

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

3.0.1 Compliance with the Limiting Conditions for Operation contained in the succeeding Specifications is required during the OPERATIONAL MODES or other conditions specified therein; except that upon failure to meet the Limiting Conditions for Operation, the associated ACTION requirements shall be met.

3.0.2 Noncompliance with a Specification shall exist when the requirements of the Limiting Condition for Operation and associated ACTION requirements are not met within the specified time intervals. If the Limiting Conditions for Operation is restored prior to expiration of the specified time intervals, completion of the ACTION requirements is not required.

3.0.3 When a Limiting Condition for Operation is not met, except as provided in the associated ACTION requirements, within one hour action shall be initiated to place the unit in a MODE in which the Specification does not apply by placing it, as applicable, in:

1. At least HOT STANDBY within the next 6 hours,
2. At least HOT SHUTDOWN within the following 6 hours, and
3. At least COLD SHUTDOWN within the subsequent 24 hours.

Where corrective measures are completed that permit operation under the ACTION requirements, the ACTION may be taken in accordance with the specified time limits as measured from the time of failure to meet the Limiting Condition for Operation. Exceptions to these requirements are stated in the individual Specifications.

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

- a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;
- b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or
- c. When an allowance is stated in the individual value, parameter, or other Specification.

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

3.0.5 When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this Specification. Unless both conditions (1) and (2) are satisfied, within 2 hours action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply by placing it as applicable in:

1. At least HOT STANDBY within the next 6 hours
2. At least HOT SHUTDOWN within the following 6 hours, and
3. At least COLD SHUTDOWN within the subsequent 24 hours.

This Specification is not applicable in MODES 5 or 6.

APPLICABILITY

LIMITING CONDITION FOR OPERATION (Continued)

3.0.6 Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.1 and 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

SURVEILLANCE REQUIREMENTS

4.0.1 Surveillance Requirements shall be met during the MODES or other specified conditions in the Applicability for individual Limiting Condition for Operation, unless otherwise stated in the individual Surveillance Requirement. Failure to meet a Surveillance Requirement, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the Limiting Condition for Operation. Failure to perform a Surveillance within the specified surveillance interval shall be failure to meet the Limiting Conditions for Operation except as provided in Specification 4.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

4.0.2 Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval.

4.0.3 If it is discovered that a Surveillance was not performed within its specified surveillance interval (including the allowed extension per Specification 4.0.2), then compliance with the requirement to declare the Limiting Condition for Operation not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified surveillance interval, whichever is greater. This delay period is permitted to allow performance of the Surveillance. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

If the Surveillance is not performed within the delay period, the Limiting Condition for Operation must immediately be declared not met, and the applicable ACTION(s) must be entered. When the Surveillance is performed within the delay period and the Surveillance is not met, the Limiting Condition for Operation must immediately be declared not met, and the applicable ACTION(s) must be entered.

4.0.4 Entry into a MODE or other specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 4.0.3. When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with LCO 3.0.4.

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

4.0.5 Surveillance Requirements for inservice inspection and testing of ASME Code Class 1, 2 and 3 components shall be as follows:

Inservice Inspection Program

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

APPLICABILITY

SURVEILLANCE REQUIREMENTS (Continued)

4.0.5 (Continued)

- a. Provisions that inservice testing of ASME Code Class 1, 2 and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50.55a;
- b. The provisions of SR 4.0.2 are applicable to the frequencies for performing inservice inspection activities;
- c. Inspection of each reactor coolant pump flywheel per the recommendation of Regulation Position c.4.b of Regulatory Guide 1.14, Revision 1, August 1975 or in lieu of Position c.4.b(1) and c.4.b(2), a qualified in-place ultrasonic examination over the volume from the inner bore of the flywheel to the circle one-half of the outer radius or a surface examination (magnetic particle and/or liquid penetrant) of exposed surfaces of the removed flywheels may be conducted at 20-year intervals (the provisions of SR 4.0.2 are not applicable); and
- d. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirement of any TS.

Inservice Testing Program

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

- a. Provisions that 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 50.55a;
- b. Testing frequencies specified in section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as follows:

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

- c. The provisions of SR 4.0.2 are applicable to the above required Frequencies for performing inservice testing activities;
- d. The provisions of SR 4.0.3 are applicable to inservice testing and activities; and
- e. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any TS.

POWER DISTRIBUTION LIMITS

ACTION: (Continued)

2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 2 hours and reduce the Power Range Neutron Flux-High Trip Setpoints to less than or equal to 55% of RATED THERMAL POWER within the next 4 hours.
 3. Identify and correct the cause of the out of limit condition prior to increasing THERMAL POWER; subsequent POWER OPERATION above 50% of RATED THERMAL POWER may proceed provided that the QUADRANT POWER TILT RATIO is verified within its limit at least once per hour for 12 hours or until verified at 95% or greater RATED THERMAL POWER.
- d. With the indicated QUADRANT POWER TILT RATIO not confirmed as required by Surveillance Requirement 4.2.4.2, reduce THERMAL POWER to less than 75 percent RATED THERMAL POWER within 6 hours.
 - e. With the QUADRANT POWER TILT RATIO not monitored as required by Surveillance Requirement 4.2.4.1, reduce THERMAL POWER to less than 50 percent of RATED THERMAL POWER within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.2.4.1 The QUADRANT POWER TILT RATIO shall be determined to be within the limit above 50% of RATED THERMAL POWER by:

- a. Calculating the ratio at least once per 7 days when the alarm is OPERABLE.
- b. Calculating the ratio at least once per 12 hours during steady state operation when the alarm is inoperable.

4.2.4.2 The QUADRANT POWER TILT RATIO shall be determined to be within the limit when above 75 percent of RATED THERMAL POWER with one Power Range channel inoperable by using the movable incore detectors to confirm that the normalized symmetric power distribution, obtained from 4 pairs of symmetric thimble locations or from performance of a full core map, is consistent with the indicated QUADRANT POWER TILT RATIO at least once per 12 hours.

TABLE 3.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
1. Manual Reactor Trip	2	1	2	1, 2, and *	1
2. Power Range, Neutron Flux	4	2	3	1, 2	2
3. Power Range, Neutron Flux High Positive Rate	4	2	3	1, 2	2
4. Power Range, Neutron Flux, High Negative Rate	4	2	3	1, 2	2
5. Intermediate Range, Neutron Flux	2	1	2	1, 2, and *	3
6. Source Range, Neutron Flux					
A. Startup	2	1	2	2 ^{##} , and *	4
B. Shutdown	2	0	1	3, 4 and 5	5
7. Overtemperature ΔT Four Loop Operation	4	2	3	1, 2	6
8. Overpower ΔT Four Loop Operation	4	2	3	1, 2	6
9. Pressurizer Pressure—Low	4	2	3	1, 2	6
10. Pressurizer Pressure—High	4	2	3	1, 2	6
11. Pressurizer Water Level—High	3	2	2	1, 2	6

TABLE 3. 3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
12. Loss of Flow - Single Loop (Above P-8)	3/loop	2/loop in any operating loop	2/loop in each operating loop	1	6
13. Loss of Flow - Two Loops (Above P-7 and below P-8)	3/loop	2/loop in two operating loops	2/loop in each operating loop	1	6
14. Main Steam Generator Water Level--Low-Low					
A. Steam Generator Water Level--Low-Low (Adverse)	3/Stm. Gen	2/Stm. Gen. in any operating Stm. Gen	2/Stm. Gen. in each Operating Stm. Gen.	1,2	9
B. Steam Generator Water Level--Low-Low (EAM)	3/Stm. Gen.	2/Stm. Gen.. in any operating Stm. Gen	2/Stm. Gen. in each operating Stm. Gen.	1,2	9
C. RCS Loop ΔT	4 (1/loop)	2	3	1,2	10
D. Containment Pressure (EAM)	4	2	3	1,2	11
15. Deleted					

TABLE 3.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
16. Undervoltage-Reactor Coolant Pumps	4-1/bus	2	3	1	6
17. Underfrequency-Reactor Coolant Pumps	4-1/bus	2	3	1	6
18. Turbine Trip	3	2	2	1	6
A. Low Fluid Oil Pressure					
B. Turbine Stop Valve Closure	4	4	4	1	6
19. Safety Injection Input from ESF	2	1	2	1, 2	12
20. Reactor Trip Breakers					
A. Startup and Power Operation	2	1	2	1, 2	12, 15
B. Shutdown	2	1	2	3*, 4* and 5*	16
21. Automatic Trip Logic					
A. Startup and Power Operation	2	1	2	1, 2	12
B. Shutdown	2	1	2	3*, 4* and 5*	16
22. Reactor Trip System Interlocks					
A. Intermediate Range Neutron Flux, P-6	2	1	2	2, and*	8a
B. Power Range Neutron Flux, P-7	4	2	3	1	8b

TABLE 3.3-1 (Continued)

TABLE NOTATION

* With the reactor trip system breakers in the closed position, the control rod drive system capable of rod withdrawal, and fuel in the reactor vessel.

Source Range outputs may be disabled above the P-6 (Block of Source Range Reactor Trip) setpoint.

ACTION STATEMENTS

- ACTION 1 - With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in HOT STANDBY within the next 6 hours and/or open the reactor trip breakers.
- ACTION 2 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:
- a. The inoperable channel is placed in the tripped condition within 6 hours.
 - b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels per Specification 4.3.1.1.1.
 - c. The QUADRANT POWER TILT RATIO is monitored in accordance with Technical Specification 3.2.4.

TABLE 3.3-3

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
1. SAFETY INJECTION, TURBINE TRIP AND FEEDWATER ISOLATION					
a. Manual Initiation	2	1	2	1, 2, 3, 4	20
b. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	15
c. Containment Pressure-High	3	2	2	1, 2, 3	17
d. Pressurizer Pressure-Low	3	2	2	1, 2, 3#	17
e. Deleted					

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
f. Steam Line Pressure- Low	3/steam line	2/steam line in any steam line	2/steam line	1, 2, 3#	17
2. CONTAINMENT SPRAY					
a. Manual	2	1**	2	1, 2, 3, 4	20
b. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	15
c. Containment Pressure-- High-High	4	2	3	1, 2, 3	18
3. CONTAINMENT ISOLATION					
a. Phase "A" Isolation					
1) Manual	2	1	2	1, 2, 3, 4	20
2) From Safety Injection Automatic Actuation Logic	2	1	2	1, 2, 3, 4	15

** Two switches must be operated simultaneously for actuation.

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
3. CONTAINMENT ISOLATION					
b. Phase "B" Isolation					
1) Manual	2	1**	2	1, 2, 3, 4	20
2) Automatic Actuation Logic	2	1	2	1, 2, 3, 4	15
3) Containment Pressure-High-High	4	2	3	1, 2, 3	18
c. Containment Ventilation Isolation					
1) Manual	2	1	2	1, 2, 3, 4	19
2) Automatic Isolation Logic	2	1	2	1, 2, 3, 4	15
3) Containment Purge Air Exhaust Monitor Radioactivity-High	2	1	1	1, 2, 3, 4	19

** Two switches must be operated simultaneously for actuation.

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
4. STEAM LINE ISOLATION					
a. Manual	1/steam line	1/steam line	1/operating steam line	1, 2, 3	25
b. Automatic Actuation Logic	2	1	2	1, 2, 3	23
c. Containment Pressure-- High-High	4	2	3	1, 2, 3	18
d. Steam Line Pressure- Low	3/steam line	2/steam line in any steam line	2/steam line	1,2,3 [#]	17
e. Negative Steam Line Pressure Rate-High	3/steam line	2/steam line in any steam lines	2/steam line	3 ^{###}	17

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
5. TURBINE TRIP & FEEDWATER ISOLATION					
a. Steam Generator Water Level—High-High	3/loop	2/loop in any operating loop	2/loop in each operating loop	1, 2, 3	17
b. Automatic Actuation Logic	2	1	2	1, 2, 3	23
6. AUXILIARY FEEDWATER					
a. Manual Initiation	2	1	2	1, 2, 3	24
b. Automatic Actuation Logic	2	1	2	1, 2, 3	23
c. Main Steam Generator Water Level--Low-Low					
i. Start Motor-Driven Pumps					
a. Steam Gen. Water Level--Low-Low (Adverse)	3/Stm. Gen.	2/Stm. Gen. in any operating Stm. Gen.	2/Stm. Gen. in each operating Stm. Gen.	1, 2, 3	36
b. Steam Gen. Water Level--Low-Low (EAM)	3/Stm. Gen.	2/Stm. Gen. in any operating Stm. Gen.	2/Stm. Gen. in each operating Stm. Gen.	1, 2, 3	36
c. RCS Loop ΔT	4(1/loop)	2	3	1, 2, 3	37

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
d. Containment Pressure (EAM)	4	2	3	1, 2, 3	38
ii. Start Turbine Driven Pump					36
a. Steam Gen. Water Level-- Low-Low (Adverse)	3/Stm. Gen.	2/Stm. Gen. in any 2 operating Stm. Gen.	2/Stm. Gen. in each operating Stm. Gen.	1, 2, 3	
b. Steam Gen. Water Level-- Low-Low (EAM)	3/Stm. Gen.	2/Stm. Gen. in any 2 operating Stm. Gen.	2/Stm. Gen. in each operating Stm. Gen.	1, 2, 3	36
c. RCS Loop ΔT	4(1/loop)	2	3	1, 2, 3	37
d. Containment Pressure (EAM)	4	2	3	1, 2, 3	38
d. S. I. Start Motor-Driven Pumps and Turbine Driven Pump	See 1 above (all S.I. initiating functions and requirements)				

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
e. Loss of Power Start					
1. Voltage Sensors	3/shutdown board**	2/shutdown board**	3/shutdown board**	1, 2, 3	35
2. Load Shed Timer	2/shutdown board**	1/shutdown board**	2/shutdown board**	1, 2, 3	35
f. Trip of Main Feedwater Pumps Start Motor-Driven Pumps and Turbine Driven Pump	1/pump	1/pump	1/pump	1, 2	20
g. Auxiliary Feedwater Suction Pressure-Low	3/pump	2/pump	3/pump	1, 2, 3	21
h. Auxiliary Feedwater Suction Transfer Time Delays					
1. Motor-Driven Pump	1/pump	1/pump	1/pump	1, 2, 3	21
2. Turbine-Driven Pump	2/pump	1/pump	2/pump	1, 2, 3	21

** Unit 2 Shutdown Boards Only

TABLE 3.3-3 (Continued)

TABLE NOTATION

- # Trip function may be bypassed in this MODE below P-11 (Pressurizer Pressure Block of Safety Injection) setpoint.
- ## Trip function automatically blocked above P-11 and may be blocked below P-11 when Safety Injection on Steam Line Pressure-Low is not blocked.
- ### When Associated Diesel Generator is required to be OPERABLE by LCO 3.8.1.2, "AC Sources-Shutdown."

ACTION STATEMENTS

- ACTION 15 - With the number of OPERABLE Channels one less than the Total Number of Channels, be in HOT STANDBY within 12 hours and in COLD SHUTDOWN within the following 30 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.1 provided the other channel is OPERABLE.
- ACTION 16 - Deleted.
- ACTION 17 - With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:
 - a. The inoperable channel is placed in the tripped condition within 6 hours.
 - b. The Minimum Channels OPERABLE requirements is met; however, the inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels per Specification 4.3.2.1.1.
- ACTION 18 - With the number of OPERABLE Channels one less than the Total Number of Channels, operation may proceed provided the inoperable channel is placed in the bypassed condition within 6 hours and the Minimum Channels OPERABLE requirement is met; one additional channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.1.
- ACTION 19 - With less than the Minimum Channels OPERABLE, operation may continue provided the containment purge supply and exhaust valves are maintained closed.
- ACTION 20 - With the number of OPERABLE Channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

RADIATION MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.1 The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits.

APPLICABILITY: As shown in Table 3.3-6.

ACTION:

- a. With a radiation monitoring channel alarm/trip setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.
- b. With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6.
- c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-3.

INSTRUMENTATION

MOVABLE INCORE DETECTORS

LIMITING CONDITION FOR OPERATION

3.3.3.2 The movable incore detection system shall be OPERABLE with:

- a. At least 75% of the detector thimbles,
- b. A minimum of 2 detector thimbles per core quadrant, and
- c. Sufficient movable detectors, drive, and readout equipment to map these thimbles.

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

- a. Recalibration of the excore neutron flux detection system,
- b. Monitoring the QUADRANT POWER TILT RATIO, or
- c. Measurement of $F_{\Delta H}^N$ and $F_Q(Z)$.

ACTION:

With the movable incore detection system inoperable, do not use the system for the above applicable monitoring or calibration functions. The provisions of Specification 3.0.3 are not applicable. |

SURVEILLANCE REQUIREMENTS

4.3.3.2 The movable incore detection system shall be demonstrated OPERABLE by normalizing each detector output when required for:

- a. Recalibration of the excore neutron flux detection system, or
- b. Monitoring the QUADRANT POWER TILT RATIO, or
- c. Measurement of $F_{\Delta H}^N$ and $F_Q(Z)$

INSTRUMENTATION

METEOROLOGICAL INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.4 The meteorological monitoring instrumentation channels shown in Table 3.3-8 shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

- a. With one or more required meteorological monitoring channels inoperable for more than 7 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.4 Each of the above meteorological monitoring instrumentation channels shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-5.

INSTRUMENTATION

REMOTE SHUTDOWN INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.5 The remote shutdown monitoring instrumentation channels shown in Table 3.3-9 shall be OPERABLE with readouts displayed external to the control room.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

With the number of OPERABLE remote shutdown monitoring channels less than required by Table 3.3-9, restore the inoperable channel(s) to OPERABLE status within 7 days, or be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.3.3.5 Each remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6.

TABLE 3.3-10 (Continued)

ACTION STATEMENTS

ACTION 1 - NOTE: Also refer to the applicable action requirements from Tables 3.3-1 and 3.3-3, and LCO 3.3.3.5 since they may contain more restrictive actions.

- a. With the number of channels one less than the minimum channels required, restore the inoperable channel to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.
- b. With the number of channels two less than the minimum channels required, restore at least one inoperable channel to OPERABLE status within 7 days or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

ACTION 2 - NOTE: Also refer to the applicable action requirements from Tables 3.3-1 since it may contain more restrictive actions.

- a. With the number of channels one less than the minimum channels required, restore the inoperable channel to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.
- b. With the number of channels two less than the minimum channels required, restore at least one inoperable channel to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.
- c. With the number of channels three less than the minimum channels required, restore one channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

ACTION 3 - NOTE: Also refer to the applicable action requirements from LCO 3.6.3 since it may contain more restrictive actions.

- ###
- a. With the accident monitoring indication for one of the penetration inboard or outboard valve(s) inoperable, restore the inoperable valve(s) accident indication to OPERABLE status within 30 days, or isolate each affected penetration within 30 days by use of at least one deactivated automatic valve secured in the isolated position, or isolate each

TABLE 3.3-10 (Continued)

ACTION STATEMENTS

(Continued)

affected penetration within 30 days by use of at least one closed manual valve or blind flange, or be in at least HOT STANDBY within the next 6 hours and HOT SHUTDOWN within the next 6 hours.

- ### b. With the accident monitoring indication for both an inboard and outboard valve(s) on the same penetration inoperable, restore at least the inboard or outboard inoperable valve(s) indication to OPERABLE status within 7 days, or isolate each affected penetration within 7 days by use of at least one deactivated automatic valve secured in the isolated position, or isolate each affected penetration within 7 days by use of at least one closed manual valve or blind flange, or be in at least HOT STANDBY within the next 6 hours and HOT SHUTDOWN within the next 6 hours.

On a penetration where accident indication is declared INOPERABLE on a valve but on the opposite side of the penetration an accident indication valve does not exist (such as with a closed system or a check valve), only ACTION 3(a) must be entered. However, valves FCV-63-158 & -172 are both inboard penetration valves, but if both valves have inoperable accident indication, ACTION 3(b) must be entered until at least one of the valve's accident indication is restored to OPERABLE status. Valves FCV-30-46 & VLV-30-571, FCV-30-47 & VLV-30-572, and FCV-30-48 & VLV-30-573 are all outboard penetration valves, but if both valves have inoperable accident indication, ACTION 3(b) must be entered until at least one of the valve's accident indication is restored to OPERABLE status.

TABLE 3.3-10 (Continued)

ACTION STATEMENTS
(Continued)

ACTION 4 - With the number of channels less than the minimum channels required, initiate an alternate method of monitoring containment area radiation within 72 hours and either restore the inoperable channel(s) to OPERABLE status within 30 days, or prepare and submit a special report to the Commission pursuant to Specification 6.9.2.1 within 14 days that provides actions taken, cause of the inoperability, and plans and schedule for restoring the channels to OPERABLE status.

ACTION 5 - NOTE: Also refer to the applicable action requirements from LCO 3.3.3.5 since it may contain more restrictive actions.

- a. With the number of channels on one or more steam generators less than the minimum channels required for either flow rate or valve position, restore the inoperable channel to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.
- b. With the number of channels on one or more steam generators less than the minimum channels required for flow rate and valve position, restore the inoperable channel(s) to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

INSTRUMENTATION

EXPLOSIVE GAS MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.10 The explosive gas monitoring instrumentation channels shown in Table 3.3-13 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.2.5 are not exceeded.

APPLICABILITY: As shown in Table 3.3-13

ACTION:

- a. With an explosive gas monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above Specification, declare the channel inoperable and take the ACTION shown in Table 3.3-13.
- b. With less than the minimum number of explosive gas monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-13. Restore the inoperable instrumentation to OPERABLE status within 30 days and, if unsuccessful, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2.1 to explain why this inoperability was not corrected in a timely manner.
- c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.10 Each explosive gas monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST at the frequencies shown in Table 4.3-9.

REACTOR COOLANT SYSTEM

RELIEF VALVES - OPERATING

LIMITING CONDITION FOR OPERATION

3.4.3.2 All power operated relief valves (PORVs) and their associated block valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

- a. With one or more PORV(s) inoperable, but capable of RCS pressure control, within 1 hour either restore the PORV(s) to OPERABLE status or close the associated block valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. With one PORV inoperable and incapable of RCS pressure control, within 1 hour either restore the PORV to OPERABLE status or close the associated block valve and remove power from the block valve; restore the PORV to OPERABLE status within the following 72 hours or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- c. With both PORVs inoperable and incapable of RCS pressure control, within 1 hour either restore each of the PORVs to OPERABLE status or close their associated block valves and remove power from the block valves and be in HOT STANDBY within the next 6 hours and HOT SHUTDOWN within the following 6 hours.
- d. With one or more block valve(s) inoperable, within 1 hour: (1) restore the block valve(s) to OPERABLE status, or close the block valve(s) and remove power from the block valve(s), or close the PORV(s) and remove power from its associated solenoid valve(s); and (2) apply the ACTION b. or c. above, as appropriate, for the isolated PORV(s).

SURVEILLANCE REQUIREMENTS

4.4.3.2.1 In addition to the requirements of Specification 4.0.5, each PORV shall be demonstrated OPERABLE at least once per 18 months by:

- a. DELETED
- b. Operating the valve through one complete cycle of full travel during Modes 3, 4, or 5 with a steam bubble in the pressurizer.

4.4.3.2.2 Each block valve shall be demonstrated OPERABLE at least once per 92 days by operating the valve through one complete cycle of full travel.

REACTOR COOLANT SYSTEM

3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE

LEAKAGE DETECTION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.4.6.1 The following Reactor Coolant System leakage detection instrumentation shall be OPERABLE:

- a. Two lower containment atmosphere radioactivity monitors (gaseous and particulate), and
- b. One containment pocket sump level monitor.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With both containment pocket sump monitors inoperable, operation may continue for up to 30 days provided SR 4.4.6.2.1 is performed once per 24 hours*; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With either or both the gaseous or particulate lower containment atmosphere radioactivity monitors inoperable, operation may continue for up to 30 days provided grab samples of the lower containment atmosphere are analyzed once per 24 hours or SR 4.4.6.2.1 is performed once per 24 hours*; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With both containment pocket sump monitors and both lower containment atmosphere radioactivity monitors inoperable, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.6.1 The leakage detection instrumentation shall be demonstrated OPERABLE by:

- a. Performance of the lower containment atmosphere gaseous and particulate monitor CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST at the frequencies specified in Table 4.3-3, and
- b. Performance of containment pocket sump level monitor CHANNEL CALIBRATION at least once per 18 months.

* Surveillance performance not required until 12 hours after establishment of steady state operation.

REACTOR COOLANT SYSTEM

3/4.4.8 SPECIFIC ACTIVITY

LIMITING CONDITION FOR OPERATION

3.4.8 The specific activity of the primary coolant shall be limited to:

- a. Less than or equal to 0.35 microcurie per gram DOSE EQUIVALENT I-131, and
- b. Less than or equal to $100/\bar{E}$ microcuries per gram.

APPLICABILITY: MODES 1, 2, 3, 4 and 5

ACTION:

MODES 1, 2 and 3*:

- a. With the specific activity of the primary coolant greater than 0.35 microcurie per gram DOSE EQUIVALENT I-131 for more than 48 hours during one continuous time interval or exceeding the limit line shown on Figure 3.4-1, be in at least HOT STANDBY with T_{avg} less than 500°F within 6 hours. LCO 3.0.4.c is applicable.
- b. With the specific activity of the primary coolant greater than $100/\bar{E}$ microcurie per gram, be in at least HOT STANDBY with T_{avg} less than 500°F within 6 hours.

MODES 1, 2, 3, 4 and 5:

- a. With the specific activity of the primary coolant greater than 0.35 microcurie per gram DOSE EQUIVALENT I-131 or greater than $100/\bar{E}$ microcuries per gram, perform the sampling and analysis requirements of item 4a of Table 4.4-4 until the specific activity of the primary coolant is restored to within its limits.

* With T_{avg} greater than or equal to 500°F.

REACTOR COOLANT SYSTEM

3/4.4.11 REACTOR COOLANT SYSTEM HEAD VENTS

LIMITING CONDITION FOR OPERATION

3.4.11 At least one Reactor Coolant System Head Vent (RCSHV) path shall be OPERABLE.*

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

With no RCSHV path OPERABLE*, restore at least one path to OPERABLE status within 30 days or be in HOT STANDBY within 6 hours and HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.11 Each RCSHV path shall be demonstrated OPERABLE at least once per 18 months by:

- a. Verifying that the upstream manual isolation valves are locked in the open position,
- b. Operating each remotely controlled valve through at least one cycle from the control room, and
- c. Verifying flow through each RCSHV path.

* Inoperable paths must be maintained closed with power removed from the valve actuators. If any RCSHV path is declared inoperable while in an applicable MODE, power shall be removed from the valve actuators within one hour.

REACTOR COOLANT SYSTEM

ACTION (Continued)

- e. With two required PORVs inoperable, or the Actions (a), (b), (c), or (d) not met, or the LTOP System inoperable for any reason other than (a), (b), (c), or (d), depressurize the RCS and establish RCS vent of ≥ 3.0 square inches within 12 hours.
- f. LCO 3.0.4.b is not applicable when entering MODE 4.

SURVEILLANCE REQUIREMENTS

- 4.4.12.1 Each PORV shall be demonstrated OPERABLE by:
 - a. Performance of a CHANNEL FUNCTIONAL TEST*, but excluding valve operation, at least once per 31 days;
 - b. Performance of a CHANNEL CALIBRATION on each required PORV actuation channel at least once per 18 months; and
 - c. Verifying the PORV block valve is open for each required PORV at least once per 72 hours.
- 4.4.12.2 Verify no safety injection pumps are capable of injecting into the RCS within 4 hours after entering MODE 4 from MODE 3 and prior to the temperature of one or more RCS cold legs decreasing below 325°F, and every 12 hours thereafter.
- 4.4.12.3 Verify a maximum of one charging pump is capable of injecting into the RCS within 4 hours after entering MODE 4 from MODE 3 and prior to the temperature of one or more RCS cold legs decreasing below 325°F, and every 12 hours thereafter.
- 4.4.12.4 Verify each accumulator is isolated at least once per 12 hours
- 4.4.12.5 Verify[#] required RCS vent ≥ 3.0 square inches open at least:
 - a. Once every 12 hours for unlocked open vent valve(s) and,
 - b. Once every 31 days for other vent path(s)

* Not required to be performed until 12 hours after decreasing RCS cold leg temperatures to \leq the LTOP arming temperature in the PTLR.

[#] Only required to be met when complying with LCO 3.4.12.b.

EMERGENCY CORE COOLING SYSTEMS

3/4.5.3 ECCS SUBSYSTEMS - T_{avg} LESS THAN 350°F

LIMITING CONDITION FOR OPERATION

3.5.3 As a minimum, one ECCS subsystem comprised of the following shall be OPERABLE:

- a. One OPERABLE centrifugal charging pump,
- b. One OPERABLE residual heat removal heat exchanger,
- c. One OPERABLE residual heat removal pump, and
- d. An OPERABLE flow path capable of taking suction from the refueling water storage tank upon being manually realigned and automatically transferring suction to the containment sump during the recirculation phase of operation.

APPLICABILITY: MODE 4.

ACTION:

- a. With no ECCS subsystem OPERABLE because of the inoperability of either the centrifugal charging pump or the flow path from the refueling water storage tank, restore at least one ECCS subsystem to OPERABLE status within 1 hour or be in COLD SHUTDOWN within the next 20 hours. LCO 3.0.4.b is not applicable.
- b. With no ECCS subsystem OPERABLE because of the inoperability of either the residual heat removal heat exchanger or residual heat removal pump, restore at least one ECCS subsystem to OPERABLE status or maintain the Reactor Coolant System T_{avg} less than 350°F by use of alternate heat removal methods.

CONTAINMENT SYSTEMS

CONTAINMENT AIR LOCKS

LIMITING CONDITION FOR OPERATION

3.6.1.3 Each containment air lock shall be OPERABLE* with both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With one containment air lock door inoperable:
 1. Maintain at least the OPERABLE air lock door closed and either restore the inoperable air lock door to OPERABLE status within 24 hours or lock the OPERABLE air lock door closed.
 2. Operation may then continue until performance of the next required overall air lock leakage test provided that the OPERABLE air lock door is verified to be locked closed at least once per 31 days.
 3. Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

- b. With the containment air lock inoperable, except as the result of a inoperable air lock door, maintain at least one air lock door closed; restore the inoperable air lock to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

*1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test.

2. Enter the ACTION of LCO 3.6.1.1, "Primary Containment" when air lock leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONTAINMENT SYSTEMS

CONTAINMENT VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.1.9 One pair (one purge supply line and one purge exhaust line) of containment purge system lines may be open; the containment purge supply and exhaust isolation valves in all other containment purge lines shall be closed. Operation with purge supply or exhaust isolation valves open for either purging or venting shall be limited to less than or equal to 1000 hours per 365 days. The 365 day cumulative time period will begin every January 1.

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

ACTION:

- a. With a purge supply or exhaust isolation valve open in excess of the above cumulative limit, or with more than one pair of containment purge system lines open, close the isolation valve(s) in the purge line(s) within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With a containment purge supply and/or exhaust isolation valve having a measured leakage rate in excess of 0.05 La, restore the inoperable valve to OPERABLE status or isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange within 24 hours. Verify** the affected penetration flow path is isolated once per 31 days for isolation devices outside containment and prior to entering Mode 4 from Mode 5 if not performed within the previous 92 days for isolation devices inside containment. Otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.9.1 The position of the containment purge supply and exhaust isolation valves shall be determined at least once per 31 days.

4.6.1.9.2 The cumulative time that the purge supply and exhaust isolation valves are open over a 365 day period shall be determined at least once per 7 days.

4.6.1.9.3 At least once per 3 months, each containment purge supply and exhaust isolation valve shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than or equal to 0.05 La.*

* Enter the ACTION of LCO 3.6.1.1, "Primary Containment" when purge valve leakage results in exceeding the overall containment leakage rate acceptance criteria.

** Isolation devices in high radiation areas may be verified by use of administrative means. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.

CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 Each containment isolation valve shall be OPERABLE.*

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With one or more penetration flow paths with one containment isolation valve inoperable; except for containment vacuum relief isolation valves(s), isolate each affected penetration within 4 hours by use of at least one closed deactivated automatic valve, closed manual valve, blind flange, or check valve## with flow through the valve secured; and, verify# the affected penetration flow path is isolated once per 31 days for isolation devices outside containment, and prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment.
- b. With one or more penetration flow paths with two containment isolation valves inoperable; except for containment vacuum relief isolation valves(s), isolate each affected penetration within 1 hour by use of at least one closed deactivated automatic valve, closed manual valve, or blind flange and verify# the affected penetration flow path is isolated once per 31 days.
- c. With one or more containment vacuum relief isolation valve(s) inoperable, the valve(s) must be returned to OPERABLE status within 72 hours.
- d. With any of the above ACTIONS not met, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.3.1 Deleted

-
- *1. Penetration flow path(s) may be unisolated intermittently under administrative controls.
 2. Enter the ACTION of LCO 3.6.1.1, "Primary Containment" when containment isolation valve leakage results in exceeding the overall containment leakage rate acceptance criteria.
 - #3. Isolation devices in high radiation areas may be verified by use of administrative means.
 - #4. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.
 - ##5. A check valve with flow through the valve secured is only applicable to penetration flow paths with two containment isolation valves.

3/4.7 PLANT SYSTEMS

3/4.7.1 TURBINE CYCLE

SAFETY VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.1 Main steam safety valves (MSSVs) shall be OPERABLE with lift settings as specified in Table 3.7-2.

APPLICABILITY: Modes 1, 2 and 3*.

ACTION:

- a. With one or more MSSVs inoperable, operation may proceed provided, that within 4 hours, either the inoperable valve is restored to OPERABLE status or the Power Range Neutron Flux High Setpoint trip is reduced per Table 3.7-1.
- b. With the requirements of Action a., not met or with one or more steam generators with less than two MSSVs OPERABLE be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN in the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.1 No additional Surveillance Requirements other than those required by Specification 4.0.5. Following testing, lift settings shall be within $\pm 1\%$.

*With the reactor trip system breakers in the closed position.

PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 Three auxiliary feedwater trains shall be OPERABLE.*

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

ACTION:

- a. With one AFW train inoperable in MODE 1, 2, or 3, restore the inoperable AFW train to OPERABLE status within 72 hours or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 12 hours.
- b. With two AFW trains inoperable in MODE 1, 2, or 3, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.
- c. With three AFW trains inoperable in MODE 1, 2, or 3, immediately initiate corrective action to restore at least one AFW train to OPERABLE status.**
- d. With the required AFW train inoperable in MODE 4, immediately initiate action to restore the required AFW train to OPERABLE status.
- e. LCO 3.0.4.b is not applicable.

SURVEILLANCE REQUIREMENTS

4.7.1.2.1 At least once per 31 days, verify each AFW manual, power operated, and automatic valve in each water flow path, and in both steam supply flow paths to the steam turbine driven pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.

* Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4.

** LCO 3.0.3 and all other LCO ACTIONS requiring MODE changes are suspended until one AFW train is restored to OPERABLE status.

PLANT SYSTEMS

MAIN STEAM LINE ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.5 Four main steam line isolation valves shall be OPERABLE.

APPLICABILITY: MODE 1, 2, and 3

ACTION:

MODE 1 - With one main steam line isolation valve inoperable, POWER OPERATION may continue provided the inoperable valve is restored to OPERABLE status within 4 hours;

Otherwise, be in MODE 2 within the next 6 hours.

MODES 2 - With one or more main steam line isolation valves inoperable,
and 3 subsequent operation in MODES 2 or 3 may proceed provided:

- a. The isolation valve is restored to OPERABLE status or closed within 4 hours;
- b. The inoperable isolation valve is verified closed once per 7 days;
- c. Separate entry into this action is allowed for each isolation valve.

Otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.5.1 Each main steam line isolation valve shall be demonstrated OPERABLE by verifying full closure within 5 seconds when tested pursuant to Specification 4.0.5.

4.7.1.5.2 At least once per 18 months, verify each main steam isolation valve closes on an actual or simulated automatic actuation signal.

PLANT SYSTEMS

MAIN FEEDWATER ISOLATION, REGULATING, AND BYPASS VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.6 Four main feedwater isolation valves (MFIVs), four main feedwater regulating valves (MFRVs), and four MFRV bypass valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3

ACTION:

- a. With one or more MFIVs inoperable, POWER OPERATION may continue provided the inoperable valve is returned to OPERABLE status or closed or isolated within 72 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. With one or more MFRVs inoperable, POWER OPERATION may continue provided the inoperable valve is returned to OPERABLE status or closed or isolated within 72 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- c. With one or more MFRV bypass valves inoperable, POWER OPERATION may continue provided the inoperable valve is returned to OPERABLE status or closed or isolated within 72 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- d. For each MFIV, MFRV, or MFRV bypass valve that has been closed or isolated to satisfy Action a., b., or c. above, verify that it is closed or isolated once per 7 days.
- e. With two valves in the same main feedwater flow path inoperable, isolate the affected flow path within 8 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- f. Separate entry into the above ACTIONS is allowed for each valve or flow path.

SURVEILLANCE REQUIREMENTS

4.7.1.6 In addition to the requirements of Specification 4.0.5, verify each MFIV, MFRV, and MFRV bypass valve closes on an actual or simulated automatic actuation signal at least once per 18 months.

PLANT SYSTEMS

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.7 Two independent control room emergency ventilation systems (CREVS) shall be OPERABLE.

APPLICABILITY: ALL MODES and during movement of irradiated fuel assemblies

ACTION:

MODES 1, 2, 3 and 4

- a. With one CREVS inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With both CREVS system inoperable due to actions taken as a result of a tornado warning, restore at least one train to operable status within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With both CREVS inoperable for other than Action b., be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

MODES 5, 6, and during movement of irradiated fuel assemblies

- a. With one CREVS inoperable, restore the inoperable system to OPERABLE status within 7 days or initiate and maintain operation of the operable CREVS in the recirculation mode
or
suspend movement of irradiated fuel assemblies.
- b. With both CREVS inoperable, suspend all operations involving movement of irradiated fuel assemblies.

SURVEILLANCE REQUIREMENTS

4.7.7 Each CREVS shall be demonstrated OPERABLE:

- a. DELETED
- b. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.
- c. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by:

PLANT SYSTEMS

3/4.7.10 SEALED SOURCE CONTAMINATION

LIMITING CONDITION FOR OPERATION

3.7.10 Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material, shall be free of greater than or equal to 0.005 microcuries of removable contamination.

APPLICABILITY: At all times.

ACTION:

- a. With a sealed source having removable contamination in excess of the above limits, immediately withdraw the sealed source from use and either:
 1. Decontaminate and repair the sealed source, or
 2. Dispose of the sealed source in accordance with Commission Regulations.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.10.1 Test Requirements - Each sealed source shall be tested for leakage and/or contamination by:

- a. The licensee, or
- b. Other persons specifically authorized by the Commission or an Agreement State.

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

4.7.10.2 Test Frequencies - Each category of sealed sources (excluding startup sources and fission detectors previously subjected to core flux) shall be tested at the frequency described below.

- a. Sources in use - At least once per six months for all sealed sources containing radioactive materials:
 1. With a half-life greater than 30 days (excluding Hydrogen 3), and
 2. In any form other than gas.

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

- c. With one offsite circuit and one diesel generator set of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter, and Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d. With two of the above required offsite A.C. circuits inoperable, demonstrate the OPERABILITY of 4 diesel generator sets by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the diesel generator sets are already operating; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours.
- e. With either diesel generator sets 1A-A and/or 2 A-A inoperable simultaneous with 1B-B and/or 2B-B, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore at least 1) 1A-A and 2A-A or 2) 1B-B and 2B-B to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- f. LCO 3.0.4.b is not applicable to diesel generators. |

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class E distribution system shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability.

REFUELING OPERATIONS

3/4.9.2 INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.9.2 As a minimum, two source range neutron flux monitors shall be OPERABLE and operating, each with continuous visual indication in the control room and one with audible indication in the containment and control room.

APPLICABILITY: MODE 6.

ACTION:

- a. With one of the above required monitors inoperable or not operating, immediately suspend all operations involving CORE ALTERATIONS and suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet LCO 3.9.1.
- b. With both of the above required monitors inoperable or not operating, determine the boron concentration of the reactor coolant system at least once per 12 hours.
- c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.2 Each source range neutron flux monitor shall be demonstrated OPERABLE by performance of:

- a. A CHANNEL CHECK at least once per 12 hours, and
- b. A CHANNEL FUNCTIONAL TEST at least once per 7 days.

REFUELING OPERATIONS

3/4.9.9 CONTAINMENT VENTILATION ISOLATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.9 The Containment Ventilation Isolation System shall be OPERABLE.

APPLICABILITY: During movement of irradiated fuel within the containment.

ACTION:

With the Containment Ventilation Isolation System inoperable, close each of the Ventilation penetrations providing direct access from the containment atmosphere to the outside atmosphere. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.9 The Containment Ventilation Isolation System shall be demonstrated OPERABLE within 100 hours prior to the start of and at least once per 7 days during movement of irradiated fuel within containment by verifying that Containment Ventilation isolation occurs on manual initiation and on a high radiation test signal from each of the containment radiation monitoring instrumentation channels.

REFUELING OPERATIONS

3/4.9.12 AUXILIARY BUILDING GAS TREATMENT SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.12 One auxiliary building gas treatment filter train shall be OPERABLE.

APPLICABILITY: Whenever irradiated fuel is in the storage pool.

ACTION:

- a. With no auxiliary building gas treatment filter train OPERABLE, suspend all operations involving movement of fuel within the spent fuel pit or crane operation with loads over the spent fuel pit until at least one auxiliary building gas treatment filter train is restored to OPERABLE status.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12 The above required auxiliary building gas treatment filter train shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 hours with the heaters on.
- b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by:
 1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978 (except for the provisions of ANSI N510 Sections 8 and 9), and the system flow rate is 9000 cfm \pm 10%.
 2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 2.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C (86° F) and a relative humidity of 70%.
 3. Verifying a system flow rate of 9000 cfm \pm 10% during system operation when tested in accordance with ANSI N510-1975.

RADIOACTIVE EFFLUENTS

LIQUID HOLDUP TANKS

LIMITING CONDITION FOR OPERATION

3.11.1.4 The quantity of radioactive material contained in each of the following tanks shall be limited by the following expression:

$$\sum_i \frac{\text{concentration of isotope } i}{\text{(effluent concentration limit of isotope } i)} \leq 6,700$$

excluding tritium and dissolved or entrained noble gases.

- a. Condensate Storage Tank
- b. Steam Generator Layup Tank
- c. Outside temporary tanks for radioactive liquid

APPLICABILITY: At all times.

ACTION:

- a. With the quantity of radioactive material in any of the above listed tanks exceeding the above limit, immediately suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limit.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.4 The quantity of radioactive material contained in each of the above listed tanks shall be determined to be within the above limit by analyzing a representative sample of the tank's contents at least once per 7 days when radioactive materials are being added to the tank.

RADIOACTIVE EFFLUENTS

EXPLOSIVE GAS MIXTURE

LIMITING CONDITION FOR OPERATION

3.11.2.5 The concentration of oxygen in the waste gas holdup system shall be limited to less than or equal to 2% by volume whenever the hydrogen concentration exceeds 4% by volume.

APPLICABILITY: At all times.

ACTION:

- a. With the concentration of oxygen in a waste gas holdup tank greater than 2% by volume but less than or equal to 4% by volume, reduce the oxygen concentration to the above limits within 48 hours.
- b. With the concentration of oxygen in a waste gas holdup tank greater than 4% by volume and the hydrogen concentration greater than 2% by volume, without delay suspend all additions of waste gases to the affected waste gas holdup tank and reduce the concentration of oxygen to less than or equal to 2% by volume without delay.
- c. The provisions of Specification 3.0.3 are not applicable. |

SURVEILLANCE REQUIREMENTS

4.11.2.5 The concentration of hydrogen and oxygen in the waste gas holdup system shall be determined to be within the above limits by monitoring the waste gas additions to the waste gas holdup system with the hydrogen and oxygen monitors required OPERABLE by Table 3.3-13 of Specification 3.3.3.10.

RADIOACTIVE EFFLUENTS

GAS DECAY TANKS

LIMITING CONDITION FOR OPERATION

3.11.2.6 The quantity of radioactivity contained in each gas decay tank shall be limited to less than or equal to 50,000 curies of noble gases (considered as Xe-133).

APPLICABILITY: At all times.

ACTION:

- a. With the quantity of radioactive material in any gas decay tank exceeding the above limit, without delay suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limit.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.6 The quantity of radioactive material contained in each gas decay tank shall be determined to be within the above limit at least once per 24 hours when radioactive materials are being added to the tank.