Walls, floors/ceilings, cable tray enclosures, and other fire barriers that separate safety-related fire areas or that separate portions of redundant systems, important to safe shutdown, within a fire area, and
- b. All sealing devices in fire-rated assembly penetrations, including fire doors and fire dampers and cable, piping and ventilation duct penetration seals, and ventilation seals.

APPLICABILITY: At all times.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each required fire rated assembly or sealing device.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| A. One or more of the above required fire-rated assemblies or sealing devices inoperable | A.1 Establish a continuous fire watch on at least one side of the affected assembly or sealing device | 1 hour |
| | OR | |
| | A.2.1 Verify the OPERABILITY of fire detectors on at least one side of the inoperable assembly or sealing device | 1 hour |
| | AND A.2.2 Establish an hourly fire watch patrol. | 1 hour |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.7.9.6.1 Verify that doors with automatic hold open and release mechanisms are free of obstructions. | 24 hours |
| TSR 3.7.9.6.2 Verify that each unlocked fire door without electrical supervision is closed. | 24 hours |
| TSR 3.7.9.6.3 Verify that each locked-closed fire door is closed. | 7 days |
| TSR 3.7.9.6.4 Verify the OPERABILITY of the fire door supervision system for each electrically supervised fire door by performing a CHANNEL FUNCTIONAL TEST. | 31 days |
| TSR 3.7.9.6.5 For each of the above required fire doors inspect the automatic hold-open, release and closing mechanism and latches. | 184 days |
| TSR 3.7.9.6.6 Perform a visual inspection of the exposed surfaces of each fire-rated assembly. | 18 months |
| TSR 3.7.9.6.7 Perform a visual inspection of each fire damper and associated hardware. | 18 months |
| TSR 3.7.9.6.8 Perform a visual inspection of at least 10 percent of each type of sealed penetration. If changes in appearance or abnormal degradations are found, a visual inspection of an additional 10 percent of each type of sealed penetration shall be made. This inspection process shall continue until a 10 percent sample is found with no apparent changes in appearance or abnormal degradation. Samples shall be selected such that each penetration seal will be inspected at least once per 15 years. | 18 months |
| TSR 3.7.9.6.9 Perform a functional test of the automatic hold-open, release and closing mechanism and latches. | 18 months |

TR 3.7.10 Area Temperature Monitoring

TICO 3.7.10 The temperature of each area shown in Table 3.7.10-1 shall be maintained within the limits indicated in Table 3.7.10-1.

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

ACTIONS

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

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| A. One or more areas exceeding the temperature limit(s) shown in Table 3.7.10-1 | A.1 Restore the area to within its temperature limit. | 8 hours |
| B. One or more areas exceeding the temperature limit(s) shown in Table 3.7.10-1 by > 30°F | B.1 Enter Condition C | Immediately |
| | AND | |
| | B.2.1 Restore the area to within its temperature limit | 4 hours |
| | OR | |
| | B.2.2 Declare the equipment in the affected area inoperable. | 4 hours |
| C. Condition B entered OR Required Action and associated Completion Time for Condition A not met | Prepare and submit a Special Report to the Commission, pursuant to Requirement 5.9.2, providing a record of the amount by which and the cumulative time the temperature in the affected area exceeded its limit and an analysis to demonstrate the continued OPERABILITY of the affected equipment | 30 days |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.7.10.1 The temperature in each of the areas shown in Table 3.7.10-1 shall be determined to be within its limit. | 12 hours |

TABLE 3.7.10-1 (page 1 of 1)
AREA TEMPERATURE MONITORING

| AREA | TEMPERATURE LIMIT (°F) |
|--|------------------------|
| 1. <u>Auxiliary Building</u> | |
| a. LPCS area | 122 |
| b. RHR A pump room | 122 |
| c. RCIC pump room | 122 |
| d. RHR B pump room | 122 |
| e. RHR C pump room | 122 |
| f. HPCS pump room | 122 |
| g. MCC area (West) | 112 |
| h. MCC area (East) | 116 |
| i. Main steam tunnel (north) | 135 |
| j. Standby gas treatment rooms | 122 |
| k. Annulus mixing fan area | 122 |
| l. RHR Hx Area (West) | 122 |
| m. Hoist Area | 122 |
| n. RHR Hx Area (East) | 122 |
| o. HPCS Hatch Area | 122 |
| p. RPCCW Area | 122 |
| q. Elevator Room | 122 |
| r. RPCCW Area | 122 |
| s. RHR Equip. Removal Cubicles | 122 |
| 2. <u>Diesel Generator Control Rooms</u> | |
| a. Diesel Generator 1A | 104 |
| b. Diesel Generator 1B | 104 |
| c. Diesel Generator 1C | 104 |
| 3. <u>Control Building</u> | |
| a. Standby switchgear room 1A | 104 |
| b. Standby switchgear room 1B | 104 |
| c. Division I battery room | 90 |
| d. Division II battery room | 90 |
| e. Division III battery room | 90 |
| f. Inverter 1A room | 104 |
| g. Inverter 1B room | 104 |
| h. Inverter 1C room | 104 |

TR 3.7.11 Structural Settlement

TLCO 3.7.11 Structural settlement shall be within the predicted values as shown in Table 3.7.11-1 and calculated differential settlements shall be within the allowable ranges shown in Table 3.7.11-2 for the following structures:

- a. Reactor Building
- b. Auxiliary Building
- c. Fuel Building
- d. Control Building
- e. Diesel Generator Building
- f. Standby Cooling Tower, Basin and Pump House
- g. BF Tunnel
- h. Main Steam Tunnel
- i. E Tunnel
- j. G Tunnel

APPLICABILITY: At all times.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-----------------|
| A. Measured structural settlement of any of the above required structures outside of the limits of Tables 3.7.11-1 and 3.7.11-2 | A.1 Prepare and submit a Special Report to the Commission, pursuant to Requirement 5.9.2, providing a record of the settlement measurements and the predicted settlement, an analysis to demonstrate the continued structural integrity of the affected structure(s), and plans to monitor the settlement of the affected structure(s) in the future. | 30 days |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| TSR 3.7.11.1 The structural settlement of the above required structures shall be demonstrated to be within the limits of Tables 3.7.11-1 and 3.7.11-2: | 92 days until essentially no movement occurs in 92 days <u>AND</u> 24 months for at least 10 years <u>AND</u> Following any seismic event equal to or greater than an Operational Basis Earthquake (OBE). |

TABLE 3.7.11-1 (page 1 of 1)
TOTAL PREDICTED SETTLEMENTS OF MAJOR STRUCTURES

| STRUCTURE | SETTLEMENT MARKER NO. | PREDICTED SETTLEMENT (IN.) |
|--|--------------------------|-------------------------------|
| Reactor Building | 5 | 4.0 |
| | 16 | 4.0 |
| | 17 | 4.0 |
| Auxiliary Building | 18 | 3.8 |
| | 19 | 3.6 |
| | 20 | 3.9 |
| | 21 | |
| Fuel Building | 11 | |
| | 12 | 4.0 |
| | 13 | 3.5 |
| | 14 | 3.8 |
| Control Building | 5 | 3.7 |
| | 6 | 3.3 |
| | 7 | 3.7 |
| | 8 | 3.7 |
| Diesel Generator Building | 1 | 3.4 |
| | 2 | 3.7 |
| | 3 | 3.6 |
| | 4 | 3.8 |
| Standby Cooling Tower, Basin and Pump House | 30 | 2.7 |
| | 31 | 3.2 |
| | 32 | 2.4 |
| BF Tunnel | 9 | 2.1 |
| | 10 | 2.5 |
| Main Steam Tunnel | 22 | 3.8 |
| | 23 | 3.8 |
| E Tunnel | 28 | 3.3 |
| | 29 | 2.8 |
| G Tunnel | 33 | 2.6 |
| | 34 | 1.3 |

TABLE 3.7.11-2 (page 1 of 1)
ALLOWABLE DIFFERENTIAL SETTLEMENTS OF MAJOR STRUCTURAL INTERFACE POINTS

| Building Interface | Marker No. | | Allowable Differential Settlement (in.) |
|--------------------------------|------------|------|---|
| | A | B | |
| Diesel Generator vs. Control | 2 | 5 | +0.35 to -0.39 |
| | 4 | 7 | +0.42 to -0.61 |
| BF Tunnel vs. Diesel Generator | 9 | 3,4* | +0.53 to -1.08 |
| BF Tunnel vs. Fuel | 10 | 12 | +0.56 to -1.34 |
| Fuel vs. Reactor | 12 | 15 | +0.26 to -0.61 |
| | 14 | 17 | +0.30 to -0.60 |
| Reactor vs. Auxiliary | 16 | 18 | +0.32 to -0.08 |
| | 17 | 20 | +0.33 to -0.13 |
| Auxiliary vs. Main Steam | 19,21* | 22 | +0.44 to -0.69 |
| Fuel vs. G Tunnel | 13 | 33 | +0.41 to -0.32 |
| Fuel vs. E Tunnel | 14 | 28 | +0.42 to -0.39 |
| E Tunnel vs. Auxiliary | 29 | 21 | +0.73 to -0.43 |
| Control vs. Auxiliary | 7 | 18 | +0.46 to -0.66 |
| | 8 | 19 | +0.50 to -0.50 |

NOTE: Positive differential settlement indicates settlement of Marker A with respect to Marker B. Negative sign indicates settlement of Marker B with respect to Marker A.

*Settlements for those two markers should be averaged when determining differential settlement.

TR 3.8 ELECTRICAL POWER SYSTEMS

TR 3.8.1 AC Sources—Operating

-----NOTE-----
The following surveillance requirements apply to Technical Specification LCO 3.8.1. Failure to meet these surveillance requirements requires entry into Technical Specification LCO 3.8.1.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|-----------------------------|
| TSR 3.8.1.1 (Not Used) | |
| <p>TSR 3.8.1.2 -----NOTE----- All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. ----- When each DG is started from standby conditions for Technical Specification SR 3.8.1.2:</p> <ul style="list-style-type: none"> a. For DG 1A and DG 1B, record whether the DG achieves at least 450 rpm in ≤ 10 seconds for trending. b. For DG 1C record whether the DG achieves at least 882 rpm in ≤ 10 seconds for trending. | As specified for SR 3.8.1.2 |
| TSR 3.8.1.3 - TSR 3.8.1.11 (Not Used) | |

(continued)

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | FREQUENCY |
|---|------------------|
| <p>TSR 3.8.1.12 -----NOTE----- This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ----- Verify that the following diesel generator lockout features prevent diesel starting only when required:</p> <p>a) For Diesel Generators 1A and 1B:</p> <ol style="list-style-type: none"> 1) Loss of control power to diesel control panel. 2) Starting air pressure 120 ± 4.6 psig. 3) Stop-solenoid energized. 4) Diesel in the maintenance mode (includes barring device engaged). 5) Overspeed trip device actuated. 6) Generator backup protection lockout relay tripped. <p>b) For Diesel Generator 1C:</p> <ol style="list-style-type: none"> 1) Diesel generator lockout relays not reset. 2) Diesel engine mode switch not in "AUTO" position. 3) Diesel generator output breaker closed before start of diesel. 4) Diesel generator output breaker in racked-out position. 5) †Diesel generator regulator mode switch not in "AUTO" position. 6) Insufficient starting air pressure. 7) Loss of dc power to diesel generator controls. <p>†Item 5) does not electrically block diesel generator from starting; however, it will affect the loading operation of the diesel.</p> | <p>18 months</p> |

(continued)

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | FREQUENCY |
|--|--|
| TSR 3.8.1.13 - TSR 3.8.1.17 (Not Used) | |
| TSR 3.8.1.18 a., b. (Not Used) c. When the DG is auto-started from standby condition for technical specification SR 3.8.1.18 1. - 4. (Not Used) 5. Verify the auto-connected loads for each diesel do not exceed 3130 KW for diesel generator 1A and 1B and 2600 KW for diesel generator 1C. | 18 months |
| TSR 3.8.1.19 (Not Used) | |
| TSR 3.8.1.20 Verify the Division III diesel generator ambient room temperature to be $\geq 40^{\circ}\text{F}$ | Once per 24 hours <u>OR</u> Once per 12 hours when the last reported room temperature $< 50^{\circ}\text{F}$. |
| TSR 3.8.1.21 -----NOTE----- This Surveillance shall not be performed in MODE 1, or 2. ----- Subject the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service. | 18 months <u>AND</u> every refueling outage for DG 1A and 1B |

TR 3.8.2 AC Sources - Shutdown

ACTIONS

-----NOTE-----

The following Action is in addition to the requirements of Technical Specification LCO 3.8.2

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| A - C (Not Used) | | |
| D.1 Technical Specification LCO 3.8.2 Condition A has been entered and Required Action A.2 is being performed. | D.1 Suspend crane operations over the spent fuel storage pool when fuel assemblies are stored therein. | Immediately |
| <u>OR</u> | | |
| D.2 Technical Specification LCO 3.8.2 Condition B has been entered. | | |

SURVEILLANCE REQUIREMENTS

-----NOTE-----

The following surveillance requirements apply to Technical Specification LCO 3.8.2. Failure to meet these surveillance requirements requires entry into Technical Specification LCO 3.8.2.

| SURVEILLANCE | FREQUENCY |
|---|---|
| <p>TSR 3.8.2.1 -----NOTE-----</p> <p>The following TSRs are not required to be performed: TSR 3.8.1.12, TSR 3.8.1.18, and TSR 3.8.1.21.</p> <p>-----</p> <p>For AC sources required to be OPERABLE, the following TSRs are applicable:</p> <p>TSR 3.8.1.2 TSR 3.8.1.12 TSR 3.8.1.18, TSR 3.8.1.20 TSR 3.8.1.21</p> | <p>In accordance with applicable TSRs</p> |

TR 3.8.3 Diesel Fuel Oil, Lube Oil and Starting Air

-----NOTE-----
The following surveillance requirements apply to Technical Specification LCO 3.8.3. Failure to meet these surveillance requirements requires entry into Technical Specification LCO 3.8.3.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.8.3.1 through TSR 3.8.3.6 (Not Used) | |
| TSR 3.8.3.7 Verify for Diesel 1A and 1B that the lube oil circulating pump is operating and the lube oil sump heater and jacket water heater are OPERABLE. | 24 hours |
| TSR 3.8.3.8 Perform a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code in accordance with ASME Code Section XI, Article IWD-5000. | 10 years |

TR 3.8.4 DC Sources—Operating

-----NOTE-----
The following surveillance Notes apply to the identified SRs of Technical Specification LCO 3.8.4.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| <p>SR 3.8.4.7 -----NOTE-----</p> <p>This SR may be accomplished by verification that the battery capacity is adequate to supply a dummy load of the following profile in accordance with IEEE 450 while maintaining the battery terminal voltage ≥ 105 volts. Changes in amperes below the values shown are acceptable provided it can be shown by engineering evaluation that overall battery capacity for each period is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle.</p> <p>a) <u>Division I</u></p> <ul style="list-style-type: none"> > 671 amperes for the first 60 seconds > 270 amperes for the next 9 minutes > 336 amperes for the next 60 seconds > 270 amperes for the next 228 minutes > 451 amperes for the last 60 seconds <p>b) <u>Division II</u></p> <ul style="list-style-type: none"> > 502 amperes for the first 60 seconds > 261 amperes for the next 9 minutes > 327 amperes for the next 60 seconds > 261 amperes for the next 228 minutes > 327 amperes for the last 60 seconds <p>c) <u>Division III</u></p> <ul style="list-style-type: none"> > 53.2 amperes for the first 60 seconds > 15.4 amperes for the next 119 minutes <p>-----</p> | |

TR 3.8.11 Electrical Equipment Protective Devices

TLCO 3.8.11 Each of the primary and backup overcurrent protective devices associated with each primary containment electrical penetration circuit as shown in Table 3.8.11-1 shall be OPERABLE. The scope of the protective devices excludes those circuits for which credible fault currents would not exceed the penetrations' design ratings.

APPLICABILITY: MODE 1, 2, and 3.

ACTIONS

-----NOTE-----

Separate Condition entry is allowed for each primary containment penetration conductor overcurrent protective device.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| A. One or more of the 480 volt MCC circuit breaker/fuse combination starters inoperable. | A.1 Declare the affected system or component inoperable. | Immediately |
| | <u>AND</u> | |
| | A.2 Remove the inoperable starter(s) from service by locking the breaker(s) open and removing the control power fuse(s). | 72 hours |
| | <u>AND</u> | |
| | A.3 Verify the inoperable starter(s) circuit breakers(s) to be locked open and the control power fuse(s) removed. | Once per 7 days |
| B. One or more of the 480 volt circuit breakers inoperable. | B.1 Declare the affected system or component inoperable. | Immediately |
| | <u>AND</u> | |
| | B.2 Remove the inoperable circuit breaker(s) from service by racking out the breaker. | 72 hours |
| | <u>AND</u> | |
| | B.3 Verify the inoperable breakers(s) racked out. | Once per 7 days |

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| C. One or more of the 4.16 kV breaker(s) inoperable. | C.1 Declare the affected system or component inoperable. | Immediately |
| | AND | |
| | C.2 De-energize the 4.16 kV circuit(s) by tripping the associated redundant circuit breaker(s). | 72 hours |
| | AND | |
| | C.3 Verify the redundant circuit breaker tripped. | Once per 7 days |
| D. One or more of the 120/240 volt moded case circuit breaker(s) inoperable. | D.1 Declare the affected system or component inoperable. | Immediately |
| | AND | |
| | D.2 Remove the inoperable circuit breaker(s) from service by tripping both 120/240 volt breakers open and locking the upstream 480 volt MCC breaker(s) open. | 72 hours |
| | AND | |
| | D.3 Verify the 480 volt MCC breaker(s) to be locked open. | Once per 7 days |
| E. Required Action and associated Completion Time not met. | E.1 Be in MODE 3. | 12 hours |
| | AND | |
| | E.2 Be in MODE 4. | 36 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| <p>TSR 3.8.11.1 A CHANNEL CALIBRATION of the associated protective relays for the 4.16 kv breakers.</p> | <p>18 months on a STAGGERED TEST BASIS</p> |
| <p>TSR 3.8.11.2 -----NOTE----- For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least one of the four circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested ----- Perform an integrated system functional test of the 4.16 kv breakers which includes simulated automatic actuation of the system and verifying that each relay and associated circuit breakers and overcurrent control circuits function as designed.</p> | <p>18 months on a STAGGERED TEST BASIS</p> |
| <p>TSR 3.8.11.3 -----NOTES----- For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.. Testing of these circuit breakers shall consist of injecting currents in excess of the breaker's nominal setpoint and measuring the response time of the long time and short time delay elements and the setpoint of the instantaneous element, as appropriate. The measured data shall be compared to the manufacturer's data to ensure that it is less than or equal to a value specified by the manufacturer. Circuit breakers found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation. ----- Functionally test a representative sample of at least 10% of each type of lower voltage (≤ 480 volt) circuit breakers.</p> | <p>18 months on a STAGGERED TEST BASIS</p> |

(continued)

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>TSR 3.8.11.4</p> <p>-----NOTES-----</p> <p>For each motor starter found inoperable during these functional tests, an additional representative sample of at least 10% of all the motor starters of the inoperable type shall also be functionally tested until no more failures are found or all motor starters of that type have been functionally tested.</p> <p>Testing of these motor starters shall consist of injecting a current with a value equal to the locked rotor current of the associated motor and verifying that the motor starter operates to interrupt the current within the associated thermal overload time delay bandwidth for that current as specified by the manufacturer.</p> <p>Motor starters found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation..</p> <p>-----</p> <p>Functionally test a representative sample of at least 10% of each type of motor starter used for penetration redundant overcurrent protection.</p> | <p>18 months on a STAGGERED TEST BASIS</p> |
| <p>TSR 3.8.11.5</p> <p>Subject each circuit breaker to an inspection and preventive maintenance program in accordance with procedures prepared in conjunction with its manufacturer's recommendations.</p> | <p>60 months</p> |

TABLE 3.8.11-1 (page 1 of 7)
PRIMARY CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTION DEVICES

A. 4.16 KV Circuit Breakers

| <u>PRIMARY PROTECTION</u> | | <u>SECONDARY PROTECTION</u> | | |
|---------------------------|-----------------|-----------------------------|-----------------|----------------------|
| <u>LOCATION</u> | <u>DEVICE #</u> | <u>LOCATION</u> | <u>DEVICE #</u> | <u>EQUIPMENT ID#</u> |
| 1. 1ENS*SWG4A | ACB 36 | 1ENS*SWG3A | ACB 35 | 1B33-C001A |
| 2. 1ENS*SWG4B | ACB 38 | 1ENS*SWG3B | ACB 37 | 1B33-C001B |

B. 120/140 VAC Molded Case Circuit Breakers

1. Type Square D

| <u>PRIMARY PROTECTION</u> | <u>SECONDARY PROTECTION</u> | <u>EQUIP. NO.</u> |
|---------------------------|-----------------------------|-------------------|
| <u>Location</u> | <u>Location</u> | |
| 1HCS*BKR01A1-1 (BRANCH) | 1HCS*BKR01A1 (MAIN) | 1HCS*PNL01A1 |
| 1HCS*BKR01A1-2 (BRANCH) | 1HCS*BKR01A1 (MAIN) | 1HCS*PNL01A1 |
| 1HCS*BKR01A1-3 (BRANCH) | 1HCS*BKR01A1 (MAIN) | 1HCS*PNL01A1 |
| 1HCS*BKR01A1-4 (BRANCH) | 1HCS*BKR01A1 (MAIN) | 1HCS*PNL01A1 |
| 1HCS*BKR01A1-5 (BRANCH) | 1HCS*BKR01A1 (MAIN) | 1HCS*PNL01A1 |
| 1HCS*BKR01A2-1 (BRANCH) | 1HCS*BKR01A2 (MAIN) | 1HCS*PNL01A2 |
| 1HCS*BKR01A2-2 (BRANCH) | 1HCS*BKR01A2 (MAIN) | 1HCS*PNL01A2 |
| 1HCS*BKR01A2-3 (BRANCH) | 1HCS*BKR01A2 (MAIN) | 1HCS*PNL01A2 |
| 1HCS*BKR01A2-4 (BRANCH) | 1HCS*BKR01A2 (MAIN) | 1HCS*PNL01A2 |
| 1HCS*BKR01A2-5 (BRANCH) | 1HCS*BKR01A2 (MAIN) | 1HCS*PNL01A2 |
| 1HCS*BKR01B1-1 (BRANCH) | 1HCS*BKR01B1 (MAIN) | 1HCS*PNL01B1 |
| 1HCS*BKR01B1-2 (BRANCH) | 1HCS*BKR01B1 (MAIN) | 1HCS*PNL01B1 |
| 1HCS*BKR01B1-3 (BRANCH) | 1HCS*BKR01B1 (MAIN) | 1HCS*PNL01B1 |
| 1HCS*BKR01B1-4 (BRANCH) | 1HCS*BKR01B1 (MAIN) | 1HCS*PNL01B1 |
| 1HCS*BKR01B1-5 (BRANCH) | 1HCS*BKR01B1 (MAIN) | 1HCS*PNL01B1 |
| 1HCS*BKR01B2-1 (BRANCH) | 1HCS*BKR01B2 (MAIN) | 1HCS*PNL01B2 |
| 1HCS*BKR01B2-2 (BRANCH) | 1HCS*BKR01B2 (MAIN) | 1HCS*PNL01B2 |
| 1HCS*BKR01B2-3 (BRANCH) | 1HCS*BKR01B2 (MAIN) | 1HCS*PNL01B2 |
| 1HCS*BKR01B2-4 (BRANCH) | 1HCS*BKR01B2 (MAIN) | 1HCS*PNL01B2 |
| 1HCS*BKR01B2-5 (BRANCH) | 1HCS*BKR01B2 (MAIN) | 1HCS*PNL01B2 |

(continued)

TABLE 3.8.11-1 (page 2 of 7)
PRIMARY CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTION DEVICES

1. Type Square D (continued)

| <u>PRIMARY PROTECTION</u> | <u>SECONDARY PROTECTION</u> | <u>EQUIP. NO.</u> |
|---------------------------|-----------------------------|-------------------|
| <u>Location</u> | <u>Location</u> | |
| 1LAR-BKR1B | 1LAR-BKR1A | 1LAR-PNL1R1 |
| 1LAR-BKR2B | 1LAR-BKR2A | 1LAR-PNL1R2 |
| 1LAR-BKR3B | 1LAR-BKR3A | 1LAR-PNL1R3 |
| 1LAR-BKR4B | 1LAR-BKR4A | 1LAR-PNL1R4 |
| 1LAR-BKR5B | 1LAR-BKR5A | 1LAR-PNL1R5 |
| 1LAR-BKR6B | 1LAR-BKR6A | 1LAR-PNL1R6 |
| 1LAR-BKR7B | 1LAR-BKR7A | 1LAR-PNL1R7 |
| 1LAR-BKR8B | 1LAR-BKR8A | 1LAR-PNL1R8 |
| 1LAR-BKR9B | 1LAR-BKR9A | 1LAR-PNL1R9 |
| 1LAR-BKR10B | 1LAR-BKR10A | 1LAR-PNL1R10 |
| 1LAR-BKR11B | 1LAR-BKR11A | 1LAR-PNL1R11 |
| 1LAR-BKR12B | 1LAR-BKR12A | 1LAR-PNL1R12 |
| 1LAR-BKR13B | 1LAR-BKR13A | 1LAR-PNL1R13 |
| 1LAR-BKR14B | 1LAR-BKR14A | 1LAR-PNL1R14 |
| 1LAR-BKR16B | 1LAR-BKR16A | 1LAR-PNL1R16 |
| 1LAR-BKR17B | 1LAR-BKR17A | 1LAR-PNL1R17 |
| 1LAR-BKR18B | 1LAR-BKR18A | 1LAR-PNL1R18 |
| 1LAR-BKR19B | 1LAR-BKR19A | 1LAR-PNL1R19 |
| 1SCA-BKR2A12 | 1SCA-BKR2A11 | 1SCA-PNL2A1 |
| 1SCA-BKR2D12 | 1SCA-BKR2D11 | 1SCA-PNL2D1 |
| 1SCA-BKR2F12 | 1SCA-BKR2F11 | 1SCA-PNL2F2 |
| 1SCA-BKR2D14 | 1SCA-BKR2D13 | 1SCA-PNL2D3 |
| 1SCA-BKR8A22 | 1SCA-BKR8A21 | 1SCA-PNL8A2 |
| 1SCA-BKR8B22 | 1SCA-BKR8B21 | 1SCA-PNL8B2 |
| 1HTS*BKR2M-1 | | 1HTS*PNL2M |
| 1HTS*BKR2M-2 | | 1HTS*PNL2M |
| 1HTS*BKR2M-3 | | 1HTS*PNL2M |
| 1HTS*BKR2M-4 | | 1HTS*PNL2M |
| 1HTS*BKR2M-7 | | 1HTS*PNL2M |
| 1HTS*BKR2M-8 | | 1HTS*PNL2M |
| 1HTS*BKR2M-9 | | 1HTS*PNL2M |
| 1HTS*BKR2N-1 | | 1HTS*PNL2N |
| 1HTS*BKR2N-2 | | 1HTS*PNL2N |
| 1HTS*BKR2N-5 | | 1HTS*PNL2N |
| 1HTS*BKR2N-6 | | 1HTS*PNL2N |
| 1HTS-BKR1H-H1 | | 1HTS-PNL1H |
| 1HTS-BKR1H-H2 | | 1HTS-PNL1H |
| 1HTS-BKR1K-H1 | | 1HTS-PNL1K |
| 1HTS-BKR1K-H2 | | 1HTS-PNL1K |
| 1HTS-BKR1N-15 | | 1HTS-PNL1N |
| SCV-PNL2B1-5 (Branch) | SCV-PNL2B1-M (Main) | SCV-PNL2B1 |

(continued)

TABLE 3.8.11-1 (page 3 of 7)
PRIMARY CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTION DEVICES

C. 480 VAC Molded Case Circuit Breakers

1. Gould Circuit Breaker Type A821 with Gould Starter/Controller
Type FVNR Size 1

| <u>Location</u> | <u>Cubicle</u> | <u>Equip. No.</u> |
|-----------------|----------------|-------------------|
| 1EHS-MCC2A | 2B | 1CPM-FN1A |
| 1EHS-MCC2B | 2B | 1CPM-FN1B |
| 1NHS-MCC2A | 2A | 1C41-D002 |
| 1NHS-MCC2A | 3C | 1DER-P1A |
| 1NHS-MCC2A | 3D | 1DER-P2A |
| 1NHS-MCC2A | 4D | 1DFR-P2A |
| 1NHS-MCC2A | 4E | 1DFR-P1A |
| 1NHS-MCC2A | 6E | 1HVR-FN1A |
| 1NHS-MCC2B | 4C | 1DER-P1B |
| 1NHS-MCC2B | 5C | 1DER-P2B |
| 1NHS-MCC2B | 6B | 1DFR-P2B |
| 1NHS-MCC2B | 6C | 1HVR-FN1D |
| 1NHS-MCC2C | 1E | 1B33-COOLAH |
| 1NHS-MCC2D | 3B | 1B33-COOLBH |
| 1NHS-MCC2E | 2C | 1HVR-FN1C |
| 1NHS-MCC2E | 3B | 1G36-C001A |
| 1NHS-MCC2E | 4D | 1WCS-P5A |
| 1NHS-MCC2E | 4E | 1B33-D003A2 |
| 1NHS-MCC2E | 6C | 1B33-D003A5 |
| 1NHS-MCC2E | 1C | 1G36-A001AG |
| 1NHS-MCC2F | 3B | 1G36-C001B |
| 1NHS-MCC2F | 3C | 1HVR-FN1B |
| 1NHS-MCC2F | 4A | 1DFR-P1B |
| 1NHS-MCC2F | 5A | 1WCS-P5B |
| 1NHS-MCC2F | 5C | 1B33-D003B5 |
| 1NHS-MCC2F | 6B | 1B33-D003B2 |
| 1NHS-MCC2F | 6C | 1G36-A002AG |
| 1NHS-MCC8A | 2E | 1F42-D002 |
| 1NHS-MCC8A | 3E | 1DFR-P6A |
| 1NHS-MCC8B | 3C | 1DFR-P6B |
| 1NHS-MCC102F | 3A | 1CPP-FN1 |

(continued)

TABLE 3.8.11-1 (page 4 of 7)
PRIMARY CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTION DEVICES

C. 480 VAC Molded Case Circuit Breakers (continued)

2. Gould Circuit Breaker Type A822 with Gould Starter/Controller
Type FVR Size 1

| <u>Location</u> | <u>Cubicle</u> | <u>Equip. No.</u> |
|-----------------|----------------|-------------------|
| 1EHS*MCC2A | 2A | 1C41*MOVFO01A |
| 1EHS*MCC2A | 5A | 1SWP*MOV4A |
| 1EHS*MCC2A | 5B | 1SWP*MOV5B |
| 1EHS*MCC2A | 5C | 1SWP*MOV502A |
| 1EHS*MCC2A | 6A | 1RCS*MOV58A |
| 1EHS*MCC2A | 6B | 1RCS*MOV59A |
| 1EHS*MCC2A | 6C | 1SWP*MOV503A |
| 1EHS*MCC2B | 1B | 1SFC*MOV120 |
| 1EHS*MCC2B | 1D | 1SFC*MOV139 |
| 1EHS*MCC2B | 2A | 1C41*MOVFO01B |
| 1EHS*MCC2B | 5A | 1SWP*MOV4B |
| 1EHS*MCC2B | 5B | 1SWP*MOV5A |
| 1EHS*MCC2B | 5C | 1SWP*MOV502B |
| 1EHS*MCC2B | 6A | 1RCS*MOV58B |
| 1EHS*MCC2B | 6B | 1RCS*MOV59B |
| 1EHS*MCC2B | 6C | 1SWP*MOV503B |
| 1EHS*MCC2C | 1D | 1CCP*MOV142 |
| 1EHS*MCC2C | 2C | 1CCP*MOV143 |
| 1EHS*MCC2C | 2D | 1CPM*MOV1A |
| 1EHS*MCC2C | 3A | 1CPM*MOV2A |
| 1EHS*MCC2C | 3B | 1CPM*MOV3A |
| 1EHS*MCC2C | 3C | 1E12*MOVFO37A |
| 1EHS*MCC2C | 4A | 1E12*MOVFO42A |
| 1EHS*MCC2C | 4B | 1HVN*MOV22A |
| 1EHS*MCC2C | 4C | 1RCS*MOV60A |
| 1EHS*MCC2C | 5B | 1RCS*MOV61A |
| 1EHS*MCC2C | 5C | 1CPM*MOV4A |
| 1EHS*MCC2D | 1C | 1B21*MOVFO16 |
| 1EHS*MCC2D | 1D | 1CPM*MOV1B |
| 1EHS*MCC2D | 2C | 1CPM*MOV2B |
| 1EHS*MCC2D | 2D | 1CPM*MOV3B |
| 1EHS*MCC2D | 3A | 1CPM*MOV4B |
| 1EHS*MCC2D | 3B | 1CPP*MOV104 |
| 1EHS*MCC2D | 3C | 1E51*MOVFO63 |
| 1EHS*MCC2D | 4A | 1E51*MOVFO76 |
| 1EHS*MCC2D | 4B | 1G33*MOVFO01 |
| 1EHS*MCC2D | 4C | 1G33*MOVFO28 |
| 1EHS*MCC2D | 5A | 1WCS*MOV178 |
| 1EHS*MCC2K | 1D | 1CCP*MOV144 |

(continued)

TABLE 3.8.11-1 (page 5 of 7)
PRIMARY CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTION DEVICES

C. 480 VAC Molded Case Circuit Breakers (continued)

2. Gould Circuit Breaker Type A822 with Gould Starter/Controller
Type FVR Size 1 (continued)

| Location | Cubicle | Equip. No. |
|------------|---------|---------------|
| 1EHS*MCC2K | 2A | 1RCS*MOV60B |
| 1EHS*MCC2K | 2B | 1RCS*MOV61B |
| 1EHS*MCC2K | 2C | 1HVN*MOV22B |
| 1EHS*MCC2K | 3D | 1E12*MOVF042B |
| 1EHS*MCC2K | 4A | 1E12*MOVF009 |
| 1EHS*MCC2K | 4C | 1G33*MOVF053 |
| 1EHS*MCC2K | 5A | 1G33*MOVF040 |
| 1EHS*MCC2K | 6C | 1HVN*MOV102 |
| 1EHS*MCC2K | 6D | 1E12*MOVF037B |
| 1EHS*MCC2K | 7D | 1CCP*MOV158 |
| 1NHS-MCC2A | 1C | 1B21-MOVF001 |
| 1NHS-MCC2A | 1D | 1B33-MOVF023A |
| 1NHS-MCC2A | 5C | 1G33-MOVF102 |
| 1NHS-MCC2A | 5D | 1B33-MOVF067A |
| 1NHS-MCC2A | 7D | 1G33-MOVF106 |
| 1NHS-MCC2B | 3B | 1G33-MOVF042 |
| 1NHS-MCC2B | 3C | 1B21-MOVF002 |
| 1NHS-MCC2B | 4D | 1G33-MOVF044 |
| 1NHS-MCC2B | 5D | 1G33-MOVF100 |
| 1NHS-MCC2B | 6D | 1G33-MOVF101 |
| 1NHS-MCC2D | 2E | 1B21-MOVF005 |
| 1NHS-MCC2D | 3D | 1B33-MOVF067B |
| 1NHS-MCC2D | 4D | 1B33-MOVF023B |
| 1NHS-MCC2E | 3A | 1G33-MOVF031 |
| 1NHS-MCC2E | 5E | 1G33-MOVF107 |
| 1NHS-MCC2F | 2D | 1G33-MOVF104 |
| 1NHS-MCC8A | 4E | 1C11-MOVF003 |

3. Gould Circuit Breaker Type HE43

| | | |
|------------|-----|--------------|
| 1NHS-MCC2A | 2B | 1POP-WR2G01 |
| 1NHS-MCC2A | 2C | 1POP-WR2A01 |
| 1NHS-MCC2A | 2D | 1POP-WR2A02 |
| 1NHS-MCC2A | 3B | 1POP-WR2G02 |
| 1NHS-MCC2C | 1CT | 1H22-PNLP008 |
| 1NHS-MCC2D | 5C | 1POP-WR2D01 |
| 1NHS-MCC2D | 5D | 1POP-WR2D02 |
| 1NHS-MCC8A | 1E | 1F15-E006 |
| 1NHS-MCC8A | 2D | 1F15-E005 |

(continued)

TABLE 3.8.11-1 (page 6 of 7)
PRIMARY CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTION DEVICES

C. 480 VAC Molded Case Circuit Breakers (continued)

3. Gould Circuit Breaker Type HE43 (continued)

| | | |
|------------|----|-------------|
| 1NHS-MCC8A | 4C | 1F11-E012 |
| 1NHS-MCC8A | 6B | 1FNR-P06 |
| 1NHS-MCC8A | 6C | 1FNR-P08 |
| 1NHS-MCC8B | 2A | 1FNR-P07 |
| 1NHS-MCC2F | 2A | 1POP-WR2F01 |
| 1NHS-MCC2F | 2B | 1JRB-EL1A |
| 1NHS-MCC2E | 3C | 1MHR-CRN2 |
| 1NHS-MCC2A | 3A | 1FNR-P09 |
| 1NHS-MCC2A | 4A | 1FNR-P10 |
| 1NHS-MCC2B | 1C | 1FNR-P11 |
| 1NHS-MCC8A | 3D | 1MHR-CRN3 |

4. Gould Circuit Breaker Type A80 with Gould Starter/Controller
Type FVNR Size 3

| Location | Cubicle | Equip. No. |
|------------|---------|-------------|
| 1EHS*MCC2A | 2C | 1C41*C001A |
| 1EHS*MCC2B | 2C | 1C41*CO01B |
| 1NHS-MCC2B | 2D | 1C41*D003 |
| 1NHS-MCC2E | 1D | 1B33-D003A1 |
| 1NHS-MCC2E | 6D | 1B33-D003A4 |
| 1NHS-MCC2F | 4D | 1B33-D003B1 |
| 1NHS-MCC2F | 6D | 1B33-D003B4 |
| 1NHS-MCC2D | 1E | 1G36-C002 |

5. Gould Circuit Breaker Type A80 with Gould Starter/Controller
Type 2SP1W Size 4

| | | |
|--------------|----|-----------|
| 1NHS-MCC102A | 1C | 1DRS-UC1A |
| 1NHS-MCC102A | 2C | 1DRS-UC1C |
| 1NHS-MCC102A | 3B | 1DRS-UC1E |
| 1NHS-MCC102B | 1C | 1DRS-UC1B |
| 1NHS-MCC102B | 2C | 1DRS-UC1D |
| 1NHS-MCC102B | 3B | 1DRS-UC1F |

6. Gould Circuit Breaker with Type A821 Gould Starter/Controller
Type FVNR Size 2

| | | |
|------------|----|-----------|
| 1NHS-MCC8B | 1D | 1F42-E001 |
|------------|----|-----------|

(continued)

TABLE 3.8.11-1 (page 7 of 7)
PRIMARY CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTION DEVICES

(continued)

| D. Air Circuit Breakers - GE Type ARR | | | | |
|---------------------------------------|------------|-------------|------------|-------------|
| Location | Device No. | Location | Device No. | Equip. No. |
| 1EJS*LDC2R | ACB79 | 1EJS*LDC2B | ACB78 | 1HVR-UC1C |
| 1EJS*LDC2A | ACB36 | 1EJS*LDC2A | ACB38 | 1HVR*UC1A |
| 1EJS*LDC2A | ACB22 | 1EJS*LDC2A | ACB38 | 1MHR*CRN1 |
| 1EJS*LDC2B | ACB76 | 1EJS*LDC2B | ACB78 | 1HVR*UC1B |
| 1EJS*LDC2A | ACB23 | 1HCS*PWRS1A | Int. Fuse | 1HCS*RBNR1A |
| 1EJS*LDC2B | ACB63 | 1HCS*PWRS1B | Int. Fuse | 1HCS*RBNR1B |

TR 3.8.12 Other Overcurrent Protective Devices

TLCO 3.8.12 Each primary overcurrent protection device for the Main Control Room safety-related lighting and the primary and secondary RPS Alternate Source of Power as shown in Table 3.8.12-1 shall be OPERABLE.

APPLICABILITY: At all times.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each overcurrent protective device.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|--|
| A. One or more of the overcurrent protective devices shown in Table 3.8.12-1 inoperable. | A.1 Remove the circuit breaker(s) feeding the control room lighting and/or alternate RPS supply as appropriate from service by opening the breaker(s) | 72 hours |
| | <u>AND</u> | |
| | A.2.1 Return the overcurrent protection devices to OPERABLE status | 7 days |
| | <u>OR</u> | |
| | A.2.2 Verify the appropriate breakers open | Once per 24 hours |
| | | <u>OR</u> |
| | | Once per 31 days when locked, sealed, or otherwise secured in the open position. |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>TSR 3.8.12.1 -----NOTE-----</p> <p>Testing of these circuit breakers shall consist of injecting currents in excess of the breaker's nominal setpoint and measuring the response time of the long time and short time delay elements and the setpoint of the instantaneous element, as appropriate. The measured data shall be compared to the manufacturer's data to ensure that it is less than or equal to a value specified by the manufacturer.</p> <p>-----</p> <p>Test one-half of each type of circuit breaker</p> | <p>18 months on a STAGGERED TEST BASIS</p> |

TABLE 3.8.12-1 (page 1 of 1)
OTHER OVERCURRENT PROTECTIVE DEVICES

TYPE

1. Main Control Room Lighting

Protective Device

1EHS*MCC14A
1EHS*MCC14B

2. RPS Alternate Source of Power

Primary Protection

1EHS*MCC14A
1EHS*MCC14B

Secondary Protection

1RPS*XRC10A1
1RPS*XRC10B1

TR 3.8.13 A.C. Circuits Inside Containment

TLCO 3.8.13 Each 480 V and 240/120 V A.C. circuit inside containment for the Containment Building HVAC, Drywell Cooling HVAC, RWCU, Inclined Fuel Transfer, and Reactor Building Main Hoist systems without redundant penetration protection as shown in Table 3.8.13-1 shall be de-energized:

APPLICABILITY: MODE 1, 2 and 3 except during entry into the containment.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each circuit breaker.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------|
| A. Any of the above required circuits energized. | A.1 Trip the associated circuit breaker(s) in the specified location. | 1 hour |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| TSR 3.8.13.1 Verify the specified circuit breakers are in the tripped condition. | 24 hours <u>OR</u> 31 days if locked, sealed or otherwise secured in the tripped condition. |

Table 3.8.13-1
A. C. circuits inside containment

| <u>Equipment ID</u> | <u>Location</u> | <u>Device</u> |
|---------------------|-----------------|--------------------|
| 1MHR*CRN1 | 1EJS*LDC2A | ACB022 |
| 1F42-PNLP003 | 1SCA-PNL8C1 | Circuit Breaker 1 |
| 1F42-PNLP003 | 1SCA-PNL8D1 | Circuit Breaker 2 |
| 1F42-D002H | 1SCA-PNL8C1 | Circuit Breaker 15 |
| 1SFT-PNL106 | 1SCA-PNL8B2 | Circuit Breaker 2 |
| 1SFT-PNL106 | 1SCA-PNL8B2 | Circuit Breaker 10 |
| 1HVR*UC1AH | 1SCV*PNL2A2 | Circuit Breaker 5 |
| 1HVR*UC1BH | 1SCV*PNL2B2 | Circuit Breaker 12 |
| 1HVR-UC1CH | 1SCA-PNL2C1 | Circuit Breaker 9 |
| 1HVR-FN1AH | 1SCA-PNL2A2 | Circuit Breaker 3 |
| 1HVR-FN1BH | 1SCA-PNL2F1 | Circuit Breaker 6 |
| 1HVR-FN1CH | 1SCA-PNL2E1 | Circuit Breaker 1 |
| 1HVR-FN1DH | 1SCA-PNL2B1 | Circuit Breaker 6 |
| 1DRS-UC1AH | 1SCA-PNL2E1 | Circuit Breaker 2 |
| 1DRS-UC1CH | 1SCA-PNL2E1 | Circuit Breaker 2 |
| 1DRS-UC1EH | 1SCA-PNL2E1 | Circuit Breaker 2 |
| 1WCS-P5AH | 1SCA-PNL2E1 | Circuit Breaker 4 |
| 1DRS-UC1BH | 1SCA-PNL2F1 | Circuit Breaker 3 |
| 1DRS-UC1DH | 1SCA-PNL2F1 | Circuit Breaker 3 |
| 1DRS-UC1FH | 1SCA-PNL2F1 | Circuit Breaker 3 |
| 1WCS-P5BH | 1SCA-PNL2F1 | Circuit Breaker 2 |

TR 3.9.5 Control Rod Scram Accumulators - Refueling

-----NOTE-----
The following surveillance requirement applies to Technical Specification LCO 3.9.5. Failure to meet this surveillance requirement requires entry into Technical Specification LCO 3.9.5.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|------------------------------------|---|-----------|
| TSR 3.9.5.1 and 3.9.5.2 (Not Used) | | |
| TSR 3.9.5.3 | Measure and record the time, for up to 10 minutes, that each individual accumulator check valve maintains the associated accumulator pressure above the alarm set point with no control rod drive pump operating. | 18 months |

Control Rod Scram Accumulator Alarms - Refueling
TR 3.9.5.1

TR 3.9.5.1 Control Rod Scram Accumulator Alarms - Refueling

TLCO 3.9.5.1 Each control rod scram accumulator alarm shall be OPERABLE.

APPLICABILITY: When associated control rod scram accumulator is OPERABLE
per Technical Specification LCO 3.9.5.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each control rod scram
accumulator alarm.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| A. One or more accumulator pressure detectors or alarms inoperable. <u>OR</u> One or more accumulator leak detectors or alarms inoperable. | A.1 Declare the associated accumulator inoperable. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---------------|---|-----------|
| TSR 3.9.5.1.1 | Perform a CHANNEL FUNCTIONAL TEST on the leak detector and associated alarm for each control rod scram accumulator. | 18 months |
| TSR 3.9.5.1.2 | Perform a CHANNEL CALIBRATION of the pressure detector for each control rod scram accumulator and verify an nominal alarm setpoint of 1520 psig on decreasing pressure. | 18 months |

TR 3.9.10 Decay Time

TLCO 3.9.10 The reactor shall be subcritical for ≥ 24 hours.*

APPLICABILITY: MODE 5, during movement of irradiated fuel in the reactor pressure vessel.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|-----------------|
| A. The reactor subcritical < 24 hours. | A.1 Suspend all operations involving movement of irradiated fuel in the reactor pressure vessel. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| TSR 3.9.10.1 The reactor shall be determined to have been subcritical ≥ 24 hours by verification of the date and time of subcriticality. | Prior to movement of irradiated fuel in the reactor pressure vessel. |

*The reactor shall be subcritical for at least 80 hours prior to opening vent and drain line pathways under the provisions of Technical Specification 3.6.1.10.

TR 3.9.11 Communications

TLCO 3.9.11 Direct communication shall be maintained between the main control room and refueling platform personnel.

APPLICABILITY: MODE 5 during all CORE ALTERATIONS except normal control rod motion.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|-------------------------------|-----------------|
| A. Direct communication between the control room and refueling platform personnel not maintained | A.1 Suspend CORE ALTERATIONS. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| TSR 3.9.11.1 Demonstrate direct communication between the control room and refueling platform personnel. | <p>Within 1 hour prior to the start of applicable activities.</p> <p><u>AND</u></p> <p>12 hours during performance of applicable activities.</p> |

TR 3.9.12 Refueling Platform

TLCO 3.9.12 The refueling platform shall be OPERABLE and used for handling fuel assemblies or control rods.

APPLICABILITY: During handling of fuel assemblies or control rods.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. One or more requirements for refueling platform OPERABILITY not satisfied. | A.1 Suspend use of any inoperable refueling platform equipment from operations involving the handling of control rods and fuel assemblies | -----NOTE----- Place the load in a safe condition prior to suspending operation. ----- Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| TSR 3.9.12.1. Demonstrate operation of the overload cutoff on the main hoist before the load exceeds 1200 ± 50 pounds. | Within 7 days prior to the start of such operations with that hoist |
| TSR 3.9.12.2. Demonstrate operation of the overload cutoff on the frame-mounted and monorail-mounted auxiliary hoists when the load exceeds 500 ± 50 pounds. | Within 7 days prior to the start of such operations with that hoist |
| TSR 3.9.12.3. Demonstrate operation of the normal uptravel stop interlock of the main hoist to maintain at least 8 feet 2 inches of water coverage above the top of the active irradiated fuel. | Within 7 days prior to the start of such operations with that hoist |
| TSR 3.9.12.4. Demonstrate operation of the normal uptravel stop interlock of the frame-mounted and monorail-mounted auxiliary hoists to maintain at least 6 feet 9 inches of water coverage above the top of the irradiated control rod. | Within 7 days prior to the start of such operations with that hoist |

(continued)

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>TSR 3.9.12.5. Demonstrate operation of the downtravel interlock on the main hoist when grapple hook down travel reaches 4 inches below fuel assembly handle during operations within the reactor pressure vessel.</p> | <p>Within 7 days prior to the start of such operations with that hoist</p> |
| <p>TSR 3.9.12.6. Demonstrate operation of the slack cable cutoff on the main hoist when the load is less than 50 ± 10 pounds.</p> | <p>Within 7 days prior to the start of such operations with that hoist</p> |
| <p>TSR 3.9.12.7. Demonstrate operation of the loaded interlock on the main hoist when the load exceeds 485 ± 50 pounds.</p> | <p>Within 7 days prior to the start of such operations with that hoist</p> |
| <p>TSR 3.9.12.8. Demonstrate operation of the redundant loaded interlock on the main hoist when the load exceeds 550 ± 50 pounds.</p> | <p>Within 7 days prior to the start of such operations with that hoist</p> |

TR 3.9.13 Fuel Handling Platform

TLCO 3.9.13 The fuel handling platform shall be OPERABLE and used for handling fuel assemblies or control rods.

APPLICABILITY: During handling of fuel assemblies or control rods.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. One or more requirements for fuel handling platform OPERABILITY not satisfied. | A.1 Suspend use of any inoperable fuel handling platform equipment from operations involving the handling of control rods and fuel assemblies | -----NOTE----- Place the load in a safe condition prior to suspending operation. ----- Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| TSR 3.9.13.1. Demonstrate operation of the overload cutoff on the main hoist before the load exceeds 1100 \pm 50 pounds. | Within 7 days prior to the start of such operations with that hoist |
| TSR 3.9.13.2. Demonstrate operation of the overload cutoff on the monorail-mounted auxiliary hoists when handling control rods before the load exceeds 500 \pm 50 pounds, and when handling unirradiated fuel before the load exceeds 1000 \pm 50 pounds. | Within 7 days prior to the start of such operations with that hoist |
| TSR 3.9.13.3. Demonstrate operation of the overload cutoff on the frame mounted auxiliary hoist when handling control rods before the load exceeds 500 \pm 50 pounds. | Within 7 days prior to the start of such operations with that hoist |
| TSR 3.9.13.4. Demonstrate operation of the normal uptravel stop interlock of the main hoist to maintain at least 8 feet 2 inches of water coverage above the top of the active irradiated fuel. | Within 7 days prior to the start of such operations with that hoist |

(continued)

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | FREQUENCY |
|--|---|
| TSR 3.9.13.5. Demonstrate operation of the normal uptravel stop interlock of the monorail and frame mounted auxiliary hoists to maintain at least 6 feet 9 inches of water coverage above the top of the irradiated control rod. | Within 7 days prior to the start of such operations with that hoist |
| TSR 3.9.13.6. Demonstrate operation of the slack cable cutoff on the main hoist when the load is less than 50 ± 10 pounds. | Within 7 days prior to the start of such operations with that hoist |
| TSR 3.9.13.7. Demonstrate operation of the loaded interlock on the main hoist when the load exceeds 350 ± 50 pounds. | Within 7 days prior to the start of such operations with that hoist |

Crane Travel - Spent and New Fuel Storage,
Transfer and Upper Containment Fuel Pools
TR 3.9.14

TR 3.9.14 Crane Travel - Spent and New Fuel Storage, Transfer and Upper
Containment Fuel Pools

TLCO 3.9.14 Loads in excess of 1200 pounds shall be prohibited from
travel over fuel assemblies in the spent or new fuel
storage, transfer or upper containment fuel pool racks and
all loads shall be prohibited from travel over irradiated
fuel when water level is < 23' over the irradiated fuel.

APPLICABILITY: With fuel assemblies in the spent or new fuel storage,
transfer or upper containment fuel pools.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| A. With the requirements of the above specification not satisfied. | A.1 Place the crane load in a safe condition. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| TSR 3.9.14.1 The fuel building crane loads shall be verified to weigh less than or equal to 1200 pounds. | Before travel over fuel assemblies in the spent or new fuel storage pools and the lower transfer pools |
| TSR 3.9.14.2 The reactor building polar crane loads shall be verified to weigh less than or equal to 1200 pounds. | Before travel over fuel assemblies in the upper transfer and containment fuel pools |

TR 3.9.15 Inclined Fuel Transfer System

TLCO 3.9.15 The inclined fuel transfer system (IFTS) may be in operation provided that:

- a. The floor plugs are installed and the access door of all rooms through which the transfer system penetrates are closed and locked.
- b. All access interlocks and palm switches are OPERABLE.
- c. The blocking valve located in the fuel building IFTS hydraulic power unit is OPERABLE.
- d. At least one IFTS carriage position indicator at each carriage position is OPERABLE and at least one liquid level sensor is OPERABLE.
- e. The keylock switch which provides access control lockout is OPERABLE.
- f. The warning lights outside of the access doors are OPERABLE.

APPLICABILITY: When the IFTS containment blank flange is removed and IFTS is operated to handle irradiated components.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|-----------------|
| A. One or more access interlocks, warning lights, and/or palm switches inoperable. | A.1 Prohibit entry into the area by establishing a continuous watch and conspicuously posting the area as a high radiation area. | Immediately |
| B. Required Action and associated Completion Time not met OR The requirements of the above specification not otherwise satisfied. | B.1 Suspend IFTS operation with the IFTS at either terminal point | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| TSR 3.9.15.1 Verify that no personnel are in areas immediately adjacent to the IFTS tube and that the floor plugs are installed and access doors, to rooms through which the IFTS tube penetrates, are closed and locked. | Within 1 hour prior to the startup of the IFTS |
| TSR 3.9.15.2 Verify that at least one IFTS carriage position indicator at each carriage position is OPERABLE and at least one level sensor is OPERABLE. | Within 4 hours prior to the operation of IFTS <u>AND</u> 12 hours |
| TSR 3.9.15.3 Verify that the warning lights outside of each access door are OPERABLE and the floor plug is installed. | Within 4 hours prior to the operation of IFTS <u>AND</u> 12 hours |
| TSR 3.9.15.4 Verify that the access interlock and palm switch are OPERABLE for the containment isolation valve room. | Within 4 hours prior to the operation of IFTS <u>AND</u> 7 days |
| TSR 3.9.15.5 Verify that the blocking valve in the Fuel Building IFTS hydraulic power unit is OPERABLE. | Within 4 hours prior to the operation of IFTS <u>AND</u> 7 days |
| continued | |

SURVEILLANCE REQUIREMENTS (continued)

| | | |
|--------------|--|--|
| TSR 3.9.15.6 | Verify that the keylock switch which provides access control lockout is OPERABLE. | Within 4 hours prior to the operation of IFTS <u>AND</u> 7 days |
| TSR 3.9.15.7 | Verify that the access interlocks and palm switches for the Fuel Building and Shield Building Annulus IFTS support rooms are OPERABLE. | Within 4 hours prior to installation of the floor plugs after they have been removed |

TR 3.11 RADIOACTIVE EFFLUENTS

TR 3.11.1.1 Liquid Effluents - Concentration

TLCO 3.11.1.1 The concentration of radioactive material released in liquid effluents to UNRESTRICTED AREAS (see USAR Section 2.1) shall be limited to the concentrations specified in 10 CFR Part 20, Appendix B, Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases the concentration shall be limited to 2×10^{-4} microcuries/ml total activity.

APPLICABILITY: At all times.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-----------------|
| A. With the concentration of radioactive material released in liquid effluents to UNRESTRICTED AREAS exceeding the above limits | A.1 Restore the concentration to within the above limits. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| TSR 3.11.1.1.1 Radioactive liquid wastes shall be sampled and analyzed according to the sampling and analysis program of Table 3.11.1.1-1 | according to the sampling and analysis program of Table 3.11.1.1-1. |
| TSR 3.11.1.1.2 The results of the radioactivity analyses shall be used in accordance with the methodology and parameters in the ODCM to assure that the concentrations at the point of release are maintained within the limits of Requirement 3.11.1.1 | according to the sampling and analysis program of Table 3.11.1.1-1. |

TABLE 3.11.1.1-1
RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

| Liquid Release Type | Sampling Frequency | Minimum Analysis Frequency | Type of Activity Analysis | Lower Limit of Detection (LLD) ^a (μCi/ml) |
|--|--------------------|----------------------------|---|--|
| A. Batch Waste Release (Liquid Radwaste Recovery Sample Tanks ^b) | P | P | Principal Gamma Emitters ^c ; except for Ce-144 | 5x10 ⁻⁷ |
| | Each Batch | Each Batch | | 5x10 ⁻⁶ |
| | | | I-131 | 1x10 ⁻⁶ |
| | P | M | Dissolved and Entrained Gases (Gamma Emitters) | 1x10 ⁻⁵ |
| | One Batch/M | | | |
| | P | M | H-3 | 1x10 ⁻⁵ |
| | Each Batch | Composite ^d | Gross Alpha | 1x10 ⁻⁷ |
| | P | Q | Sr-89, Sr-90 | 5x10 ⁻⁸ |
| | Each Batch | Composite ^d | Fe-55 | 1x10 ⁻⁶ |

a - The LLD is defined per Section 1.0

b - A batch release is the discharge of liquid wastes of a discrete volume. Prior to sampling for analyses, each batch shall be isolated, and then thoroughly mixed to assure representative sampling.

c - The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141, and Ce-144. This list does not mean that only these nuclides are to be considered. Other gamma peaks that are identifiable, together with those of the above nuclides, shall also be analyzed and reported in the Annual Radioactive Effluent Release Report pursuant to Technical Specification 5.6.3.

d - A composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged and in which the method of sampling employed results in a specimen that is representative of the liquids released.

TR 3.11.1.2 Dose

TLCO 3.11.1.2 The dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released to UNRESTRICTED AREAS (see USAR Section 2.1) shall be limited:

- a. During any calendar quarter to less than or equal to 1.5 mrems to the total body and to less than or equal to 5 mrems to any organ, and
- b. During any calendar year to less than or equal to 3 mrems to the total body and to less than or equal to 10 mrems to any organ.

APPLICABILITY: At all times.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-----------------|
| A. With the calculated dose, from the release of radioactive materials in liquid effluents, exceeding any of the above limits | A.1 Prepare and submit to the Commission, pursuant to Requirement TR 5.6.9, a Special Report that identifies the cause(s) for exceeding the limit(s) and defines the corrective actions that have been taken to reduce the releases and the proposed corrective actions to be taken to assure that subsequent releases will be in compliance with the above limits. | 30 days |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.11.1.2.1 Cumulative dose contributions from liquid effluents for the current calendar quarter and the current calendar year shall be determined in accordance with the methodology and parameters in the ODCM. | 31 days |

TR 3.11.1.3 Liquid Radwaste Treatment System

TLCO 3.11.1.3 The liquid radwaste treatment system shall be used to reduce the radioactive materials in liquid wastes prior to their discharge when the projected doses, due to the liquid effluent, to UNRESTRICTED AREAS (see USAR Section 2.1) would exceed 0.06 mrem to the total body or 0.2 mrem to any organ in a 31 day period.

APPLICABILITY: At all times.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-----------------|
| A. With radioactive liquid waste being discharged without treatment and in excess of the above limits | <p>A.1 Prepare and submit to the Commission, pursuant to Requirement TR 5.6.9, a Special Report that includes the following information:</p> <p>a. Explanation of why liquid radwaste was being discharged without treatment, identification of any inoperable equipment or subsystems, and the reason for the inoperability,</p> <p>b. Action(s) taken to restore the inoperable equipment to OPERABLE status, and</p> <p>c. Summary description of action(s) taken to prevent a recurrence.</p> | 30 days |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.11.1.3.1 Doses due to liquid releases to UNRESTRICTED AREAS shall be projected in accordance with the methodology and parameters in the ODCM. | 31 days |

TR 3.11.2.1 Gaseous Effluents - Dose Rate

TLCO 3.11.2.1 The dose rate, due to radioactive materials released in gaseous effluents from the site to areas at and beyond the SITE BOUNDARY (see USAR Section 2.1) shall be limited to the following:

- a. For noble gases: Less than or equal to 500 mrem/yr to the total body and less than or equal to 3000 mrem/yr to the skin, and
- b. For iodine-131, for iodine-133, for tritium, and for all radionuclides in particulate form with half lives greater than 8 days: Less than or equal to 1500 mrem/yr to any organ.

APPLICABILITY: At all times.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| A. With the dose rate(s) exceeding the above limits. | A.1 Restore the release rate to within the above limits. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| TSR 3.11.2.1.1 The dose rate due to noble gases in gaseous effluents shall be determined to be within the above limits in accordance with the methodology and parameters in the ODCM. | In accordance with the sampling and analysis program specified in Table 3.11.2.1-1 |
| TSR 3.11.2.1.2 The dose rate, due to iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half lives greater than 8 days in gaseous effluents, shall be determined to be within the above limits in accordance with the methodology and parameters in the ODCM by obtaining representative samples and performing analyses in accordance with the sampling and analysis program specified in Table 3.11.2.1-1. | In accordance with the sampling and analysis program specified in Table 3.11.2.1-1 |

TABLE 3.11.2.1-1 (page 1 of 2)
RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

| Gaseous Release Type | Sampling Frequency | Minimum Analysis Frequency | Type of Activity Analysis | Lower Limit of Detection (LLD) ^a (mCi/ml) |
|--|-------------------------------|--------------------------------------|---|--|
| A. Main Plant Exhaust Duct | M Grab Sample | M | Principal Gamma Emitters ^{b, c} | 1x10 ⁻⁴ |
| | | | H-3 | 1x10 ⁻⁶ |
| B. Fuel Building Ventilation Exhaust Duct | M ^d Grab Sample | M | Principal Gamma Emitters ^b | 1x10 ⁻⁴ |
| | | | H-3 | 1x10 ⁻⁶ |
| C. Radwaste Building Ventilation Exhaust Duct | M Grab Sample | M | Principal Gamma Emitters ^b | 1x10 ⁻⁴ |
| D. All Release Types as listed in A, B, C above. | Continuous ^e | W ^f Charcoal Sample | I-131 | 1x10 ⁻¹² |
| | | | I-133 | 1x10 ⁻¹⁰ |
| | Continuous ^e | W ^f Particulate Sample | Principal Gamma Emitters ^b (I-131, Others) | 1x10 ⁻¹¹ |
| | Continuous ^e | M Composite Particulate Sample | Gross Alpha | 1x10 ⁻¹¹ |
| | Continuous ^e | Q Composite Particulate Sample | SR-89, SR-90 | 1x10 ⁻¹¹ |
| | Continuous ^e | Noble Gas Monitor | Noble Gases Gross Beta or Gamma | 1x10 ⁻⁶ |

a - The LLD is defined per Section 1.0

b - The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for gaseous emissions and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be considered. Other gamma peaks that are identifiable, together with those of the above nuclides, shall also be analyzed and reported in the Annual Radioactive Effluent Release Report pursuant to Technical Specification 5.6.3.

(continued)

TABLE 3.11.2.1-1 (page 2 of 2)
RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

- c - Sampling and analysis shall also be performed following shutdown, startup, or a THERMAL POWER change exceeding 15 percent of RATED THERMAL POWER within one hour, unless (1) analysis shows that the DOSE EQUIVALENT I-131 concentration in the primary coolant has not increased more than a factor of 3 and (2) the condenser offgas noble gas activity monitor shows that offgas activity has not increased by more than a factor of 3.
- d - Tritium grab samples shall be taken at least once per 7 days from the ventilation exhaust from the spent fuel pool area, whenever spent fuel is in the spent fuel pool.
- e - The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Requirements 3.11.2.1, 3.11.2.2 and 3.11.2.3.
- f - Samples shall be changed at least once per 7 days, and analyses shall be completed within 48 hours after changing or after removal from sampler. Sampling shall also be performed at least once per 24 hours for the main plant exhaust for at least 7 days following each shutdown, startup or THERMAL POWER change exceeding 15 percent of RATED THERMAL POWER in one hour, and analyses shall be completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding LLDs may be increased by a factor of 10. This requirement does not apply if (1) analysis shows that the DOSE EQUIVALENT I-131 concentration in the primary coolant has not increased more than a factor of 3; and (2) the condenser offgas noble gas monitor shows that offgas activity has not increased more than a factor of 3.

TR 3.11.2.2 Dose - Noble Gases

TLCO 3.11.2.2 The air dose due to noble gases released in gaseous effluents to areas at and beyond the Site Area Boundary (see USAR Section 2.1) shall be limited to the following:

- a. During any calendar quarter: Less than or equal to 5 mrad for gamma radiation and less than or equal to 10 mrad for beta radiation and,
- b. During any calendar year: Less than or equal to 10 mrad for gamma radiation and less than or equal to 20 mrad for beta radiation.

APPLICABILITY: At all times.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-----------------|
| A. With the calculated air dose from radioactive noble gases in gaseous effluents exceeding any of the above limits | A.1 Prepare and submit to the Commission, pursuant to Requirement TR 5.6.9, a Special Report that identifies the cause(s) for exceeding the limit(s) and defines the corrective actions that have been taken to reduce the releases and the proposed corrective actions to be taken to assure that subsequent releases will be in compliance with the above limits. | 30 days |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.11.2.2.1 Determine cumulative dose contributions for the current calendar quarter and current calendar year for noble gases in accordance with the methodology and parameters in the ODCM. | 31 days |

TR 3.11.2.3 Dose - Iodine-131, Iodine-133, Tritium, and Radionuclides in
Particulate Form

TLCO 3.11.2.3 The dose to a MEMBER OF THE PUBLIC from iodine-131, iodine-133,
tritium, and all radionuclides in particulate form with half-
lives greater than 8 days, in gaseous effluents released to
areas at and beyond the SITE BOUNDARY (see USAR Section 2.1)
shall be limited to the following:

- a. During any calendar quarter: Less than or equal to
7.5 mrem to any organ and,
- b. During any calendar year: Less than or equal to 15 mrem
to any organ.

APPLICABILITY: At all times.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------|
| A. With the calculated dose from the release, in gaseous effluents, of iodine-131, iodine-133, tritium, and radionuclides in particulate form with half lives greater than 8 days, exceeding any of the above limits | A.1 Prepare and submit to the Commission, pursuant to Requirement TR 5.6.9, a Special Report that identifies the cause(s) for exceeding the limit(s) and defines the corrective actions that have been taken to reduce the releases and the proposed corrective actions to be taken to assure that subsequent releases will be in compliance with the above limits. | 30 days |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|-----------|
| TSR 3.11.2.3.1 Determine cumulative dose contributions for the current calendar quarter and current calendar year for iodine-131, iodine-133, tritium, and radionuclides in particulate form with half lives greater than 8 days in accordance with the methodology and parameters in the ODCM. | 31 days |

TR 3.11.2.4 Gaseous Radwaste Treatment

TLCO 3.11.2.4 The GASEOUS RADWASTE TREATMENT (OFFGAS) SYSTEM shall be in operation.

APPLICABILITY: Whenever the main condenser air ejector system is in operation.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| A. With GASEOUS RADWASTE TREATMENT (OFFGAS) SYSTEM inoperative | A.1 Restore to OPERABLE | 7 days |
| B. Required Action and associated Completion Time for Condition A not met | <p>B.1 Prepare and submit to the Commission, pursuant to Requirement TR 5.6.9, a Special Report that includes the following information:</p> <ol style="list-style-type: none"> 1. Identification of the inoperable equipment or subsystems and the reason for inoperability, 2. Action(s) taken to restore the inoperable equipment to OPERABLE status, and 3. Summary description of action(s) taken to prevent recurrence. | 30 days |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.11.2.4.1 The instruments specified in the ODCM shall be checked whenever the main condenser air ejector is in operation to ensure that the GASEOUS RADWASTE TREATMENT (OFFGAS) SYSTEM is functioning. | 12 hours |

TR 3.11.2.5 Ventilation Exhaust Treatment

TLCO 3.11.2.5 The VENTILATION EXHAUST TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected doses, due to gaseous effluent releases to areas at and beyond the SITE BOUNDARY (see USAR Section 2.1) would exceed 0.3 mrem to any organ in a 31 day period.

APPLICABILITY: At all times other than when the VENTILATION EXHAUST TREATMENT SYSTEM is undergoing routine maintenance.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-----------------|
| A. With gaseous waste being discharged from the ventilation exhaust ducts without treatment and in excess of the above limits | <p>A.1 Prepare and submit to the Commission, pursuant to Requirement TR 5.6.9, a Special Report that includes the following information:</p> <ol style="list-style-type: none"> 1. Explanation of why gaseous radwaste was being discharged without treatment, identification of any inoperable equipment or subsystems, and the reason for the inoperability, 2. Action(s) taken to restore the inoperable equipment to OPERABLE status, and 3. Summary description of action(s) taken to prevent a recurrence. | 30 days |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| TSR 3.11.2.5.1 Doses due to gaseous releases from the site shall be projected in accordance with the methodology and parameters in the ODCM. | 31 days |

TR 3.11.3 Solid Radioactive Waste

TLCO 3.11.3 The solid radwaste system shall be used in accordance with a PROCESS CONTROL PROGRAM to process wet radioactive wastes to meet shipping and burial ground requirements.

APPLICABILITY: At all times.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|--|
| A. With the provisions of the PROCESS CONTROL PROGRAM not satisfied. | A.1 Suspend shipments of defectively processed or defectively packaged solid radioactive wastes from the site | Immediately |
| B. Initial test specimen from a batch of waste fails to verify SOLIDIFICATION | B.1 Modify the PROCESS CONTROL PROGRAM as required, as provided in Technical Requirement TR 5.5.14, to assure SOLIDIFICATION of subsequent batches of waste. | prior to subsequent batch SOLIDIFICATION |

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------|
| C. If any test specimen fails to verify SOLIDIFICATION | C.1 The SOLIDIFICATION of the batch under test shall be suspended <u>AND</u> | Immediately |
| | C.2 Action shall be initiated to: obtain additional test specimens, <u>AND</u> determine alternative SOLIDIFICATION parameters in accordance with the PROCESS CONTROL PROGRAM, to permit resumption of SOLIDIFICATION <u>AND</u> perform a subsequent test to verify SOLIDIFICATION using the alternative SOLIDIFICATION parameters determined by the PROCESS CONTROL PROGRAM. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>TSR 3.11.3.1 THE PROCESS CONTROL PROGRAM shall be used to collect and test representative test specimens to verify the SOLIDIFICATION of each type of wet radioactive waste (e.g., filter sludges, spent resins, evaporator bottoms, sodium sulfate solutions).</p> | <p>At least one representative test specimen from at least every tenth batch of each type of wet radioactive waste.</p> <p><u>AND</u></p> <p>When Condition B is entered perform for each consecutive batch of the same type of wet waste until at least 3 consecutive initial test specimens demonstrate SOLIDIFICATION</p> |

TR 3.11.4 Total Dose

TLCO 3.11.4

The annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC, due to releases of radioactivity and to radiation from uranium fuel cycle sources, shall be limited to less than or equal to 25 mrem to the total body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrem.

APPLICABILITY: At all times.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|-----------------|
| A. With the calculated doses from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of TLCO 3.11.1.2.a, TLCO 3.11.1.2.b, TLCO 3.11.2.2.a, TLCO 3.11.2.2.b, TLCO 3.11.2.3.a or TLCO 3.11.2.3.b, | A.1 Perform TSR 3.11.4.1 and TSR 3.11.4.2 | Immediately |

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--------------------------------|---|-----------------|
| B. TLCO 3.11.4 limits exceeded | B.1 Prepare and submit to the Commission, pursuant to Requirement TR 5.6.9, a Special Report that defines the corrective action to be taken to reduce subsequent releases to prevent recurrence of exceeding the above limits and that includes the schedule for achieving conformance with the above limits. This Special Report, as defined in 10 CFR Part 20.2203(a)(4), shall include an analysis that estimates the radiation exposure (dose) to a MEMBER OF THE PUBLIC from uranium fuel cycle sources, including all effluent pathways and direct radiation, for the calendar year that includes the release(s) covered by this report. It shall also describe levels of radiation and concentrations of radioactive material involved, and the cause of the exposure levels or concentrations. If the estimated dose(s) exceeds the above limits and, if the release condition resulting in violation of 40 CFR Part 190 has not already been corrected, the Special Report shall include a request for a variance in accordance with the provisions of 40 CFR Part 190. Submittal of the report is considered a timely request, and a variance is granted until staff action on the request is complete. | 30 days |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| TSR 3.11.4.1 | Cumulative dose contributions from liquid and gaseous effluents shall be determined in accordance with the methodology and parameters in the ODCM. | 31 days using TSR 3.11.1.2.1, TSR 3.11.2.2.1, and TSR 3.11.2.3.1 data. <u>AND</u> As specified by Required Action A.1 |
| TSR 3.11.4.2 | Cumulative dose contributions from direct radiation from the reactor unit and from any unprotected outdoor storage tanks shall be determined in accordance with the methodology and parameters in the ODCM. | As specified by Required Action A.1 |

TR 3.12 RADIOLOGICAL ENVIRONMENTAL MONITORING

TR 3.12.1 Monitoring Program

TLCO 3.12.1 The radiological environmental monitoring program shall be conducted as specified in Table 3.12.1-1.

APPLICABILITY: At all times.

ACTIONS

- a. With the radiological environmental monitoring program not being conducted as specified in Table 3.12.1-1, prepare and submit to the Commission, in the Annual Radiological Environmental Operating Report required by Technical Specification 5.6.2, a description of the reasons for not conducting the program as required and the plans for preventing a recurrence.
- b. With the level of radioactivity, as the result of plant effluents, in an environmental sampling medium at a specified location exceeding the reporting levels of Table 3.12.1-2 when averaged over any calendar quarter, prepare and submit to the Commission within 30 days, pursuant to Requirement 5.6.9, a Special Report that identifies the cause(s) for exceeding the limit(s) and defines the corrective actions to be taken to reduce radioactive effluents so that the potential annual dose* to A MEMBER OF THE PUBLIC is less than the calendar year limits of Requirements 3.11.1.2, 3.11.2.2, and 3.11.2.3. When more than one of the radionuclides in Table 3.12.1-2 are detected in the sampling medium, this report shall be submitted if:

$$\frac{\text{concentration (1)}}{\text{reporting level (1)}} + \frac{\text{concentration (2)}}{\text{reporting level (2)}} + \dots \geq 1.0$$

When radionuclides other than those in Table 3.12.1-2 are detected and are the result of plant effluents, this report shall be submitted if the potential annual dose* to A MEMBER OF THE PUBLIC is equal to or greater than the calendar year limits of Requirements 3.11.1.2, 3.11.2.2 and 3.11.2.3. This report is not required if the measured level of radioactivity was not the result of plant effluents; however, in such an event, the condition shall be reported and described in the Annual Radiological Environmental Operating Report.

(continued)

*The methodology and parameters used to estimate the potential annual dose to a MEMBER OF THE PUBLIC shall be indicated in this report.

ACTION (continued)

- c. With milk or broad leaf vegetation samples unavailable from one or more of the sample locations required by Table 3.12.1-1, identify locations for obtaining replacement samples and add them to the radiological environmental monitoring program within 30 days. The specific locations from which samples were unavailable may then be deleted from the monitoring program. Pursuant to Technical Specification 5.6.3, identify the cause of the unavailability of samples and identify the new location(s) for obtaining replacement samples in the next Annual Radioactive Effluent Release Report and include in the report a revised figure(s) and table for the ODCM reflecting the new location(s).

SURVEILLANCE REQUIREMENTS

- TSR 3.12.1.1 The radiological environmental monitoring samples shall be collected pursuant to Table 3.12.1-1 from the specific locations given in the table and figure(s) in the ODCM, and shall be analyzed pursuant to the requirements of Table 3.12.1-1 and the detection capabilities required by Table 3.12.1-3.

TABLE 3.12.1-1 (page 1 of 4)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

| Exposure Pathway and/or Sample | Number of Representative Samples and Sample Locations ^a | Sampling and Collection Frequency | Type and Frequency of Analysis |
|-----------------------------------|---|---|--|
| 1. DIRECT RADIATION ^b | <p>40 routine monitoring stations either with two or more dosimeters or with one instrument for measuring and recording dose rate continuously, placed as follows:</p> <p>an inner ring of stations, one in each meteorological sector in the general area of the SITE BOUNDARY;</p> <p>an outer ring of stations, one in each meteorological sector in the 6- to 8-km range from the site;</p> <p>the balance of the stations to be placed in special interest areas such as population centers, nearby residences, schools, and in 1 or 2 areas to serve as control stations.</p> | Quarterly | Gamma dose quarterly. |
| 2. AIRBORNE | | | |
| Radioiodine and Particulates | <p>Samples from 5 locations:</p> <p>3 samples from close to the 3 SITE BOUNDARY locations, in different sectors, of the highest calculated annual average groundlevel D/Q.</p> <p>1 sample from the vicinity of a community having the highest calculated annual average ground level D/Q.</p> <p>1 sample from a control location, as for example 15-30 km distant and in the least prevalent wind direction.^c</p> | Continuous sampler operation with sample collection weekly, or more frequently if required by dust loading. | <p>Radioiodine Canister: I-131 analysis weekly.</p> <p>Particulate Sampler: Gross beta radioactivity analysis following filter change;^d Gamma isotopic analysis^e of composite (by location) quarterly.</p> |

(continued)

TABLE 3.12.1-1 (page 2 of 4)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

| Exposure Pathway and/or Sample | Number of Representative Samples and Sample Locations ^a | Sampling and Collection Frequency | Type and Frequency of Analysis |
|--------------------------------|---|--|---|
| 3. WATERBORNE | | | |
| a. Surface ^f | 1 sample upstream and 1 sample downstream. Discharge line. | Weekly samples composited monthly or quarterly. Composite sample over 1-month period ^g | Gamma isotopic analysis ^e monthly. Composite for tritium analysis quarterly. |
| b. Ground | Samples from 1 or 2 sources only if likely to be affected ^h | Quarterly | Gamma isotopic ^e and tritium analysis quarterly. |
| c. Sediment from shoreline | 1 sample from downstream area with existing or potential recreational value. | Semiannually | Gamma isotopic analysis ^e semiannually. |
| 4. INGESTION | | | |
| a. Milk | Samples from milking animals in 3 locations within 5 km distance having the highest dose potential. If there are none, then 1 sample from milking animals in each of 3 areas 5 to 8 km distant where doses are calculated to be greater than 1 mrem per yr. ⁱ 1 sample from milking animals at a control location 15-30 km distant and in the least prevalent wind direction. | Semimonthly when animals are on pasture, monthly at other times | Gamma isotopic ^e and I-131 analysis semimonthly when animals are on pasture, monthly at other times. |
| b. Fish and Invertebrates | 1 sample of each of three commercially and/or recreationally important species in vicinity of plant discharge area. 1 sample of each of three species in areas not influenced by plant discharge. | Sample in season, or semiannually if they are not seasonal. | Gamma isotopic analysis ^e on edible portions. |
| c. Food Products | Samples of 3 different kinds of broad leaf vegetation grown near each of two different locations near the site boundary of highest predicted annual average ground level D/Q if milk sampling is not performed. 1 sample of each of the similar broad leaf vegetation grown 15-30 km distant near the least prevalent wind direction, if milk sampling is not performed. | Monthly during the growing season. Monthly during the growing season. | Gamma isotopic ^e and I-131 analysis. Gamma isotopic ^e and I-131 analysis. |

TABLE 3.12.1-1 (page 3 of 4)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

- a - The ODCM shall include, in a table and figures, specific parameters of distance and direction sector from the centerline of one reactor, and additional description where pertinent, for each sample location in Table 3.12.1-1. Refer to NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants," October 1978, and to Radiological Assessment Branch Technical Position, Revision 1, November 1979. Deviations are permitted from the required sampling schedule if specimens are unobtainable due to hazardous conditions, seasonal unavailability, malfunction of automatic sampling equipment, or other legitimate reasons. If specimens are unobtainable due to sampling equipment malfunction, every effort shall be made to complete corrective action prior to the end of the next sampling period. All deviations from the sampling schedule shall be documented in the Annual Radiological Environmental Operating Report pursuant to Technical Specification 5.6.2. It is recognized that, at times, it may not be possible or practicable to continue to obtain samples of the media of choice at the most desired location or time. In these instances suitable alternative media and locations may be chosen for the particular pathway in question and appropriate substitutions made within 30 days in the radiological environmental monitoring program. In the next Annual Radioactive Effluent Release Report, pursuant to Technical Specification 5.6.3, identify the cause of the unavailability of samples for that pathway and identify the new location(s) for obtaining replacement samples, and also include in the report a revised figure(s) and table for the ODCM reflecting the new location(s).
- b - One or more instruments, such as a pressurized ion chamber, for measuring and recording dose rate continuously may be used in place of, or in addition to, integrating dosimeters. For the purposes of this table, a thermoluminescent dosimeter (TLD) is considered to be one phosphor; two or more phosphors in a packet are considered as two or more dosimeters. Film badges shall not be used as dosimeters for measuring direct radiation. The 40 stations is not an absolute number. The number of direct radiation monitoring stations may be reduced according to geographical limitations; e.g., at an ocean site, some sectors will be over water so that the number of dosimeters may be reduced accordingly. The frequency of analysis or readout for TLD systems will depend upon the characteristics of the specific system used and should be selected to obtain optimum dose information with minimal fading.
- c - The purpose of this sample is to obtain background information. If it is not practical to establish control locations in accordance with the distance and wind direction criteria, other sites that provide valid background data may be substituted.

TABLE 3.12.1-1 (page 4 of 4)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

- d - Airborne particulate sample filters shall be analyzed for gross beta radioactivity 24 hours or more after sampling to allow for radon and thoron daughter decay. If gross beta activity in air particulate samples is greater than ten times the yearly mean of control samples, gamma isotopic analysis shall be performed on the individual samples.
- e - Gamma isotopic analysis means the identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents from the facility.
- f - The "upstream sample" shall be taken at a distance beyond significant influence of the discharge. The "downstream" sample shall be taken in an area beyond but near the mixing zone. "Upstream" samples in an estuary must be taken far enough upstream to be beyond the plant influence.
- g - Composite samples shall be collected at intervals which are very short (e.g., hour), relative to the compositing period (e.g., monthly).
- h - Groundwater samples shall be taken when this source is tapped for drinking or irrigation purposes in areas where the hydraulic gradient or recharge properties are suitable for contamination.
- i - The dose shall be calculated for the maximum organ and age group, using the methodology and parameters in the ODCM.

TABLE 3.12.1-2
REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

| Analysis | Water (a) (pCi/l) | Airborne Particulate or Gases (pCi/m ³) | Fish (pCi/kg, wet) | Milk (pCi/l) | Food Products (pCi/kg, wet) |
|----------|----------------------|--|--------------------------|-----------------|--------------------------------------|
| H-3 | 20,000* | | | | |
| Mn-54 | 1,000 | | 30,000 | | |
| Fe-59 | 400 | | 10,000 | | |
| Co-58 | 1,000 | | 30,000 | | |
| Co-60 | 300 | | 10,000 | | |
| Zn-65 | 300 | | 20,000 | | |
| Nb-95 | 400 | | | | |
| Zr-95 | 400 | | | | |
| I-131 | 2** | 0.9 | | 3 | 100 |
| Cs-134 | 30 | 10 | 1,000 | 60 | 1,000 |
| Cs-137 | 50 | 20 | 2,000 | 70 | 2,000 |
| Ba-140 | 200 | | | 300 | |
| La-140 | 200 | | | 300 | |

(a) For discharge line samples, these values may be increased by a factor of 11.4 to account for near-field dilution by the Mississippi River.

*For drinking water samples. This is 40 CFR Part 141 value. If no drinking water pathway exists, a value of 30,000 pCi/l may be used.

**If no drinking water pathway exists, a value of 20 pCi/l may be used.

TABLE 3.12.1-3 (page 1 of 2)
DETECTION CAPABILITIES FOR ENVIRONMENTAL SAMPLE ANALYSIS^a
LOWER LIMIT OF DETECTION (LLD)^{b, c}

| Analysis | Water (pCi/l) | Airborne Particulate or Gases (pCi/m ³) | Fish (pCi/kg, wet) | Milk (pCi/l) | Food Products (pCi/kg, wet) | Sediment (pCi/kg, dry) |
|---------------|------------------|--|--------------------------|-----------------|--------------------------------------|------------------------------|
| gross beta | 4 | 0.01 | | | | |
| H-3 | 2000* | | | | | |
| Mn-54 | 15 | | 130 | | | |
| Fe-59 | 30 | | 260 | | | |
| Co-58, 60 | 15 | | 130 | | | |
| Zn-65 | 30 | | 260 | | | |
| Nb-95 | 15 | | | | | |
| Zr-95 | 30 | | | | | |
| I-131 | 1** | 0.07 | | 1 | 60 | |
| Cs-134 | 15 | 0.05 | 130 | 15 | 60 | 150 |
| Cs-137 | 18 | 0.06 | 150 | 18 | 80 | 180 |
| La-140 | 15 | | | 15 | | |
| Ba-140 | 60 | | | 60 | | |

*If no drinking water pathway exists, a value of 3000 pCi/l may be used.

**If no drinking water pathway exists, a value of 15 pCi/l may be used.

TABLE 3.12.1-3 (page 2 of 2)
DETECTION CAPABILITIES FOR ENVIRONMENTAL SAMPLE ANALYSIS^a
LOWER LIMIT OF DETECTION (LLD)^b

- a - This list does not mean that only these nuclides are to be considered. Other peaks that are identifiable, together with those of the above nuclides, shall also be analyzed and reported in the Annual Radiological Environmental Operating Report pursuant to Technical Specification 5.6.2.
- b - Required detection capabilities for thermoluminescent dosimeters used for environmental measurements are given in Regulatory Guide 4.13.
- c. LLD is defined in section 1.0. It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as an a posteriori (after the fact) limit for a particular measurement. Analyses shall be performed in such a manner that the stated LLDs will be achieved under routine conditions. Occasionally, background fluctuations, unavoidably small sample sizes, the presence of interfering nuclides, or other uncontrollable circumstances may render these LLDs unachievable. In such cases, the contributing factors shall be identified and described in the Annual Radiological Environmental Operating Report pursuant to Technical Specification 5.6.2.

TR 3.12.2 Land Use Census

TLCO 3.12.2

A land use census shall be conducted and shall identify within a distance of 8 km (5 miles) the location, in each of the 16 meteorological sectors, of the nearest milk animal, the nearest residence and the nearest garden* of greater than 50 m² (500 ft²) producing broad leaf vegetation.

APPLICABILITY: At all times.

ACTIONS

- a. With a land use census identifying a location(s) that yields a calculated dose or dose commitment greater than the values currently being calculated in Requirement TSR 3.11.2.3.1, identify the new location(s) in the next Annual Radioactive Effluent Release Report, pursuant to Technical Specification 5.6.3.
- b. With land use census identifying a location(s) that yields a calculated dose or dose commitment (via the same exposure pathway) 20 percent greater than at a location from which samples are currently being obtained in accordance with Requirement 3.12.1, add the new location(s) to the radiological environmental monitoring program within 30 days. The sampling location(s), excluding the control station location, having the lowest calculated dose or dose commitment(s), via the same exposure pathway, may be deleted from this monitoring program after October 31 of the year in which this land use census was conducted. Pursuant to Technical Specification 5.6.3, identify the new location(s) in the next Annual Radioactive Effluent Release Report and include in the report a revised figure(s) and table for the ODCM reflecting the new location(s).

*In lieu of the garden census, broad leaf vegetation sampling of at least three different kinds of vegetation may be performed at the site boundary in each of two different direction sectors with the highest predicted D/Qs. Requirements for broad leaf vegetation sampling in Table 3.12.1-1, 4c shall be followed, including analysis of control samples.

SURVEILLANCE REQUIREMENTS

TSR 3.12.2.1 At least once per 12 months, the land use census shall be conducted during the growing season, using that information that will provide the best results, such as by a door-to-door survey or aerial survey or by consulting local agriculture authorities. The results of the land use census shall be included in the Annual Radiological Environmental Operating Report pursuant to Technical Specification 5.6.2.

TR 3.12.3 Interlaboratory Comparison Program

TLCO 3.12.3 Analyses shall be performed on radioactive materials, that correspond to samples required by Table 3.12.1-1, supplied as part of an Interlaboratory Comparison Program that has been approved by the Commission.

APPLICABILITY: At all times.

ACTIONS

- a. With analyses not being performed as required above, report to the Commission, in the Annual Radiological Environmental Operating Report pursuant to Technical Specification 5.6.2, the corrective actions taken to prevent a recurrence.

SURVEILLANCE REQUIREMENTS

TSR 3.12.3.1 The Interlaboratory Comparison Program shall be described in the ODCM. A summary of the results obtained as part of the above required Interlaboratory Comparison Program shall be included in the Annual Radiological Environmental Operating Report pursuant to Technical Specification 5.6.2.

TR 5.0 ADMINISTRATIVE CONTROLS

TR 5.1 Responsibility

TR 5.1.1 (Not used)

TR 5.1.2 A management directive restating the Technical Specification 5.1.2 Control Room command function requirements signed by the Vice President, Operations - RBS shall be issued to all station personnel on an annual basis.

TR 5.2 Organization

TR 5.2.1 Plant Specific Titles

The following are the plant specific titles for the personnel fulfilling responsibilities of positions delineated in Technical Specifications:

- a. The corporate executive responsible for overall plant nuclear safety is Vice President, Operations - River Bend Station (RBS).
- b. The Plant manager is the General Manager, Plant Operations.
- c. The shift superintendent is the Superintendent, Operations Shift (OSS).
- d. A non-licensed operator is a Nuclear Equipment Operator.
- e. The operations manager is the Manager - Operations.
- f. The operations middle manager is the Superintendent - Operations.
- g. The radiation protection manager is the Superintendent - Radiation Control.
- h. A health physics technician is an individual qualified as a Radiation Protection Technician.
- i. Health Physics supervision is Radiation Control personnel, Supervisor and above.

TR 5.2.2

Unit Staff

- a. Each on duty shift shall be composed of at least minimum shift crew composition shown in Table 5.2.2-1, the health physics technician specified in Technical Specifications 5.2.2.d, and the fire brigade specified in Requirement 5.2.2.c, except as allowed in Technical Specifications 5.2.2.c, d, and Requirement 5.2.2.c. The provisions of Technical Specifications 5.2.2.c, d and Requirement 5.2.2.c allowing for unexpected absences are not to be used at shift turnover to accomodate oncoming personnel being late or absent.
- b. As required by 10 CFR 50.54, all CORE ALTERATIONS shall be observed and directly supervised by either a person holding a license as a Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation.
- c. A site fire brigade of at least five members shall be maintained on site at all times. The fire brigade shall not include the shift superintendent, the Shift Technical Advisor, the Control Room Supervisor, nor the two other members of the minimum shift crew necessary for safe shutdown of the unit and any personnel required for other essential functions during a fire emergency. Fire brigade composition may be one less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty fire brigade members provided immediate action is taken to restore the fire brigade composition to within the minimum requirements.
- d. Persons performing on-shift duties as shift superintendent or Control Room Supervisor shall hold a senior reactor operator license. Persons performing on-shift duties as Nuclear Control Operators shall hold, as a minimum, a reactor operator license as specified in chapter 13 of the Updated Safety Analysis Report.
- e. The objective of Technical Specification 5.2.2.e is to have operating personnel work a nominal 42-hour week while the unit is operating.

TABLE 5.2.2-1
MINIMUM SHIFT CREW COMPOSITION

| POSITION | NUMBER OF INDIVIDUALS REQUIRED TO FILL POSITION | |
|----------|---|---------------------|
| | <u>MODES 1, 2, or 3</u> | <u>MODES 4 or 5</u> |
| SS | 1 | 1 |
| SRO | 1 | None |
| RO | 2 | 1 |
| NO | 2 | 1 |
| STA | 1 | None |

TABLE NOTATION

SS - Shift Superintendent with a Senior Operator license.
SRO - Individual with a Senior Operator license.
RO - Individual with an Operator license.
NO - Nuclear Equipment Operator
STA - Shift Technical Advisor

*The Shift Technical Advisor (STA) position may be filled by an on-shift shift superintendent (SS) or Senior Reactor Operator (SRO) provided the individual meets the STA qualifications for the dual role position specified below and five (5) licensed operators are on shift.

For the dual role position, the Shift Technical Advisor shall have a bachelor's degree in engineering, engineering technology, or physical science from an accredited institution, including course work in the mathematical or engineering sciences, or a professional engineer's license obtained by successful completion of the PE examination and shall have received all of the training for the normal STA position described below.

The dedicated Shift Technical Advisor shall have a bachelor's degree or equivalent in a scientific or engineering discipline and shall have received specific training in the response and analysis of the unit for transients and accidents, and in unit design and layout, including the capabilities of instrumentation and controls in the control room.

TR 5.2.3 Independent Safety Engineering Group (ISEG)

TR 5.2.3.1 Function

The ISEG shall function to examine unit operating characteristics, NRC issuances, industry advisories, Licensee Event Reports, and other sources of unit design and operating experience information, including units of similar design, which may indicate areas for improving unit safety. The ISEG shall make detailed recommendations for revised procedures, equipment modifications, maintenance activities, operations activities, or other means of improving unit safety to the Director- Nuclear Safety.

TR 5.2.3.2 Composition

The ISEG shall be composed of at least five, dedicated, full-time engineers located onsite. Each shall have a bachelor's degree in engineering or related science and at least 2 years professional level experience in his field, of which at least 1 year experience shall be in the nuclear field.

TR 5.2.3.3 Responsibilities

The ISEG shall be responsible for maintaining surveillance of unit activities to provide independent verification* that these activities are performed correctly and that human errors are reduced as much as practical.

TR 5.2.3.4 Records

Records of activities performed by the ISEG shall be prepared, maintained, and forwarded each calendar month to the Director- Nuclear Safety.

*Not responsible for the sign-off function

TR 5.3 Unit Staff Qualifications

TR 5.3.1 Licensed Operator Qualifications

The licensed Operators and Senior Operators shall also meet or exceed the minimum qualifications of the supplemental requirements specified in Sections A and C of Enclosure 1 of the March 28, 1980 NRC letter to all licensees.

TR 5.3.2 Training

A retraining and replacement training program for the unit staff shall be maintained under the direction of the Manager - Training and shall meet or exceed the requirements and recommendations of Section 5.5 of ANSI/ANS 3.1-1978 and Appendix A of 10 CFR Part 55 and the supplemental requirements specified in Sections A and C of Enclosure 1 of the March 28, 1980 NRC letter to all licensees, and shall include familiarization with relevant industry operational experience.

TR 5.4 Procedures

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

- a. The applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978.
- b. The emergency operating procedures required to implement the requirements of NUREG-0737 and supplements thereto.
- c. Refueling operations.
- d. Surveillance and test activities of safety-related equipment.
- e. Security Plan implementation.
- f. Emergency Plan implementation.
- g. Fire Protection Program implementation.
- h. Process Control Program implementation.
- i. Offsite Dose Calculation Manual implementation.
- j. Quality Assurance Program for effluent and environmental monitoring.
- k. Technical Requirements Manual implementation.
- l. Technical Specifications Bases Control Program implementation.

TR 5.4.2 Each procedure of Requirement 5.4.1, and changes thereto, shall be reviewed and approved in accordance with Requirement 5.8.2 1.

TR 5.4.3 Temporary changes to procedures of Requirement 5.4.1 may be made provided:

- a. The intent of the original procedure is not altered;
- b. The change is approved by two members of the plant management staff, at least one of whom holds a Senior Operator license on the unit affected; and
- c. The change is documented, reviewed by the FRC as required by Requirement 5.8.1.6, and approved in accordance with Requirement 5.8.2.1 within 14 days of implementation.

TR 5.5 Programs and Manuals

TR 5.5.1 through TR 5.5.5 (Not Used)

TR 5.5.6 Inservice Inspection and Testing Programs

In addition to the requirements for the Inservice Testing Program contained in Technical Specification 5.5.6, Surveillance Requirements for inservice inspection and testing of ASME Code Class 1, 2, & 3 components shall be applicable as follows:

- a. Inservice inspection of ASME Code Class 1, 2, and 3 components and inservice testing of ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g) (6) (i).
- b. Surveillance intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice inspection and testing activities required by the ASME Boiler and Pressure Vessel Code and applicable Addenda shall be applicable as follows in the Technical Specifications and TRM:

| ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice inspection and testing activities | Require frequencies for for performing inservice inspection and testing activities |
|---|--|
| Weekly | At least once per 7 days |
| Monthly | At least once per 31 days |
| Quarterly or every 3 months | At least once per 92 days |
| Semiannually or every 6 months | At least once per 184 days |
| Every 9 months | At least once per 276 days |
| Yearly or annually | At least once per 366 days |

- c. The provisions of Technical Specification SR 3.0.2 are applicable to the above required frequencies for performing Technical Specification required inservice inspection and testing activities. The provisions of Technical Requirement TSR 3.0.2 are applicable to the above required frequencies for performing TRM required inservice inspection and testing activities
- d. Performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements.
- e. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical Specification.

TR 5.5.6 (continued)

- f. The Inservice Inspection Program (ISI) for piping susceptible to Inter-granular Stress Corrosion Cracking (IGSCC) shall be performed in accordance with the NRC positions included in Generic Letter 88-01.

TR 5.5.7 Filter Testing Program

In addition to the requirements of Technical Specification 5.5.7 the following requirements apply to the filter testing program:

- a. The testing requirements of Technical Specification 5.5.7.a will be performed at least once per 18 months or (1) after any structural maintenance on the HEPA filter (2) following painting, fire or chemical release in any ventilation zone communicating with the subsystem, or (3) after each complete or partial replacement of a HEPA filter bank.
- b. The testing requirements of Technical Specification 5.5.7.b will be performed at least once per 18 months or (1) after any structural maintenance on the charcoal adsorber housings, (2) following painting, fire or chemical release in any ventilation zone communicating with the subsystem, or (3) following each complete or partial replacement of a charcoal adsorber bank.
- c. The testing requirements of Technical Specification 5.5.7.c will be performed at least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, (2) following painting, fire or chemical release in any ventilation zone communicating with the subsystem, or (3) every 720 hours of charcoal adsorber operation. The representative carbon sample will be tested within 31 days following removal.
- d. The testing requirements of Technical Specification 5.5.7.d will be performed at least once per 18 months.
- e. The testing requirements of Technical Specification 5.5.7.e will be performed at least once per 18 months.

TR 5.5.8 Explosive Gas and Storage Tank Radioactivity Monitoring Program

a. Explosive Gas Monitoring Program

The surveillance program required by Technical Specification 5.5.8.a ensures that the concentration of hydrogen in the main condenser offgas treatment system shall be limited to less than or equal to 4% by volume whenever the main condenser offgas treatment system is in operation. With the concentration of hydrogen in the main condenser offgas treatment system exceeding the limit, restore the concentration to within the limit within 48 hours. The concentration of hydrogen in the main condenser offgas treatment system shall be determined to be within the above limits by continuously monitoring the waste gas in the main condenser off-gas treatment system with the hydrogen monitor required by TLCO 3.3.7.8.3.

b. Storage Tank Radioactivity Monitoring Program

The surveillance program required by Technical Specification 5.5.8.b will require the quantity of radioactive material to be determined by analyzing a representative sample of the tank's contents at least once per 7 days when radioactive materials are being added to the associated tanks. With the quantity of radioactive material in any of the tanks exceeding the limit, immediately suspend all additions of radioactive material to the associated tank(s) and within 48 hours reduce the tank(s) contents to within the limit, and describe the events leading to the condition in the next Annual Radioactive Effluent Release Report.

TR 5.5.9 through TR 5.5.12 (not Used)

TR 5.5.13 Radiation Protection Program

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained, and adhered to for all operations involving personnel radiation exposure.

TR 5.5.14 Process Control Program (PCP)

The Process Control Program shall contain the current formula, sampling, analyses, tests, and determinations to be made to ensure that the processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Part 20, 10 CFR Part 61, 10 CFR Part 71 and Federal and State regulations and other requirements governing the disposal of the radioactive waste. The PCP shall be approved by the Commission prior to implementation.

(continued)

TR 5.5.14 (continued)

licensee-initiated changes to the PCP:

- TR 5.5.14.1. Shall be submitted to the Commission in the Annual Radioactive Effluent Release Report. This submittal shall contain:
- a. Sufficiently detailed information to totally support the rationale for the change without benefit of additional or supplemental information;
 - b. A determination that the change did not reduce the overall conformance of the solidified waste product to existing criteria for solid wastes, and
 - c. Documentation of the fact that the change has been reviewed and found acceptable pursuant to Requirement 5.8.2.

TR 5.5.14.2. Shall become effective upon review and acceptance pursuant to Requirement 5.8.2.

TR 5.5.15 In-Plant Radiation Monitoring

A program which will ensure the capability to accurately determine the airborne iodine concentration in vital areas under accident conditions. This program shall include the following:

- a. Training of personnel,
- b. Procedures for monitoring, and
- c. Provisions for maintenance of sampling and analysis equipment.

TR 5.6 Reporting Requirements

The reports required by Technical Specification 5.6 and the following reports shall be submitted to the U.S. Nuclear Regulatory Commission, Document Control Desk, Washington, DC 20555, with a copy to the Regional Office of the NRC and a copy to the NRC Resident Inspector, unless otherwise noted.

TR 5.6.1 (Not Used)

TR 5.6.2 Annual Radiological Environmental Operating Report

Routine Annual Radiological Environmental Operating Reports covering the operation of the unit during the previous calendar year shall be submitted as required by Technical Specification 5.6.2.

The Annual Radiological Environmental Operating Reports shall also include a comparison of data for the period (as appropriate) with preoperational studies, operational controls and previous environmental surveillance reports, and an assessment of the observed impacts of the plant operation on the environment. The reports shall also include the results of land use censuses required by Requirement 3.12.2.

The reports shall also include the following: a summary description of the radiological environmental monitoring program; at least two legible maps* covering all sampling locations keyed to a table giving distances and directions from the centerline of the reactor plant; the results of licensee participation in the Interlaboratory Comparison Program, required by Requirement 3.12.3; discussion of all deviations from the Sampling Schedule of Table 3.12.1-1; and discussion of all analyses in which the LLD required by Table 3.12.1-1 was not achievable.

*One map shall cover stations near the SITE BOUNDARY; a second shall include the more distant stations.

TR 5 6.3 Annual Effluent Release Report

Routine Annual Radioactive Effluent Release Report covering the operation of the unit during the previous 12 months of operation shall be submitted as required by Technical Specification 5.6.3.

The Annual Radioactive Effluent Release Report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the facility as outlined in Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants," Revision 1, June 1974, with data summarized on a quarterly basis following the format of Appendix B thereof. For solid wastes, the format for Table 3 in Appendix B shall be supplemented with three additional categories: class of solid wastes (as defined by 10 CFR Part 61), type of container (e.g., LSA, Type A, Type B, Large Quantity) and SOLIDIFICATION agent or absorbent (e.g., cement, urea formaldehyde).

The Annual Radioactive Effluent Release Report shall include a summary of hourly meteorological data collected over the previous year. This summary may be either in the form of an hour-by-hour listing on magnetic tape of wind speed, wind direction and atmospheric stability, and precipitation (if measured), or in the form of joint frequency distributions of wind speed, wind direction, and atmospheric stability. This same report shall include an assessment of the radiation doses due to the radioactive liquid and gaseous effluents released from the unit or station during the previous calendar year. The report shall also include an assessment of the radiation doses from radioactive liquid and gaseous effluents to MEMBERS OF THE PUBLIC due to their activities inside the SITE BOUNDARY (USAR section 2.1) during the report period. All assumptions used in making these assessments (i.e., specific activity, exposure time and location) shall be included in these reports. The assessment of radiation doses shall be performed in accordance with the methodology and parameters of the ODCM.

The Annual Radioactive Effluent Release Report shall also include an assessment of radiation doses to the likely most-exposed MEMBER OF THE PUBLIC from reactor releases and other nearby uranium fuel cycle sources (including doses from primary effluent pathways and direct radiation) for the previous calendar year to show conformance with 40 CFR Part 190, Environmental Radiation Protection Standards for Nuclear Power Operation. Acceptable methods for calculating the dose contribution from liquid and gaseous effluents are given in NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants," Rev. 0, October 1978.

The Annual Radioactive Effluent Release Report shall include a list and description of unplanned releases from the site to UNRESTRICTED AREAS of radioactive materials in gaseous and liquid effluents made during the reporting period.

(continued)

TR 5.6.3 Annual Effluent Release Report (continued)

The Annual Radioactive Effluent Release Report shall include any changes made during the reporting period to the PROCESS CONTROL PROGRAM (PCP) and to the ODCM, as well as a listing of new locations for dose calculations and environmental monitoring identified by the land use census pursuant to Requirement 3.12.2.

TR 5.6.4 and TR 5.6.5 (Not Used)

TR 5.6.6 REPORTABLE EVENT Action

The following actions shall be taken for REPORTABLE EVENTS:

- a. The Commission shall be notified and a report submitted pursuant to the requirements of 10 CFR 50.73 and
- b. Each REPORTABLE EVENT shall be reviewed by the FRC and the results of this review shall be submitted to the NRB and the Plant Manager.

TR 5.6.7 (not used)

TR 5.6.8 Startup Report

TR 5.6.8.1 A summary report of plant startup and power escalation testing shall be submitted following (1) receipt of an Operating License, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the unit.

- TR 5.6.8.2 The startup report shall address each of the tests identified in the Safety Analysis Report (Section 14.2.12.2) and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.
- TR 5.6.8.3 Startup reports shall be submitted within (1) 90 days following completion of the startup test program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the startup report does not cover all three events (i.e., initial criticality, completion of startup test program, and resumption or commencement of commercial operation), supplementary reports shall be submitted at least every 3 months until all three events have been completed.
- TR 5.6.9 Special Reports
- Special Reports shall be submitted pursuant to 10 CFR 50.4.
- TR 5.6.9.1 Diesel Generator Failures
- All diesel generator failures, valid or non-valid, shall be reported to the Commission in a Special Report within 30 days. Reports of diesel generator failures shall include the information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977. If the number of failures in the last 100 valid tests, on a per nuclear unit basis, is greater than or equal to 7, the report shall be supplemented to include the additional information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977.
- TR 5.6.9.2 ECCS System Actuations
- In the event an ECCS system is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the Commission within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date. The current value of the usage factor for each affected safety injection nozzle shall be provided in this Special Report whenever its value exceeds 0.70.
- TR 5.6.9.3 Corbicula Reports
- Special reports in regard to Corbicula will be submitted to the NRC within 30 days of identification of infestation. In accordance with the settlement agreement dated October 10, 1984, these reports shall describe the level of infestation, affected systems and measures taken to prevent further infestation.

TR 5.7 (Not Used)

TR 5.8 Review and Audit

TR 5.8.1 Facility Review Committee (FRC)

TR 5.8.1.1 Function

The FRC shall function to advise the Plant Manager on all matters related to nuclear safety.

TR 5.8.1.2 Composition

The FRC shall consist of at least six but not more than eleven members and shall be composed of:

The Chairperson assigned by the plant manager. The Chairperson will be chosen from the personnel reporting directly to the Plant Manager.

The remainder of the members shall be from the personnel reporting directly to the plant manager and the supervisory staff. This composition will be representative of the various disciplines.

All members shall be qualified to the applicable portions of ANSI/ANS 3.1-1978, Section 4.4, prior to being approved by the Chairperson. This qualification will be maintained while assigned to FRC activities.

TR 5.8.1.3 Alternates

All alternate members shall be appointed in writing by the FRC Chairperson and shall be qualified to the applicable portions of ANSI/ANS 3.1-1978, Section 4.4, prior to being approved by the Chairperson. This qualification shall be maintained while assigned to FRC activities.

TR 5.8.1.4 Meeting Frequency

The FRC shall meet at least once per calendar month and as convened by the FRC Chairperson or designated alternate.

TR 5.8.1.5 Quorum

The Quorum of the FRC necessary for the performance of the FRC responsibility and authority provisions of these Technical Requirements shall consist of a majority of the members including the Chairperson or Alternate Chairperson, and no more than two alternate members.

TR 5.8.1.6 Responsibilities

The FRC shall be responsible for:

- a. Review of all plant general administrative procedures and changes thereto;
- b. Review of all proposed tests and experiments that affect nuclear safety;
- c. Review of all proposed changes to Appendix A Technical Specifications;
- d. Review of all proposed changes or modifications to structures, components, systems or equipment that affect nuclear safety;
- e. Investigation of all violations of the Technical Specifications, including the preparation and forwarding of reports covering evaluation and recommendations to prevent recurrence, to the Vice President - Operations RBS and the Nuclear Review Board;
- f. Review of all REPORTABLE EVENTS;
- g. Review of unit operations to detect potential hazards to nuclear safety; items that may be included in this review are NRC inspection reports that require written response, QA audits/surveillance findings of operating and maintenance activities, NRB audit results, and American Nuclear Insurer (ANI) inspection results;
- h. Performance of special reviews, investigations, or analyses and reports thereon as requested by the Plant Manager or the Nuclear Review Board;
- i. Review of initial start-up testing phase start-up procedures and revisions; and
- j. Review of all proposed changes to the Emergency Plan and implementation procedures with the exception of editorial changes.

The FRC shall:

- a. Recommend in writing to the plant manager approval or disapproval of items considered under Requirement 5.8.1.6.a. through d. prior to their implementation.
- b. Render determinations in writing with regard to whether or not each item considered under Requirement 5.8.1.6.a. through e. constitutes an unreviewed safety question.
- c. Provide written notification within 24 hours to the Vice President - Operations RBS and the Nuclear Review Board of disagreement between the FRC and the plant manager; however, the plant manager shall have responsibility for resolution of such disagreements pursuant to Technical Specification 5.1.1.

TR 5.8.1.7 Records

The FRC shall maintain written minutes of each FRC meeting that, at a minimum, document the results of all FRC activities performed under the responsibility provisions of these Technical Requirements. Copies shall be provided to the plant manager and the NRB.

TR 5.8.2 Technical Review and Control

TR 5.8.2.1 Each procedure and program required by Technical Specifications 5.4, 5.5, and other procedures that affect nuclear safety, and changes thereto, is prepared by a qualified individual/organization. Each such procedure, and changes thereto, shall be reviewed by an individual/group other than the individual/group that prepared the procedure, or changes thereto, but who may be from the same organization as the individual/group that prepared the procedure. Each such procedure and program, or changes thereto, shall be approved, prior to implementation, by the plant manager, or the Manager - Radiation Control, or the manager/department head responsible for the program or the activity described in the procedure.

TR 5.8.2.2 Individuals responsible for reviews performed in accordance with Section TR 5.8.2.1 shall be members of River Bend Station supervisory staff, and the reviews shall be performed in accordance with administrative procedures. Each such review shall include a determination of whether or not additional, cross-disciplinary review is necessary and a verification that the proposed actions do not constitute an unreviewed safety question. If deemed necessary, such review shall be performed by the appropriate designated review personnel.

TR 5.8.2.3 The station security program and implementing procedures shall be reviewed at least once per 12 months, and recommended changes approved in accordance with Requirement 5.8.2.1.

TR 5.8.2.4 The station emergency plan and implementing procedures and recommended changes shall be approved in accordance with Requirement 5.8.2.1.

TR 5.8.2.5 The station fire protection plan and implementing procedures shall be reviewed at least once per 12 months, and recommended changes approved in accordance with Requirement 5.8.2.1.

TR 5.8.2.6 The station Technical Requirements Manual and implementing procedures and recommended changes shall be approved in accordance with Requirement 5.8.2.1.

- TR 5.8.2.7 The station Technical Specification Bases and implementing procedures and recommended changes shall be approved in accordance with Requirement 5.8.2.1.
- TR 5.8.2.8 Records documenting each of the activities performed under Requirements TR 5.8.2.1 through TR 5.8.2.7 shall be maintained.

TR 5.8.3 Nuclear Review Board(NRB)

TR 5.8.3.1 Function

The NRB shall function to provide independent review and audit of designated activities in the areas of:

- a. Nuclear power plant operations,
- b. Nuclear engineering,
- c. Chemistry and radiochemistry,
- d. Metallurgy,
- e. Instrumentation and control,
- f. Radiological safety,
- g. Mechanical and electrical engineering,
- h. Quality assurance practices,
- i. Licensing and regulatory affairs,
- j. Training.

The NRB shall report to and advise the Vice President - Operations RBS on those areas of responsibility in Requirements 5.8.3.7 and 5.8.3.8.

TR 5.8.3.2 Composition

The NRB shall be composed of at least nine but not more than thirteen individuals who shall possess the necessary expertise to provide the independent review and audit functions identified in Requirement 5.8.3.1. All members shall be qualified to the applicable portions of ANSI/ANS 3.1-1978, Section 4.7, prior to being approved by the Chairperson. This qualification will be maintained while assigned to NRB activities. The Vice President-Operations RBS provides nominations for permanent NRB membership to the NRB Chairperson for review and approval.

TR 5.8.3.3 Alternates

All alternate members shall be appointed in writing by the NRB Chairperson and be qualified to the applicable portions of ANSI/ANS 3.1-1978, Section 4.7, prior to being approved by the Chairperson. This qualifications will be maintained while assigned to NRB activities.

TR 5.8.3.4 Consultants

Consultants shall be utilized as determined by the NRB Chairperson to provide expert advice to the NRB.

TR 5.8.3.5 Meeting Frequency

The NRB shall meet at least once per 6 months.

TR 5.8.3.6 Quorum

The Quorum of the NRB necessary for the performance of the review and audit functions of these technical Requirements shall consist of a majority of the members including the Chairperson or Vice Chairperson, and no more than two alternate members. No more than a minority of the quorum shall have line responsibility for the operation of the unit.

TR 5.8.3.7 Review

The NRB shall be responsible for the review of:

- a. The safety evaluations for (1) changes to procedures, equipment, or systems; and (2) tests or experiments completed under the provision of 10 CFR 50.59 to verify that such actions did not constitute an unreviewed safety question;
- b. Proposed changes to procedures, equipment, or systems which involve an unreviewed safety question as defined in 10 CFR 50.59;
- c. Proposed tests or experiments which involve an unreviewed safety question as defined in 10 CFR 50.59;
- d. Proposed changes to Technical Specifications or the Operating License;
- e. Violations of codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures or instructions having nuclear safety significance;
- f. Significant operating abnormalities or deviations from normal and expected performance of unit equipment that affect nuclear safety;
- g. All REPORTABLE EVENTS;
- h. All recognized indications of an unanticipated deficiency in some aspect of design or operation of structures, systems, or components that could affect nuclear safety; and
- i. Reports and meeting minutes of the FRC.

TR 5.8.3.8 Audits

Information relocated to the Operations Quality Assurance Manual.

TR 5.8.3.9 Records

Records of NRB activities shall be prepared, approved, and distributed as indicated below:

- a. Minutes of each NRB meeting shall be prepared, approved, and forwarded to the Vice President - Operations RBS within 14 days following each meeting.
- b. Reports of reviews encompassed by Requirement 5.8.3.7 shall be prepared, approved, and forwarded to the the Vice President - Operations RBS within 14 days following completion of the review.
- c. Information relocated to the Operations Quality Assurance Manual.

TR 5.9 Record Retention

In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

TR 5.9.1 The following records shall be retained for at least 5 years:

- a. Records and logs of unit operation covering time interval at each power level.
- b. Records and logs of principal maintenance activities, inspections, repair, and replacement of principal items of equipment related to nuclear safety.
- c. All REPORTABLE EVENTS
- d. Records of surveillance activities, inspections, and calibrations required by the Technical Specifications.
- e. Records of changes made to the procedures required by Technical Specification 5.4.1 or Requirement 5.4.1.
- f. Records of radioactive shipments.
- g. Records of sealed source and fission detector leak tests and results.
- h. Records of annual physical inventory of all sealed source material of record.
- i. Records of emergency drills and exercises.

TR 5.9.2 The following records shall be retained for the duration of the unit Operating License:

- a. Records and drawing changes reflecting unit design modifications made to systems and equipment described in the Final Safety Analysis Report.
- b. Records of new and irradiated fuel inventory, fuel transfers, and assembly burnup histories.
- c. Records of radiation exposure for all individuals entering radiation control areas.
- d. Records of gaseous and liquid radioactive material released to the environs.
- e. Records of transient or operational cycles for those unit components identified by the Technical Specification 5.5.5 program.
- f. Records of reactor tests and experiments.
- g. Records of training and qualification for current members of the unit staff.
- h. Records of inservice inspections performed pursuant to Technical Specifications and Technical Requirements.
- i. Records of quality assurance activities required by the Operational Quality Assurance Manual that are not listed in Requirement 5.9.1.
- j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59.
- k. Records of meetings of the FRC and the NRB.
- l. Records of the service lives of all snubbers, including the date at which the service life commences, and associated installation and maintenance records.
- m. Records of analysis required by the Radiological Environmental Monitoring Program that would permit evaluation of the accuracy of the analysis at a later date. This should include procedures effective at the specified times and QA records showing that these procedures were followed.

TR 5.10 Major Changes to Radioactive Liquid, Gaseous and Solid Waste Treatment Systems

Licensee-initiated major changes to the radioactive waste systems (liquid, gaseous and solid):

TR 5.10.1. Shall be reported to the Commission in the Annual Radioactive Effluent Release Report and approved pursuant to Specification 5.6.3. The discussion of each change shall contain:

- a. A summary of the evaluation that led to the determination that the change could be made in accordance with 10 CFR Part 50.59.
- b. Sufficiently detailed information to totally support the reason for the change without benefit of additional or supplemental information;
- c. A detailed description of the equipment, components and processes involved and the interfaces with other plant systems;
- d. An evaluation of the change, which shows (1) the predicted releases of radioactive materials in liquid and gaseous effluents and/or (2) quantity of solid waste, that differ from those previously predicted in the license application and amendments thereto;
- e. An evaluation of the change, which shows the expected maximum exposures, to a MEMBER OF THE PUBLIC in the UNRESTRICTED AREA and to the general population, that differ from those previously estimated in the license application and amendments thereto;
- f. A comparison of the predicted releases of radioactive materials, in liquid and gaseous effluents and in solid waste, to the actual releases for the period prior to when the changes are to be made;
- g. An estimate of the exposure to plant operating personnel as a result of the change; and
- h. Documentation of the fact that the change was reviewed and found acceptable pursuant to Requirement 5.8.2.

TR 5.10.2. Shall become effective upon review and acceptance pursuant to Requirement 5.8.2