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FOL DPR-59

(3) Fire Protection

The licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility and as approved in the SER dated November 20, 1972; the SER Supplement No. 1 dated February 1, 1973; the SER Supplement No. 2 dated October 4, 1974; the SER dated August 1, 1979; the SER Supplement dated October 3, 1980; the SER Supplement dated February 13, 1981; the NRC Letter dated February 24, 1981; Technical Specification Amendments 34 (dated January 31, 1978), 80 (dated May 22, 1984), 134 (dated July 19, 1989), 135 (dated September 5, 1989), 142 (dated October 23, 1989), 164 (dated August 10, 1990), 176 (dated January 16, 1992), 177 (dated February 10, 1992), 186 (dated February 19, 1993), 190 (dated June 29, 1993), 191 (dated July 7, 1993), 206 (dated February 28, 1994) and 214 (dated June 27, 1994); and NRC Exemptions and associated safety evaluations dated April 26, 1983, July 1, 1983, January 11, 1985, April 30, 1986, September 15, 1986 and September 10, 1992 subject to the following provision:

The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

Primary Coolant Sources Outside Containment

A1

AMENDMENT 210

[5.5.2] (4) Systems Integrity

This program provides controls to minimize

The licensee shall implement a program to reduce leakage from the systems outside containment that would or could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. This program shall include the following:

M7

INSERT 3a-1

1. Preventive provisions establishing maintenance and periodic visual inspection requirements, and
2. Integrated Leak test requirements for the systems at a frequency not to exceed ~~operating~~ 24 month cycle intervals.

(5) Iodine Monitoring

The licensee shall implement a program which will ensure the capability to accurately determine the airborne iodine concentration in areas vital to the mitigation of or recovery from an accident. This program shall include the following:

1. Training of personnel,
2. Procedures for monitoring, and
3. Provisions for maintenance of sampling and analysis equipment.

LA1

AMENDMENT 57

CTS Amend 268

ELS

Add SR 3.0.2 and SR 3.0.3 applicability

1.0 USE AND APPLICATION (A1)

1.1 1.0 DEFINITIONS

The succeeding frequently used terms are explicitly defined so that a uniform interpretation of the specifications may be achieved. (A2)

A. Reportable Event - A reportable event shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50. (A3)

Add "NOTE" (A2)

B. Core Alteration - The act of moving any component in the region above the core support plate, below the upper grid and within the shroud. Normal control rod movement with the control rod drive hydraulic system is not defined as a core alteration. Normal movement of in-core instrumentation is not defined as a core alteration. (L1)

fuel, sources, or reactivity control

reactor vessel with the vessel head removed and fuel in the vessel.

provided there are no fuel assemblies in the associated core cell.

SRMs, LPRMs, IRMs, TIPs, or Special movable detectors (including undervessel replacement)

1

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

1.0 (cont'd)

B. Cold Condition - Reactor coolant temperature ≤212°F.

C. Hot Standby Condition - Hot Standby condition means operation with coolant temperature ≥212°F, the Mode Switch in Start-up/Hot Standby and reactor pressure <1,040 psig.

E. Immediate - Immediate means that the required action will be initiated as soon as practicable considering the safe operation of the unit and the importance of the required action.

F. Instrumentation

1. Functional Test - A functional test is the manual operation or initiation of a system, subsystem, or component to verify that it functions within design tolerances (e.g., the manual start of a core spray pump to verify that it runs and that it pumps the required volume of water).

2. Instrument Channel Calibration - An instrument channel calibration means the adjustment of an instrument signal output so that it corresponds, within acceptable range, and accuracy, to a known value(s) of the parameter which the instrument monitors. Calibration shall encompass the entire instrument channel including actuation, alarm or trip.

3. Instrument Channel - An instrument channel means an arrangement of a sensor and auxiliary equipment required to generate and transmit to a trip system a single trip signal related to the plant parameter monitored by that instrument channel.

4. Instrument Check - An instrument check is a qualitative determination of acceptable operability by observation of instrument behavior during operation. This determination shall include, where possible, comparison of the instrument with other independent instruments measuring the same variable.

5. Instrument Channel Functional Test - An instrument channel functional test means the injection of a simulated signal into the instrument primary sensor where possible to verify the proper instrument channel response, alarm and/or initiating action.

6. Primary Containment Isolation Actuation Instrumentation Response Time for Main Steam Line Isolation is the time interval which begins when the monitored parameter exceeds the isolation actuation set point at the channel sensor and ends when the Main Steam Isolation Valve solenoids are de-energized (16A-K14, K18, K51, & K52 pilot solenoid relay contacts open). The response time may be measured in one continuous step or in overlapping segments, with verification that all components are tested.

7. 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.

8. Protective Action - An action initiated by the Protection System when limiting safety system setting is reached. A protective action can be at a channel or system level.

[1.1]

1.0 (cont'd)

9. Protective Function - A system protective action which results from the protective action of the channels monitoring a particular plant condition.

10. Reactor Protection System Response Time is the time interval which begins when the monitored parameter exceeds the reactor protection trip set point at the channel sensor and ends when the scram pilot valve solenoids are de-energized (105A-K14 skram contactors open). The response time may be measured in one continuous step or in overlapping segments, with verification that all components are tested.

11. Simulated Automatic Actuation - Simulated automatic actuation means applying a simulated signal to the sensor to actuate the circuit in question.

12. Trip System - A trip system means an arrangement of instrument channel trip signals and auxiliary equipment required to initiate action to accomplish a protective function. A trip system may require one or more instrument channel trip signals related to one or more plant parameters in order to initiate trip system action. Initiation of protective action may require the tripping of a single trip system or the coincident of two trip systems.

any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.

13. Sensor - A sensor is that part of a channel used to detect variations in a monitored variable and to provide a suitable signal to logic.

G. Limiting Conditions for Operation (LCO)

The limiting conditions for operation specify the minimum acceptable levels of system performance necessary to assure safe startup and operation of the facility. When these conditions are met, the plant can be operated safely and abnormal situations can be safely controlled.

H. Limiting Safety System Setting (LSSS)

The limiting safety system settings are settings on instrumentation which initiate the automatic protective action at a level such that the safety limits will not be exceeded. The region between the safety limit and these settings represent margin with normal operation lying below these settings. The margin has been established so that with proper operation of the instrumentation safety limits will never be exceeded.

[Table 1.1-1]

I. Modes of Operation (Operational Mode)

Mode - The reactor mode is established by the Mode Selector Switch. The modes include shutdown, refuel, startup/hot standby, and run which are defined as follows:

position, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.

TSTF-332

Table 1.1-1 (A24)

1.0 (cont'd)

JAFNPP

Chapter 1.0 (A1)

Reactor Mode Switch Position

add Shutdown (M1)

MODE 5 Refueling (b) (M1)

1. Refuel Mode - The reactor is in the refuel mode when the Mode Switch is in the Refuel mode position. When the Mode Switch is in the Refuel position, the refueling interlocks are in service. (A25) [Reactor Mode Switch Position]

MODE 1 Power Operation (M4)

2. Run Mode - In this mode the reactor system pressure is at or above 850 psig and the Reactor Protection System is energized with APRM protection (excluding the 15 percent high flux trip) and the RBM interlocks in service. (A26)

MODE 3 MODE 4 (A24)

3. Shutdown Mode - The reactor is in the shutdown mode when the Reactor Mode Switch is in the Shutdown Mode position. [Reactor Mode switch Position]

MODE 3 Hot Shutdown (a) (M1)

a. Hot shutdown means conditions as above with reactor coolant temperature >212°F.

MODE 4 Cold Shutdown (a) (M1)

b. Cold shutdown means conditions as above with reactor coolant temperature ≤212°F. (L5) and the reactor vessel vented

MODE 2 Startup

4. Startup/Hot Standby - In this mode the low pressure main steam line isolation valve closure trip is bypassed, the Reactor Protection System is energized with APRM (15 percent) and IRM neutron monitoring (A27)

(a) All reactor vessel head closure bolts fully tensioned, (M1)

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

system trips and control rod withdrawal interlocks in service (A27)

J. Operable - OPERABILITY - A system, subsystem, division, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal (A11) and emergency (or) (and) electrical power sources, cooling of (and) seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, (division) train, component or device to perform its function(s) are also capable of performing their related support function(s). (Specified safety)

R. Operating - Operating means that a system or component is performing its intended functions in its required manner (A20)

L. Operating Cycle - Interval between the end of one refueling outage and the end of the subsequent refueling outage. (A21)

M. Primary Containment Integrity - (A22)

Primary containment integrity means that the drywell and pressure suppression chamber are intact and all of the following conditions are satisfied:

See ITS: 3.6.1.1, 3.6.1.2, 3.6.1.3

1. All manual containment isolation valves on lines connected to the Reactor Coolant System or containment which are not required to be open during plant accident conditions are closed. These valves may be

See ITS: 3.6.1.3

See ITS 1.0

JAFnPP

1.0 (cont'd)

A1

1. Refuel Mode - The reactor is in the refuel mode when the Mode Switch is in the Refuel Mode position. When the Mode Switch is in the Refuel position, the refueling interlocks are in service.

2. Run Mode - In this mode the reactor system pressure is at or above 850 psig and the Reactor Protection System is energized with APRM protection (excluding the 15 percent high flux trip) and the IRM interlocks in service.

3. Shutdown Mode - The reactor is in the shutdown mode when the Reactor Mode Switch is in the Shutdown Mode position.

   a. Hot shutdown means conditions as above with reactor coolant temperature >212°F.

   b. Cold shutdown means conditions as above with reactor coolant temperature ≤212°F. and the reactor vessel vented.

4. Startup/Hot Standby - In this mode the low pressure main steam line isolation valve closure trip is bypassed, the Reactor Protection System is energized with APRM (15 percent) and IRM neutron monitoring system trips and control rod withdrawal interlocks in service.

J. Operable - A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal and emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).

K. Operating - Operating means that a system or component is performing its intended functions in its required manner.

L. Operating Cycle - Interval between the end of one refueling outage and the end of the subsequent refueling outage.

LCO 3.6.1.1

M. Primary Containment Integrity (OPERABLE)
Primary containment integrity means that the drywell and pressure suppression chamber are intact and all of the following conditions are satisfied:

LA1

1. All manual containment isolation valves on lines connected to the Reactor Coolant System or containment which are not required to be open during plant accident conditions are closed. These valves may be

See ITS 3.6.1.3

RAI 3.6.1.1-1

Amendment No. 95, 122, 134

4

Specification 3.6.1.3 (A1)

1.0 (cont'd)

See ITS: 1.0

1. Refuel Mode - The reactor is in the refuel mode when the Mode Switch is in the Refuel Mode position. When the Mode Switch is in the Refuel position, the refueling interlocks are in service.

2. Run Mode - In this mode the reactor system pressure is at or above 850 psig and the Reactor Protection System is energized with APRM protection (excluding the 15 percent high flux trip) and the IRM interlocks in service.

3. Shutdown Mode - The reactor is in the shutdown mode when the Reactor Mode Switch is in the Shutdown Mode position.

   a. Hot shutdown means conditions as above with reactor coolant temperature >212°F.

   b. Cold shutdown means conditions as above with reactor coolant temperature ≤212°F. and the reactor vessel vented.

4. Startup/Hot Standby - In this mode the low pressure main steam line isolation valve closure trip is bypassed, the Reactor Protection System is energized with APRM (15 percent) and IRM neutron monitoring system trips and control rod withdrawal interlocks in service.

J. Operable - A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal and emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).

K. Operating - Operating means that a system or component is performing its intended functions in its required manner.

L. Operating Cycle - Interval between the end of one refueling outage and the end of the subsequent refueling outage.

3.6.1.3

M. Primary Containment (Integrity) - Primary containment integrity means that the drywell and pressure suppression chamber are intact and all of the following conditions are satisfied:

PCIVs A11

See ITS: 3.6.1.1

1. All manual containment isolation valves on lines connected to the Reactor Coolant System or containment which are not required to be open during plant accident conditions are closed. These valves may be

M4 — SR 3.6.1.3.2, SR 3.6.1.3.3

Note 1 to ACTIONS
Note 2 to SR 3.6.1.3.2
Note 2 to SR 3.6.1.3.3

add Surveillance Frequency

M4

total reactor core heat transfer rate to the reactor coolant of 2536 MWt

A12

JAFNPP

A1

1.1 → 1.0 (cont'd)

See ITS: 3.6.1.3

opened to perform necessary operational activities.

A23

deficiency subject to regulatory review.

A22

See ITS: 3.6.1.2

2. At least one door in each airlock is closed and sealed.

3. Secondary Containment Integrity - Secondary containment integrity means that the reactor building is intact and the following conditions are met:

See ITS: 3.6.4.1

1. At least one door in each access opening is closed.

3. All automatic containment isolation valves are operable or de-activated in the isolated position.

See ITS: 3.6.1.3

4. All blind flanges and manways are closed.

See ITS: 3.6.1.1

2. The Standby Gas Treatment System is operable.

See ITS: 3.6.4.3

3. All automatic ventilation system isolation valves are operable or secured in the isolated position.

See ITS: 3.6.4.2

thermal

M. Rated Power - Rated power refers to operation at a reactor power of 2,536 MWt. This is also termed 100 percent power and is the maximum power level authorized by the operating license. Rated steam flow, rated coolant flow, rated nuclear system pressure, refer to the values of these parameters when the reactor is at rated power (Reference 1).

A12

T. Surveillance Frequency Notations / Intervals

The surveillance frequency notations / intervals used in these specifications are defined as follows:

Notations	Intervals	Frequency
D	Daily	At least once per 24 hours
W	Weekly	At least once per 7 days
M	Monthly	At least once per 31 days
Q	Quarterly or every 3 months	At least once per 92 days
SA	Semiannually or every 6 months	At least once per 184 days
A	Annually or Yearly	At least once per 366 days
18M	18 Months	At least once per 18 months (550 days)
R	Operating Cycle	At least once per 24 months (731 days)
S/U		Prior to each reactor startup
NA		Not applicable

A18

see ITS Section 5.5

Table 1.1-1 MODES 1 and 2

O. Reactor Power Operation - Reactor power operation is any operation with the Mode Switch in the Startup/Hot Standby or Run position with the reactor critical and above percent rated thermal power.

A14

A6

P. Reactor Vessel Pressure - Unless otherwise indicated, reactor vessel pressures listed in the Technical Specifications are those measured by the reactor vessel steam space sensor.

A21

Q. Refueling Outage - Refueling outage is the period of time between the shutdown of the unit prior to refueling and the startup of the Plant subsequent to that refueling.

R. Safety Limits - The safety limits are limits within which the reasonable maintenance of the fuel cladding integrity and the reactor coolant system integrity are assured. Violation of such a limit is cause for unit shutdown and review by the Nuclear Regulatory Commission before resumption of unit operation. Operation beyond such a limit may not in itself result in serious consequences but it indicates an operational

A23

1.0 (cont'd)

opened to perform necessary operational activities.

2. At least one door in each airlock is closed and sealed.

3. All automatic containment isolation valves are operable or de-activated in the isolated position.

4. All blind flanges and manways are closed.

N. Rated Power - Rated power refers to operation at a reactor power of 2,536 MWt. This is also termed 100 percent power and is the maximum power level authorized by the operating license. Rated steam flow, rated coolant flow, rated nuclear system pressure, refer to the values of these parameters when the reactor is at rated power (Reference 1).

O. Reactor Power Operation - Reactor power operation is any operation with the Mode Switch in the Startup/Hot Standby or Run position with the reactor critical and above 1 percent rated thermal power.

P. Reactor Vessel Pressure - Unless otherwise indicated, reactor vessel pressures listed in the Technical Specifications are those measured by the reactor vessel steam space sensor.

Q. Refueling Outage - Refueling outage is the period of time between the shutdown of the unit prior to refueling and the startup of the Plant subsequent to that refueling.

R. Safety Limits - The safety limits are limits within which the reasonable maintenance of the fuel cladding integrity and the reactor coolant system integrity are assured. Violation of such a limit is cause for unit shutdown and review by the Nuclear Regulatory Commission before resumption of unit operation. Operation beyond such a limit may not in itself result in serious consequences but it indicates an operational deficiency subject to regulatory review.

S. Secondary Containment Integrity - Secondary containment integrity means that the reactor building is intact and the following conditions are met:

1. At least one door in each access opening is closed.

2. The Standby Gas Treatment System is operable.

3. All automatic ventilation system isolation valves are operable or secured in the isolated position.

T. Surveillance Frequency Notations / Intervals

The surveillance frequency notations / intervals used in these specifications are defined as follows:

Notations	Intervals	Frequency
D	Daily	At least once per 24 hours
W	Weekly	At least once per 7 days
M	Monthly	At least once per 31 days
Q	Quarterly or every 3 months	At least once per 92 days
SA	Semiannually or every 6 months	At least once per 184 days
A	Annually or Yearly	At least once per 366 days
18M	18 Months	At least once per 18 months (550 days)
R	Operating Cycle	At least once per 24 months (731 days)
S/U		Prior to each reactor startup
NA		Not applicable

NOTE 1 to ACTIONS
Note 2 to SR 3.6.1.3.2
Note 2 to SR 3.6.1.3.3

1.0 (cont'd)

opened to perform necessary operational activities.

2. At least one door in each airlock is closed and sealed.

See ITS: 3.6.1.2

[LCO 3.6.1.3] 3. All automatic containment isolation valves are operable or de-activated in the isolated position. (LA5) (M4) add Surveillance Frequency

See ITS 3.6.1.1

4. All blind flanges and manways are closed.

[SR 3.6.1.3.2] [SR 3.6.1.3.3] (M4)

N. Rated Power - Rated power refers to operation at a reactor power of 2,536 MWt. This is also termed 100 percent power and is the maximum power level authorized by the operating license. Rated steam flow, rated coolant flow, rated nuclear system pressure, refer to the values of these parameters when the reactor is at rated power (Reference 1).

O. Reactor Power Operation - Reactor power operation is any operation with the Mode Switch in the Startup/Hot Standby or Run position with the reactor critical and above 1 percent rated thermal power.

P. Reactor Vessel Pressure - Unless otherwise indicated, reactor vessel pressures listed in the Technical Specifications are those measured by the reactor vessel steam space sensor.

Q. Refueling Outage - Refueling outage is the period of time between the shutdown of the unit prior to refueling and the startup of the Plant subsequent to that refueling.

R. Safety Limits - The safety limits are limits within which the reasonable maintenance of the fuel cladding integrity and the reactor coolant system integrity are assured. Violation of such a limit is cause for unit shutdown and review by the Nuclear Regulatory Commission before resumption of unit operation. Operation beyond such a limit may not in itself result in serious consequences but it indicates an operational

See ITS Chapter 1.0

See ITS: Chapter 1.0

deficiency subject to regulatory review.

S. Secondary Containment Integrity - Secondary containment integrity means that the reactor building is intact and the following conditions are met:

1. At least one door in each access opening is closed. (See ITS: 3.6.4.1)
2. The Standby Gas Treatment System is operable. (See ITS: 3.6.4.3)
3. All automatic ventilation system isolation valves are operable or secured in the isolated position. (See ITS: 3.6.4.2)

T. Surveillance Frequency Notations / Intervals

The surveillance frequency notations / intervals used in these specifications are defined as follows:

Notations	Intervals	Frequency
D	Daily	At least once per 24 hours
W	Weekly	At least once per 7 days
M	Monthly	At least once per 31 days
Q	Quarterly or every 3 months	At least once per 92 days
SA	Semiannually or every 6 months	At least once per 184 days
A	Annually or Yearly	At least once per 366 days
18M	18 Months	At least once per 18 months (550 days)
R	Operating Cycle	At least once per 24 months (731 days)
S/U		Prior to each reactor startup
NA		Not applicable

See ITS: Chapter 1.0 Section 5.5

Specification 3.6.4.1

JAFNPP

1.0 (cont'd)

opened to perform necessary operational activities. (See ITS: 3.6.1.3)

2. At least one door in each airlock is closed and sealed. (See ITS: 3.6.1.2)

3. All automatic containment isolation valves are operable or de-activated in the isolated position. (See ITS: 3.6.1.3)

4. All blind flanges and manways are closed. (See ITS: 3.6.1.1)

N. Rated Power - Rated power refers to operation at a reactor power of 2,536 MWt. This is also termed 100 percent power and is the maximum power level authorized by the operating license. Rated steam flow, rated coolant flow, rated nuclear system pressure, refer to the values of these parameters when the reactor is at rated power (Reference 1).

O. Reactor Power Operation - Reactor power operation is any operation with the Mode Switch in the Startup/Hot Standby or Run position with the reactor critical and above 1 percent rated thermal power.

P. Reactor Vessel Pressure - Unless otherwise indicated, reactor vessel pressures listed in the Technical Specifications are those measured by the reactor vessel steam space sensor.

Q. Refueling Outage - Refueling outage is the period of time between the shutdown of the unit prior to refueling and the startup of the Plant subsequent to that refueling.

R. Safety Limits - The safety limits are limits within which the reasonable maintenance of the fuel cladding integrity and the reactor coolant system integrity are assured. Violation of such a limit is cause for unit shutdown and review by the Nuclear Regulatory Commission before resumption of unit operation. Operation beyond such a limit may not in itself result in serious consequences but it indicates an operational

see ITS: Chapter 1.0

deficiency subject to regulatory review. (MB) (every 31 days)

S. Secondary Containment Integrity - Secondary\containment integrity means that the reactor building is intact and the following conditions are met:

1. At least one door in each access opening is closed; (SR 3.6.4.1.3) (see ITS: 3.6.4.3)

2. The Standby Gas Treatment System is operable.

3. All automatic ventilation system isolation valves are operable or secured in the isolated position.

T. Surveillance Frequency Notations / Intervals (See ITS: 3.6.4.2)

The surveillance frequency notations / intervals used in these specifications are defined as follows:

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D	Daily	At least once per 24 hours
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Q	Quarterly or every 3 months	At least once per 92 days
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A	Annually or Yearly	At least once per 366 days
18M	18 Months	At least once per 18 months (550 days)
R	Operating Cycle	At least once per 24 months (731 days)
S/U		Prior to each reactor startup
NA		Not applicable

see ITS: Section 5.5 Chapter 1.0

see ITS: Chapter 1.0

Specification 3.6.4.2

1.0 (cont'd)

opened to perform necessary operational activities.

2. At least one door in each airlock is closed and sealed.

3. All automatic containment isolation valves are operable or de-activated in the isolated position.

4. All blind flanges and manways are closed.

N. Rated Power - Rated power refers to operation at a reactor power of 2,636 MWt. This is also termed 100 percent power and is the maximum power level authorized by the operating license. Rated steam flow, rated coolant flow, rated nuclear system pressure, refer to the values of these parameters when the reactor is at rated power (Reference 1).

O. Reactor Power Operation - Reactor power operation is any operation with the Mode Switch in the Startup/Hot Standby or Run position with the reactor critical and above 1 percent rated thermal power.

P. Reactor Vessel Pressure - Unless otherwise indicated, reactor vessel pressures listed in the Technical Specifications are those measured by the reactor vessel steam space sensor.

Q. Refueling Outage - Refueling outage is the period of time between the shutdown of the unit prior to refueling and the startup of the Plant subsequent to that refueling.

R. Safety Limits - The safety limits are limits within which the reasonable maintenance of the fuel cladding integrity and the reactor coolant system integrity are assured. Violation of such a limit is cause for unit shutdown and review by the Nuclear Regulatory Commission before resumption of unit operation. Operation beyond such a limit may not in itself result in serious consequences but it indicates an operational deficiency subject to regulatory review.

S. Secondary Containment Integrity - Secondary containment integrity means that the reactor building is intact and the following conditions are met:

1. At least one door in each access opening is closed.

2. The Standby Gas Treatment System is operable.

3. All automatic ventilation system isolation valves are operable or secured in the isolated position.

T. Surveillance Frequency Notations / Intervals

The surveillance frequency notations / intervals used in these specifications are defined as follows:

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18M	18 Months	At least once per 18 months (550 days)
R	Operating Cycle	At least once per 24 months (731 days)
S/U		Prior to each reactor startup
NA		Not applicable

1.0 (cont'd)

opened to perform necessary operational activities.

2. At least one door in each airlock is closed and sealed.

3. All automatic containment isolation valves are operable or de-activated in the isolated position.

4. All blind flanges and manways are closed.

deficiency subject to regulatory review.

S. Secondary Containment Integrity - Secondary containment integrity means that the reactor building is intact and the following conditions are met:

1. At least one door in each access opening is closed.

[LCO 3.6.4.3] 2. The Standby Gas Treatment System is operable.

3. All automatic ventilation system isolation valves are operable or secured in the isolated position.

N. Rated Power - Rated power refers to operation at a reactor power of 2,536 MWt. This is also termed 100 percent power and is the maximum power level authorized by the operating license. Rated steam flow, rated coolant flow, rated nuclear system pressure, refer to the values of these parameters when the reactor is at rated power (Reference 1).

O. Reactor Power Operation - Reactor power operation is any operation with the Mode Switch in the Startup/Hot Standby or Run position with the reactor critical and above 1 percent rated thermal power.

P. Reactor Vessel Pressure - Unless otherwise indicated, reactor vessel pressures listed in the Technical Specifications are those measured by the reactor vessel steam space sensor.

Q. Refueling Outage - Refueling outage is the period of time between the shutdown of the unit prior to refueling and the startup of the Plant subsequent to that refueling.

R. Safety Limits - The safety limits are limits within which the reasonable maintenance of the fuel cladding integrity and the reactor coolant system integrity are assured. Violation of such a limit is cause for unit shutdown and review by the Nuclear Regulatory Commission before resumption of unit operation. Operation beyond such a limit may not in itself result in serious consequences but it indicates an operational

T. Surveillance Frequency Notations / Intervals

The surveillance frequency notations / intervals used in these specifications are defined as follows:

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D	Daily	At least once per 24 hours
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S/U		Prior to each reactor startup
NA		Not applicable

Section 5.5 (A1)

1.0 (cont'd)

see ITS: 3.6.1.3

opened to perform necessary operational activities.

see ITS: 3.6.1.2

2. At least one door in each airlock is closed and sealed.

see ITS: 3.6.1.3

3. All automatic containment isolation valves are operable or de-activated in the isolated position.

4. All blind flanges and manways are closed. see ITS: 3.6.1.1

N. Rated Power - Rated power refers to operation at a reactor power of 2,536 MWt. This is also termed 100 percent power and is the maximum power level authorized by the operating license. Rated steam flow, rated coolant flow, rated nuclear system pressure, refer to the values of these parameters when the reactor is at rated power (Reference 1).

O. Reactor Power Operation - Reactor power operation is any operation with the Mode Switch in the Startup/Hot Standby or Run position with the reactor critical and above 1 percent rated thermal power.

P. Reactor Vessel Pressure - Unless otherwise indicated, reactor vessel pressures listed in the Technical Specifications are those measured by the reactor vessel steam space sensor.

Q. Refueling Outage - Refueling outage is the period of time between the shutdown of the unit prior to refueling and the startup of the Plant subsequent to that refueling.

R. Safety Limits - The safety limits are limits within which the reasonable maintenance of the fuel cladding integrity and the reactor coolant system integrity are assured. Violation of such a limit is cause for unit shutdown and review by the Nuclear Regulatory Commission before resumption of unit operation. Operation beyond such a limit may not in itself result in serious consequences but it indicates an operational deficiency subject to regulatory review.

S. Secondary Containment Integrity - Secondary containment integrity means that the reactor building is intact and the following conditions are met:

see ITS: 3.6.4.1

1. At least one door in each access opening is closed.

2. The Standby Gas Treatment System is operable.

see ITS: 3.6.4.3

3. All automatic ventilation system isolation valves are operable or secured in the isolated position.

see ITS: 3.6.4.2

see ITS Chapter 1.0

T. Surveillance Frequency Notations / Intervals

The surveillance frequency notations / intervals used in these specifications are defined as follows:

[5.5.7.a]

Notations	Intervals	Frequency
D	Daily	At least once per 24 hours
W	Weekly	At least once per 7 days
M	Monthly	At least once per 31 days
Q	Quarterly or every 3 months	At least once per 92 days
SA	Semiannually or every 6 months	At least once per 184 days
A	Annually or Yearly	At least once per 366 days
18M	18 Months	At least once per 18 months (550 days)
R	Operating Cycle	At least once per 24 months (731 days)
S/U		Prior to each reactor startup
NA		Not applicable

(A9)

Biennially or every 2 years

Every 9 months At least once per 276 days

RAI 1.0-1 A1

JAFNPP

[1.1] 1.0 (cont'd)

U. Thermal Parameters A1

[1.1] 1 Minimum critical power ratio (MCPR) Minimum value (b) the ratio of that power in a fuel assembly which is calculated to cause some point in that fuel assembly to experience boiling transition to the actual assembly operating power for all fuel assemblies in the core

shall be the smallest CPR that exists in the core for each type of fuel. The CPR is A10

by application of the appropriate correlation(s)

2. Fraction of Limiting Power Density - The ratio of the linear heat generation rate (LHGR) existing at a given location to the design LHGR.

3 Maximum Fraction of Limiting Power Density - The Maximum Fraction of Limiting Power Density (MFLPD) is the highest value existing in the core of the Fraction of Limiting Power Density (FLPD).

4. Transition Boiling - Transition boiling means the boiling region between nucleate and film boiling. Transition boiling is the region in which both nucleate and film boiling occur intermittently with neither type being completely stable. A6

V. Electrically Disarmed Control Rod

To disarm a rod drive electrically, the four amphenol type plug connectors are removed from the drive insert and withdrawal solenoids rendering the rod incapable of withdrawal. This procedure is equivalent to valving out the drive and is preferred. Electrical disarming does not eliminate position indication. A6

W. ~~Deleted~~

X. Staggered Test Basis

A Staggered Test Basis shall consist of:

a. A test schedule for "n" systems, subsystems, trains or other designated components obtained by dividing the specified test interval into "n" equal subintervals.

b. The testing of one system, subsystem, train or other designated component at the beginning of each subinterval.

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. A13

Y. Rated Recirculation Flow

That drive flow which produces a core flow of 77.0 x 10^6 lb/hr. A6

Chapter 1.0 (A1)

1.1 (AD)

Z. Top of Active Fuel

The Top of Active Fuel, corresponding to the top of the enriched fuel column of each fuel bundle, is located 352.5 inches above vessel zero, which is the lowest point in the inside bottom of the reactor vessel. (See General Electric drawing No. 918D690BD.)

AA. Rod Density

Rod density is the number of control rod notches inserted expressed as a fraction of the total number of control rod notches. All rods fully inserted is a condition representing 100 percent rod density.

AB. Purge-Purging

Purge or Purging is the controlled process of discharging air or gas from a confinement in such a manner that replacement air or gas is required to purify the confinement.

AC. Venting

Venting is the controlled process of releasing air or gas from a confinement in such a manner that replacement air or gas is not provided or required.

(A6)

Core Operating Limits Report (COLR)

This report is the plant-specific document that provides the core operating limits for the current operating cycle. These cycle-specific operating limits shall be determined for each reload cycle in accordance with Specification 6.9.A.4. Plant operation within these operating limits is addressed in individual Technical Specifications. (5.6.5)

AE. References

1. General Electric Report NEDC-32016P-1, "Power Uprate Safety Analysis for James A. FitzPatrick Nuclear Power Plant," April 1993 (proprietary), Including Errata and Addenda Sheet No. 1, dated January 1994.

(A12)

(M3) (A5)

add 1.2 Logical Connectors
1.3 Completion Times
1.4 Frequency

(A15)

add the following definitions:
ACTIONS
AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)
LEAKAGE,
LINEAR HEAT GENERATION RATE (LHGR)
SHUTDOWN MARGIN (SDM)
THERMAL POWER
TURBINE BYPASS SYSTEM RESPONSE TIME

2.0 Safety Limits (SLs)
2.1 SLs
2.1.1 Reactor Core Safety Limits

A1

Chapter 2.0

A1

JAFNPP

2.1 FUEL CLADDING INTEGRITY

Applicability:

The Limiting Safety System Settings apply to trip settings of the instruments and devices which are provided to prevent the fuel cladding integrity Safety Limits from being exceeded.

Objective:

The objective of the Limiting Safety System Settings is to define the level of the process variables at which automatic protective action is initiated to prevent the fuel cladding integrity Safety Limits from being exceeded.

Specifications:

A. Trip Settings

The limiting safety system trip settings shall be as specified below:

1. Neutron Flux Trip Settings

   a. IRM - The IRM flux scram setting shall be set at ≤120/125 of full scale.

See ITS: 3.3.1.1

1.1 FUEL CLADDING INTEGRITY

Applicability:

The Safety Limits established to preserve the fuel cladding integrity apply to those variables which monitor the fuel thermal behavior.

Objective:

The objective of the Safety Limits is to establish limits below which the integrity of the fuel cladding is preserved.

Specifications:

≥ L4 ≥

A. Reactor Pressure ≥ 785 psig and Core Flow ≥ 10% of Rated

[2.1.1.2]

The existence of a minimum critical power ratio (MCPR) less than 1.09 shall constitute violation of the fuel cladding integrity safety limit, hereafter called the Safety Limit. An MCPR Safety Limit of 1.10 shall apply during single-loop operation.

RAI 2.0-1

Specification 3.3.1.1

A1

JAFNPP

1.1 FUEL CLADDING INTEGRITY

Applicability:

The Safety Limits established to preserve the fuel cladding integrity apply to those variables which monitor the fuel thermal behavior.

Objective:

The objective of the Safety Limits is to establish limits below which the integrity of the fuel cladding is preserved.

Specifications:

A. Reactor Pressure > 785 psig and Core Flow > 10% of Rated

The existence of a minimum critical power ratio (MCPR) less than 1.09 shall constitute violation of the fuel cladding integrity safety limit, hereafter called the Safety Limit. An MCPR Safety Limit of 1.10 shall apply during single-loop operation.

See ITS: chapter 2.0

2.1 FUEL CLADDING INTEGRITY

Applicability:

The Limiting Safety System Settings apply to trip settings of the instruments and devices which are provided to prevent the fuel cladding integrity Safety Limits from being exceeded.

Objective:

The objective of the Limiting Safety System Settings is to define the level of the process variables at which automatic protective action is initiated to prevent the fuel cladding integrity Safety Limits from being exceeded.

Specifications: Table 3.3.1.1-1 Allowable Values

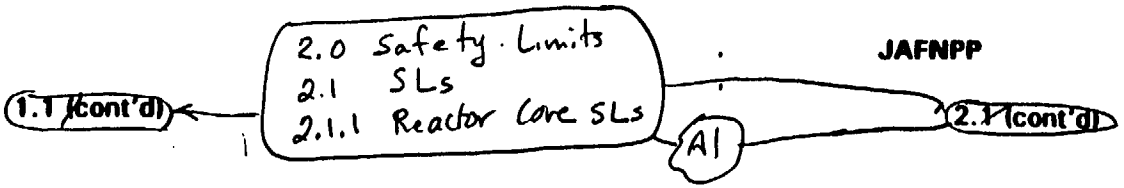
A19

A. Trip Setting Allowable Value

[Function] The limiting safety system trip settings shall be as specified below:

1. Neutron Flux Trip Settings

[Ira] a. IRM - The IRM flux scram setting shall be set at ≤ 120/125 of full scale.



A1

B. **Core Thermal Power Limit (Reactor Pressure ≤ 785 psig)**

2.1.1.1

When the reactor pressure is ≤ 785 psig or core flow is less than ~~or equal to~~ 10% of rated, the core thermal power shall not exceed 25 percent of rated thermal power.

L4

C. **Power Transient**

To ensure that the Safety Limit established in Specification 1.1.A and 1.1.B is not exceeded, each required scram shall be initiated by its expected scram signal. The Safety Limit shall be assumed to be exceeded when scram is accomplished by a means other than the expected scram signal.

L1

b. **APRM Flux Scram Trip Setting (Refuel or Start & Hot Standby Mode)**

APRM - The APRM flux scram setting shall be ≤ 15 percent of rated neutron flux with the Reactor Mode Switch in Startup/Hot Standby or Refuel.

c. **APRM Flux Scram Trip Settings (Run Mode)**

See TRM 3.3.1.1

(1) Flow Referenced Neutron Flux Scram Trip Setting

When the Mode Switch is in the RUN position, the APRM flow referenced flux scram trip setting shall be less than or equal to the limit specified in Table 3.1-1. This setting shall be adjusted during single loop operation when required by Specification 3.5.J.

For no combination of recirculation flow rate and core thermal power shall the APRM flux scram trip setting be allowed to exceed 117% of rated thermal power.

Page 1 of 6

1.1 (cont'd)

See ITS: Chapter 2.0

B. Core Thermal Power Limit (Reactor Pressure ≤785 psig)

When the reactor pressure is ≤785 psig or core flow is less than or equal to 10% of rated, the core thermal power shall not exceed 25 percent of rated thermal power.

C. Power Transient

To ensure that the Safety Limit established in Specification 1.1.A and 1.1.B is not exceeded, each required scram shall be initiated by its expected scram signal. The Safety Limit shall be assumed to be exceeded when scram is accomplished by a means other than the expected scram signal.

2.1 (cont'd)

A1

Table 3.3.1.1-1 Allowable Value

AA9

Function

b. APRM Flux Scram Trip Setting (Refuel or Start & Hot Standby Mode)

[2.a] APRM - The APRM flux scram setting shall be ≤15 percent of rated neutron flux with the Reactor Mode Switch in Startup/Hot Standby or Refuel.

L4

Allowable Value

c. APRM Flux Scram Trip Setting (Run Mode)

[2.b] (1) Flow Referenced Neutron Flux Scram Trip Setting

When the Mode Switch is in the RUN position, the APRM flow referenced flux scram trip setting shall be less than or equal to the limit specified in Table 3.1-1. This setting shall be adjusted during single loop operation when required by Specification 3.6.J.

A18

For no combination of recirculation flow rate and core thermal power shall the APRM flux scram trip setting be allowed to exceed 117% of rated thermal power.

1.1 (cont'd)

2.1 (cont'd)

D. Reactor Water Level (Hot or Cold Shutdown Conditions)

[2.1.1.3] Whenever the reactor is in the shutdown condition with irradiated fuel in the reactor vessel, the water level shall not be less than that corresponding to 18 inches above the top of Active Fuel when it is seated in the core.

M1

greater than the top of active irradiated fuel

L2

LA2

(2) Fixed High Neutron Flux Scram Trip Setting

A1

When the Mode Switch is in the RUN position, the APRM fixed high flux scram trip setting shall be:

S ≤ 120% Power

See ITS: 3.3.1.1

d. APRM Rod Block Setting

The APRM Rod block trip setting shall be less than or equal to the limit specified in Table 3.2-3. This setting shall be adjusted during single loop operation when required by Specification 3.5.J.

See ITS! 3.3.2.1

JAFNPP

1.1 (cont'd)

D. Reactor Water Level (Hot or Cold Shutdown Conditions)

Whenever the reactor is in the shutdown condition with irradiated fuel in the reactor vessel, the water level shall not be less than that corresponding to 18 inches above the Top of Active Fuel when it is seated in the core.

See ITS: Chapter 2.0

2.1 (cont'd)

[Function]

[2.c]

(2) Fixed High Neutron Flux Scram Trip Setting

When the Mode Switch is in the RUN position, the APRM fixed high flux scram trip setting shall be:

S ≤ 120% Power

Table 3.3.1.1-1 Allowable Value

A19

A1

d. APRM Rod Block Setting

The APRM Rod block trip setting shall be less than or equal to the limit specified in Table 3.2-3. This setting shall be adjusted during single loop operation when required by Specification 3.5.J.

See ITS: 3.3.2.1

Specification 3.3.2.1

A1

1.1 (cont'd)

D. Reactor Water Level (Hot or Cold Shutdown Conditions)

Whenever the reactor is in the shutdown condition with irradiated fuel in the reactor vessel, the water level shall not be less than that corresponding to 18 inches above the Top of Active Fuel when it is seated in the core.

see ITS: Chapter 2.0

2.1 (cont'd)

(2) Fixed High Neutron Flux Scram Trip Setting

When the Mode Switch is in the RUN position, the APRM fixed high flux scram trip setting shall be:

S ≤ 120% Power

See ITS: 3.3.1.1

d. APRM Rod Block Setting

The APRM Rod block trip setting shall be less than or equal to the limit specified in Table 3.2-3. This setting shall be adjusted during single loop operation when required by Specification 3.5.J.

R1

Specification 3.3.1.1

JAFNPP

2.1 (cont'd)

Table 3.3.1.1-1 Allowable Value

A1

A1P

[Functions]

[4] 2. Reactor Water Low Level Scram Trip Setting

Reactor low water level scram setting shall be ≥ 177 in. above the top of the active fuel (TAF) at normal operating conditions.

LA1

[8] 3. Turbine Stop Valve Closure Scram Trip Setting

Turbine stop valve scram shall be ≤ 10 (15) percent valve closure from full open when the reactor is at or above 29% of rated power.

L14

E

[9] 4. Turbine Control Valve Fast Closure Scram Trip Setting

Turbine control valve fast closure scram control oil pressure shall be set at 800 ≤ P ≤ 850 psig.

L14

F

[5] 5. Main Steam Line Isolation Valve Closure Scram Trip Setting

Main steam line isolation valve closure scram shall be ≤ 15 percent valve closure from full open.

6. Main Steam Line Isolation Valve Closure on Low Pressure

When in the run mode main steam line low pressure initiation of main steam line isolation valve closure shall be ≥ 826 psig.

See ITS 3.3.6.1

LICENSE AMEND. 265

Specification 3.3.6.1 (A1)

2.1 (cont'd)

2. Reactor Water Low Level Scram Trip Setting

Reactor low water level scram setting shall be ≥177 in. above the top of the active fuel (TAF) at normal operating conditions.

3. Turbine Stop Valve Closure Scram Trip Setting

See ITS 3.3.1.1

Turbine stop valve scram shall be ≤10 percent valve closure from full open when the reactor is at or above 29% of rated power.

4. Turbine Control Valve Fast Closure Scram Trip Setting

Turbine control valve fast closure scram control oil pressure shall be set at 500 < P < 850 psig.

5. Main Steam Line Isolation Valve Closure Scram Trip Setting

Main steam line isolation valve closure scram shall be ≤15 percent valve closure from full open.

SRV Only

Table 3.3.6.1 Function 1.b (a)

Main Steam Line Isolation Valve Closure on Low Pressure

[Applicability]

When in the run mode, main steam line low pressure initiation of main steam line isolation valve closure shall be ≥825 psig.

[Table 3.3.6.1-1 Function 1.b Allowable Value]

AMD 257

2.0 Safety Limits (SL)
2.1 SLs

A1

JAFNPP

Chapter 2.0 A1

1.2 REACTOR COOLANT SYSTEM

APPLICABILITY:

Applies to limits on reactor coolant system pressure.

OBJECTIVE:

To establish a limit below which the integrity of the Reactor Coolant System is not threatened due to an overpressure condition.

SPECIFICATION:

1. The reactor vessel dome pressure shall not exceed 1,325 psig at any time when irradiated fuel is present in the reactor vessel

[2.1.2]

A3

2.2 REACTOR COOLANT SYSTEM

APPLICABILITY:

Applies to trip settings of the instruments and devices which are provided to prevent the reactor coolant system safety limits from being exceeded.

See ITS: 3.3.1.1 3.4.3

OBJECTIVE:

To define the level of the process variables at which automatic protective action is initiated to prevent the safety limits from being exceeded.

SPECIFICATION:

1. The Limiting Safety System setting shall be specified below:

See ITS: 3.3.1.1

   A. Reactor coolant high pressure scram shall be ≤1,080 psig.

See ITS: 3.4.3

   B. At least 9 of the 11 reactor coolant system safety/relief valves shall have a nominal setting of 1,145 psig with an allowable setpoint error of ±3 percent.

Specification 3.3.1.1 (A1)

See ITS 2.0

1.2 REACTOR COOLANT SYSTEM

APPLICABILITY:

Applies to limits on reactor coolant system pressure.

OBJECTIVE:

To establish a limit below which the integrity of the Reactor Coolant System is not threatened due to an overpressure condition.

SPECIFICATION:

1. The reactor vessel dome pressure shall not exceed 1,325 psig at any time when irradiated fuel is present in the reactor vessel.

Table 3.3.1.1-1 Allowable Value (Function 3) (A19)

(A1)

2.2 REACTOR COOLANT SYSTEM

APPLICABILITY:

Applies to trip settings of the instruments and devices which are provided to prevent the reactor coolant system safety limits from being exceeded.

OBJECTIVE:

To define the level of the process variables at which automatic protective action is initiated to prevent the safety limits from being exceeded.

SPECIFICATION:

(A19)

1. The Limiting Safety System setting shall be specified below:

   A. Reactor coolant high pressure scram shall be ≤1,080 psig.

   B. At least 9 of the 11 reactor coolant system safety/relief valves shall have a nominal setting of 1,145 psig with an allowable setpoint error of ±3 percent.

See ITS: 3.4.3

Specification 3.4.3

A1

1.2 REACTOR COOLANT SYSTEM

APPLICABILITY:

Applies to limits on reactor coolant system pressure.

OBJECTIVE:

To establish a limit below which the integrity of the Reactor Coolant System is not threatened due to an overpressure condition.

SPECIFICATION:

1. The reactor vessel dome pressure shall not exceed 1,325 psig at any time when irradiated fuel is present in the reactor vessel.

ITS: Chapter 2.0

2.2 REACTOR COOLANT SYSTEM

APPLICABILITY:

Applies to trip settings of the instruments and devices which are provided to prevent the reactor coolant system safety limits from being exceeded.

OBJECTIVE:

To define the level of the process variables at which automatic protective action is initiated to prevent the safety limits from being exceeded.

SPECIFICATION:

1. The Limiting Safety System setting shall be specified below:

   A. Reactor coolant high pressure scram shall be ≤1,080 psig.

See ITS: 3.3.1.1

B. At least 9 of the 11 reactor coolant system safety/relief valves shall have a nominal setting of 1,145 psig with an allowable setpoint error of ±3 percent.

SR 3.4.3.1

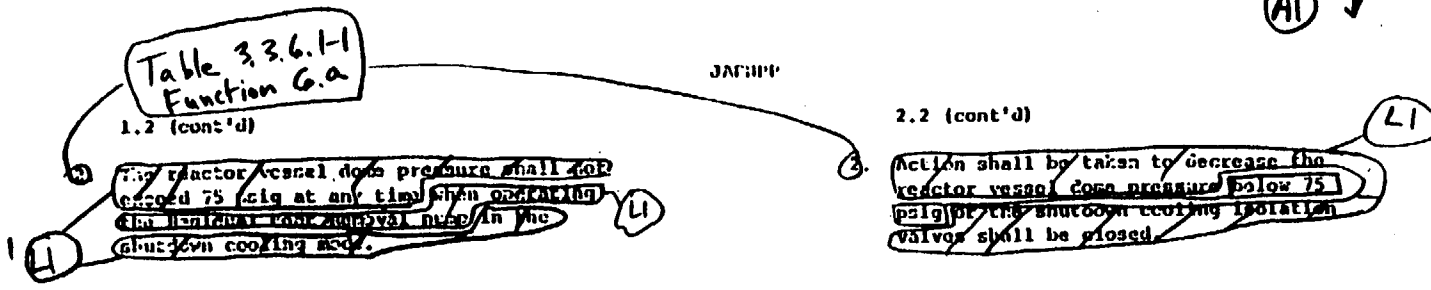
(A1)

1.2 (cont'd)	2.2 (cont'd)
2. The reactor vessel dome pressure shall not exceed 75 psig at any time when operating the Residual Heat Removal pump in the shutdown cooling mode.	2. Action shall be taken to decrease the reactor vessel dome pressure below 75 psig or the shutdown cooling isolation valves shall be closed.

(L5)

Specification 3.3.6.1

A1



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Amd 257

REVISION F

Chapter 3.0

3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

JAFNPP

3. Limiting Conditions for Operation

3.0 General

Applicability:

Applies to the general LCO requirements of Section 3.

Objective:

To specify the general requirements applicable to each Limiting Condition for Operation listed in Section 3

Specification:

A. Limiting Conditions for Operation and ACTION requirements shall be applicable during the OPERATIONAL CONDITIONS (modes) specified for each specification. conditions in the applicability, except as provided in LCO 3.0.2 and LCO 3.0.7 or other

B. Adherence to the requirements of the Limiting Condition for Operation and associated ACTION within the specified time interval shall constitute compliance with the specification. In the event the Limiting Condition for Operation is restored prior to expiration of the specified time interval, completion of the ACTION statement is not required unless otherwise stated except as provided in LCO 3.0.5 and LCO 3.0.6

C. In the event a Limiting Condition for Operation and/or associated ACTION requirements cannot be satisfied because of circumstances in excess of those addressed in the specification, the unit shall be placed in COLD SHUTDOWN within the following 24 hours unless corrective measures are completed that permit operation under the permissible ACTION or until the reactor is placed in an OPERATIONAL CONDITION (mode) in which the specification is not applicable. Exceptions to these requirements shall be stated in the individual specifications. or if directed by the associated ACTIONS

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

Initiate action within 1 hour, Mode 2 in 9 hours, Mode 3 in 13 hours

4 Surveillance Requirements

4.0 General

Applicability:

Applies to the general surveillance requirements of Section 4.

Objective:

To specify the general requirements applicable to each surveillance requirement in Section 4.

Specification:

A. Surveillance Requirements shall be applicable during the OPERATIONAL CONDITIONS (modes) specified for individual Limiting Condition for Operation unless otherwise stated in the individual Surveillance Requirements. met

B. 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.

INSERT 302-1

INSERT 302-2

INSERT 302-3

C. Performance of a Surveillance Requirement within the specified time interval shall constitute compliance with OPERABILITY requirements for a Limiting Condition for Operation and associated ACTION statements unless otherwise required by the specification. Failure to perform a Surveillance Requirement within the allowed surveillance interval, defined by Specification 4.0.B, shall constitute noncompliance with the OPERABILITY requirements for a Limiting Condition for Operation. The time limits of the ACTION requirements are applicable at the time it is identified

Chapter 3.0

A1

A8

~~3.0~~ Continued

~~D.~~ Entry into an OPERATIONAL CONDITION (mode) or other specified condition shall not be made when the conditions for the Limiting Condition for Operation are not met and the associated ACTION requires a shutdown if they are not met within a specified time interval. Entry into an OPERATIONAL CONDITION (mode) or specified condition may be made in accordance with ACTION requirements when conformance to them permits continued operation of the facility for an unlimited period of time. This provision shall not prevent passage through OPERATIONAL CONDITIONS (modes) required to comply with ACTION requirements or that are part of a shutdown of the plant. Exceptions to these requirements are stated in the individual specifications.

[LCO 3.0.4]

[SR 3.0.1]

[SR 3.0.4]

INSERT 304-2

~~E.~~ 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, the unit shall be placed in COLD SHUTDOWN within the following 24 hours. This specification is not applicable when in Cold Shutdown or Refuel Mode.

See ITS 3.8.1

~~F.~~ Equipment removed from service or declared inoperable to comply with required 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.B~~

[LCO 3.0.5]

INSERT 305-1

A9

~~4.0~~ Continued

[SR 3.0.3]

That a Surveillance Requirement has not been performed. The ACTION requirements may be delayed for up to 24 hours to permit the completion of the surveillance when the allowable outage time limits of the ACTION requirements are less than 24 hours. Surveillance requirements do not have to be performed on inoperable equipment.

L3

A7

A5

<ADD 2nd & 3rd Pg of SR 3.0.3>

D. Entry into an OPERATIONAL CONDITION (mode) shall not be made unless the Surveillance Requirement(s) associated with the Limiting Condition for Operation have been ~~performed~~ met within the applicable surveillance interval or as otherwise specified. This provision shall not prevent passage through or to Operational Modes as required to comply with ACTION requirements or that are part of a shutdown of the plant.

A12

INSERT SR 304-1

~~E.~~ Surveillance Requirements for inservice testing of components shall be applicable as follows:

1. Inservice testing of 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(f), except where specific written relief has been granted by the NRC pursuant to 10 CFR 50, Section 50.55a(f)(6)(i). The inservice testing and inspection program is based on an NRC approved edition of and addenda to, Section XI of the ASME Boiler and Pressure Vessel Code which is in effect 12 months prior to the beginning of the inspection interval.

See ITS 5.5.7

<ADD LCO 3.0.6>

A10

Page 3 of 5

262

Specification 3.8.1 (A1)

3.0 Continued

D. Entry into an OPERATIONAL CONDITION (mode) or other specified condition shall not be made when the conditions for the Limiting Condition for Operation are not met and the associated ACTION requires a shutdown if they are not met within a specified time interval. Entry into an OPERATIONAL CONDITION (mode) or specified condition may be made in accordance with ACTION requirements when conformance to them permits continued operation of the facility for an unlimited period of time. This provision shall not prevent passage through OPERATIONAL CONDITIONS (modes) required to comply with ACTION requirements or that are part of a shutdown of the plant. Exceptions to these requirements are stated in the individual specifications. (G)

E. 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, the unit shall be placed in COLD SHUTDOWN within the following 24 hours. This specification is not applicable when in Cold Shutdown or Refuel Mode. [RA A.2] [RA B.2] [RA C.1] [ACTION G] (36) (22) [Applicability]

F. Equipment removed from service or declared inoperable to comply with required 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.B. (M3)

in Mode 3 in 12 hours

See ITS: Chapter 3.0

4.0 Continued

See ITS: Chapter 3.0

that a Surveillance Requirement has not been performed. The ACTION requirements may be delayed for up to 24 hours to permit the completion of the surveillance when the allowable outage time limits of the ACTION requirements are less than 24 hours. Surveillance requirements do not have to be performed on inoperable equipment.

D. Entry into an OPERATIONAL CONDITION (mode) shall not be made unless the Surveillance Requirement(s) associated with the Limiting Condition for Operation have been performed within the applicable surveillance interval or as otherwise specified. This provision shall not prevent passage through or to Operational Modes as required to comply with ACTION requirements or that are part of a shutdown of the plant. (G)

E. Surveillance Requirements for inservice testing of components shall be applicable as follows:

1. Inservice testing of 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(f), except where specific written relief has been granted by the NRC pursuant to 10 CFR 50, Section 50.55a(f)(6)(i). The inservice testing and inspection program is based on an NRC approved edition of, and addenda to, Section XI of the ASME Boiler and Pressure Vessel Code which is in effect 12 months prior to the beginning of the inspection interval.

within 24 hours (A.2) 4 hours (B.2), 12 hours (C.1) (L7)

See ITS: Section 5.5

Page 11 of 11 Revising G (G)

Section 5.5 (A1)

See ITS Chapter 3.0

3.0 Continued

D. Entry into an OPERATIONAL CONDITION (mode) or other specified condition shall not be made when the conditions for the Limiting Condition for Operation are not met and the associated ACTION requires a shutdown if they are not met within a specified time interval. Entry into an OPERATIONAL CONDITION (mode) or specified condition may be made in accordance with ACTION requirements when conformance to them permits continued operation of the facility for an unlimited period of time. This provision shall not prevent passage through OPERATIONAL CONDITIONS (modes) required to comply with ACTION requirements or that are part of a shutdown of the plant. Exceptions to these requirements are stated in the individual specifications.

E. 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, the unit shall be placed in COLD SHUTDOWN within the following 24 hours. This specification is not applicable when in Cold Shutdown or Refuel Mode.

See ITS 3.8.1

F. Equipment removed from service or declared inoperable to comply with required 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.B.

See ITS Chapter 3.0

4.0 Continued

that a Surveillance Requirement has not been performed. The ACTION requirements may be delayed for up to 24 hours to permit the completion of the surveillance when the allowable outage time limits of the ACTION requirements are less than 24 hours. Surveillance requirements do not have to be performed on inoperable equipment.

D. Entry into an OPERATIONAL CONDITION (mode) shall not be made unless the Surveillance Requirement(s) associated with the Limiting Condition for Operation have been performed within the applicable surveillance interval or as otherwise specified. This provision shall not prevent passage through or to Operational Modes as required to comply with ACTION requirements or that are part of a shutdown of the plant.

E. Surveillance Requirements for inservice testing of components shall be applicable as follows: [5.5.7]

1. Inservice testing of 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(f), except where specific written relief has been granted by the NRC pursuant to 10 CFR 50, Section 50.55a(f)(6)(i). The inservice testing and inspection program is based on an NRC approved edition of, and addenda to, Section XI of the ASME Boiler and Pressure Vessel Code which is in effect 12 months prior to the beginning of the inspection interval.

(A7)

This program provides controls for inservice testing of certain ASME Code class 1, 2, and 3 pumps and valves. The program shall include the following: (A8)

CTS Amend 262

Chapter 3.0 (A1)

~~3.0~~ Continued

~~G.~~ Special Operations LCOs in Section 3.12 allow specified Technical Specification (TS) requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. Compliance with the Special Operations LCOs is optional. When a Special Operations LCO is desired to be met but is not met, the ACTIONS of the Special Operations LCO shall be met. When a Special Operations LCO is not desired to be met, entry into an OPERATIONAL CONDITION (mode) or other specified condition shall only be made in accordance with the other applicable specifications.

[LCO 3.0.7]

4.0 Continued

2. Surveillance intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice testing activities required by the Code and applicable Addenda shall be applicable as defined in Technical Specification 1.0.T.

3. The provisions of Specification 4.0.B are applicable to the frequencies specified in Technical Specification 1.0.T for performing inservice testing activities.

4. Performance of the above inservice testing activities shall be in addition to other specified Surveillance Requirements.

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

See ITS 5.5.7

Section 5.5 (A1)

4.0 Continued

Testing Frequencies

are as follows:

[5.5.7.a] 2. Surveillance Intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice testing activities required by the Code and applicable Addenda shall be applicable as defined in Technical Specification 1.0.T (A9)

above required

SR3.0.2

[5.5.7.b] 3. The provisions of Specification 4.0.B are applicable to the frequencies specified in Technical Specification 1.0.T for performing inservice testing activities.

[5.5.7.c] 4. Performance of the above inservice testing activities shall be in addition to other specified Surveillance Requirements. (A7)

[5.5.7.d] 5. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical Specification.

The provisions of SR 3.0.3 are applicable to inservice testing activities. (L4)

CTS Amend 262

Chapter 1.0

A1

3.1 LIMITING CONDITIONS FOR OPERATION

3.1 REACTOR PROTECTION SYSTEM

Applicability:

Applies to the instrumentation and associated devices which initiate the reactor scram.

Objective:

To assure the operability of the Reactor Protection System.

Specification:

A. The setpoints and minimum number of instrument channels per trip system that must be operable for each position of the reactor mode switch, shall be as shown in Table 3.1-1.

4.1 SURVEILLANCE REQUIREMENTS

4.1 REACTOR PROTECTION SYSTEM

Applicability:

Applies to the surveillance of the instrumentation and associated devices which initiate reactor scram.

Objective:

To specify the type of frequency of surveillance to be applied to the protection instrumentation.

Specification:

A. Instrumentation systems shall be functionally tested and calibrated as indicated in Tables 4.1-1 and 4.1-2 respectively.

The response time of the reactor protection system trip functions listed below shall be demonstrated to be within its limit once per 24 months. Neutron detectors are exempt from response time testing. Each test shall include at least one channel in each trip system. All channels in both trip systems shall be tested within two test intervals.

1. Reactor High Pressure (02-3PT-55A, B, C, D) *
2. Drywell High Pressure (05PT-12A, B, C, D)
3. Reactor Water Level-Low (L3) (02-3LT-101A, B, C, D) *
4. Main Steam Line Isolation Valve Closure
   (29PNS-80A2, B2, C2, D2)
   (29PNS-86A2, B2, C2, D2)
5. Turbine Stop Valve Closure (94PNS-101, 102, 103, 104)
6. Turbine Control Valve Fast Closure (94PS-200A, B, C, D)
7. APRM Fixed High Neutron Flux
8. APRM Flow Referenced Neutron Flux

See ITS: 3.3

1.1 RPS INSTRUMENTATION RESPONSE TIME

* Sensor is eliminated from response time testing for the RPS actuation logic circuits. Response time testing and conformance to the test acceptance criteria for the remaining channel components includes trip unit and relay logic.

A14

Amendment No. ~~227, 233, 235~~, 241

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TSTF-332

Specification 3.3.1.1

A1

3.1 LIMITING CONDITIONS FOR OPERATION	4.1 SURVEILLANCE REQUIREMENTS
3.1 REACTOR PROTECTION SYSTEM	4.1 REACTOR PROTECTION SYSTEM
Applicability:	**Applicability:**
Applies to the instrumentation and associated devices which initiate the reactor scram.	Applies to the surveillance of the instrumentation and associated devices which initiate reactor scram.
Objective:	**Objective:**
To assure the operability of the Reactor Protection System.	To specify the type of frequency of surveillance to be applied to the protection instrumentation.
~~Specification:~~	~~Specification:~~ [Note 1 to SRs]

[LCO 3.3.1.1] A. The setpoints and minimum number of instrument channels per trip system that must be operable for each [Table 3.3.1.1-1] position of the reactor mode switch, shall be as shown in Table ~~3.1-1~~ 3.3.1.1-1

A. Instrumentation systems shall be functionally tested and calibrated as indicated in Tables 4.1-1 and 4.1-2 respectively.

[SR 3.3.1.1.16] The response time of the reactor protection system trip functions listed below shall be demonstrated to be within its limit once per 24 months. [Note 1 to SR 3.3.1.1.16] Neutron detectors are exempt from response time testing. Each test shall include at least one channel in each trip system. [Note 3 to SR 3.3.1.1.16] All channels in both trip systems shall be tested within two test intervals.

MB

[Function]

[3] 1. Reactor High Pressure (02-3PT-55A, B, C, D) *
[6] 2. Drywell High Pressure (05PT-12A, B, C, D)
[4] 3. Reactor Water Level-Low (L3) (02-3LT-101A, B, C, D) *
[5] 4. Main Steam Line Isolation Valve Closure (29PNS-80A2, B2, C2, D2) (29PNS-86A2, B2, C2, D2)
[8] 5. Turbine Stop Valve Closure (94PNS-101, 102, 103, 104)
[7] 6. Turbine Control Valve Fast Closure (94PS-200A, B, C, D)
[2.c] 7. APRM Fixed High Neutron Flux
[2.b] 8. APRM Flow Referenced Neutron Flux

L11

* Sensor is eliminated from response time testing for the RPS actuation logic circuits. Response time testing and conformance to the test acceptance criteria for the remaining channel components includes trip unit and relay logic.

LA14

A14

RAI 3.3.1.1-6 and TSTF-332

1

B

Specification 3.2.2

A1

3.1 (cont'd)

All MCPRs shall be greater than or equal to

4.1 (cont'd)

See ITS: 3.2.4

3.2.2 → B. Minimum Critical Power Ratio (MCPR)

A2

[Applicability] [LCO 3.2.2] During reactor power operation, the MCPR operating limit shall not be less than that shown in the Core Operating Limits Report.

Specified

LA1

1. During Reactor power operation with core flow less than 100% of rated, the MCPR operating limit shall be multiplied by the appropriate K_f as specified in the Core Operating Limits Report.

[Applicability] 2. If anytime during reactor operation at greater than 25% of rated power it is determined that the operating limit MCPR is being exceeded, action shall then be initiated within fifteen (15) minutes to restore operation to within the prescribed limits. If the MCPR is not returned to within the prescribed limits within two (2) hours, an orderly reactor power reduction shall begin immediately.

LA2

[ACTION A]

[ACTION B] The reactor power shall be reduced to less than 25% of rated power within the next four hours, or until the MCPR is returned to within the prescribed limits.

A3

B. Maximum Fraction of Limiting Power Density (MFLPD)

The MFLPD shall be determined daily during reactor power operation at ≥25% rated thermal power and the APRM high flux scram and Rod Block trip settings adjusted if necessary as specified in the Core Operating Limits Report.

C. [SR 3.2.2.1] MCPR shall be determined daily during reactor power operation at ≥25% of rated thermal power and following any change in power level or distribution that would cause operation with a limiting control rod pattern as described in the bases for Specification 3.3.B.5.

once within 12 hours after ≥ 25% RTP AND

L1

M1

D. [SR 3.2.2.2] Determine Verification of the MCPR operating limits shall be performed as specified in the Core Operating Limits Report.

add Surveillances Frequencies

M2

Page 1 of 1

Specification 3.2.4

A1

JAFNPP

3.2.4 APRM Gain and Setpoint

3.1 (cont'd)

4.1 (cont'd)

Once within 12 hours after ≥25% RTP and for SR 3.2.4.1

M1

B. Minimum Critical Power Ratio (MCPR) [Applicability]

During reactor power operation, the MCPR operating limit shall not be less than that shown in the Core Operating Limits Report.

1. During Reactor power operation with core flow less than 100% of rated, the MCPR operating limit shall be multiplied by the appropriate K_f as specified in the Core Operating Limits Report.

2. If anytime during reactor operation at greater than 25% of rated power it is determined that the operating limit MCPR is being exceeded, action shall then be initiated within fifteen (15) minutes to restore operation to within the prescribed limits. If the MCPR is not returned to within the prescribed limits within two (2) hours, an orderly reactor power reduction shall begin immediately. The reactor power shall be reduced to less than 25% of rated power within the next four hours, or until the MCPR is returned to within the prescribed limits.

See ITS: 3.2.2

B. Maximum Fraction of Limiting Power Density (MFLPD)

[SR 3.2.4.1] The MFLPD shall be determined daily during reactor power operation at ≥25% rated thermal power and the APRM high flux scram and Rod Block trip settings adjusted if necessary [SR 3.2.4.2] as specified in the Core Operating Limits Report.

A3

R1

RAI 3.2-1

C. MCPR shall be determined daily during reactor power operation at ≥25% of rated thermal power and following any change in power level or distribution that would cause operation with a limiting control rod pattern as described in the bases for Specification 3.3.B.5.

12 hours for SR 3.2.4.2

M1

D. Verification of the MCPR operating limits shall be performed as specified in the Core Operating Limits Report.

L1

add LCO 3.2.4 and ACTIONS

add SR 3.2.4.1 Note
add SR 3.2.4.2 Note

A2

Page 1 of 1

REVISION D

Specification 3.3.1.1

3.3.1.1-1

TABLE 3.3.1.1-1

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENTS

Minimum No. of Operable Instrument Channels Per Trip System (Notes 1 and 2)	Trip Function	Allowable Value	Applicable Mode or Other Specified Condition: Mode in Which Function Must Be Operable — Refuel (Note 7)	Startup	Run	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Conditions referenced from Required Action D.1: Action (Note 3)
[10] 1	Mode Switch in Shutdown	N/A	X	X	X	1	Mode Switch
[11] 1	Manual Scram	A3 N/A	X	X	X	2	A
[1.a] 3	IRM High Flux	A16 ≤86% (120/125) of full scale	X	X		8	A
[1.b] 3	IRM Inoperative	A3 N/A	X	X		8	A
[2.a] 2	APRM Neutron Flux-Startup (Note 15)	≤15% Power	X	X		6	A
[2.b] 2	APRM Flow Referenced Neutron Flux (Not to exceed 117%) (Note 13)	(Note 12) As specified in the COLR A19 A1			X	6	A or B
[2.c] 2	APRM Fixed High Neutron Flux	≤120% Power			X	6	A or B
[2.d] 2	APRM Inoperative	NA (Note 10) A3	X	X	X	6	A or B

L1 L2 L3 L4 LA1 LA2 LA3 LA4 A1 A3 A4 A5 A16 A19 A or B E F G H (MODES 5 only) M15

B

Specification 3.10.8 A1

JAFNPP

TABLE 3.1-1

see ITS: 3.3.1.1

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENTS

[Applicability]

Minimum No. of Operable Instrument Channels Per Trip System (Notes 1 and 2)	Trip Function	Trip Level Setting	Mode in Which Function Must Be Operable: Refuel (Note 7) A4	Startup	Run	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Action (Note 3)
1	Mode Switch in Shutdown		X	X	X	1 Mode Switch	A
1	Manual Scram		X	X	X	2	A
3	IRM High Flux	≤96% (120/125) of full scale	X	X		8	A
3	IRM Inoperative		X	X		8	A
2	[2.a] APRM Neutron Flux-Startup (Note 15)	≤15% Power	X A4	X		6	A ACTION B N4
2	APRM Flow Referenced Neutron Flux (Not to exceed 117%) (Note 13)	(Note 12)			X	6	A or B
2	APRM Fixed High Neutron Flux	≤120% Power			X	6	A or B
2	[2.d] APRM Inoperative	(Note 10)	A4 X	X	X	6	ACTION B A or B M4

[LCO 3.10.8.a] A4

see JTS: 3.3.1.1

see ITS: 3.3.1.1

see ITS: 3.3.1.1

see ITS: 3.3.1.1

see ITS: 3.3.1.1

A4 add SR 3.10.8.1

JAFNPP 3.3.1.1-1

Specification 3.3.1.1

TABLE 3.3.1.1-1 (cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENTS

Function No.	Required Minimum No. of Operable Instrument Channels Per Trip System (Notes 1 and 2)	Trip Function	Allowable Value Trip Level Setting	Applicable Mode or other Specified condition: Mode in Which Function Must Be Operable — Refuel (Note 7)	Startup	Run	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Conditions referenced from Required Action D.1 Action (Note 3)
[3]	2	Reactor High Pressure	≤ 1060 psig		X	X	4	
[6]	2	Drywell High Pressure (Note 16)	≤ 2.7 psig		X	X	4	
[4]	2	Reactor Low Water Level (Note 15)	≥ 177 in. above TAF		X	X	4	
[7.a, 7.b]	2	High Water Level in Scram Discharge Volume	≤ 34.5 gallons per instrument Volume (Note 4)		X	X	8	
[5]	8	Main Steam Line Isolation Valve Closure	≤ 15% valve closure			X (Note 6)	8	
[9]	2	Turbine Control Valve Fast Closure	500 ≤ P ≤ 850 psig Control oil pressure between fast closure solenoid and disc dump valve			X (Note 5)	8	
[8]	4	Turbine Stop Valve Closure	≤ 10% valve closure			X (Notes 5 & 6)	8	

Amendment No. ~~10, 30, 43, 73, 87, 88, 134, 162, 227, 233~~ 265

41

LICENSE AMEND 265

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Specification 3.3.1.1

A1

3.3.1.1-1

TABLE 3.1-1 (cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENTS

add proposed Note to LCO 3.3.1.1 ACTIONS — A2

NOTES OF TABLE 3.1-1

[LCO 3.3.1.1]

1. There shall be two operable or tripped trip systems for each Trip Function, except as provided for below:

[ACTION A]

a. For each Trip Function with one less than the required minimum number of operable instrument channels, place the inoperable instrument channel and/or its associated trip system in the tripped condition within 12 hours. Otherwise, initiate the ACTION required by Table 3.3.1.1-1 for the Trip Function. — [RA A.1] [RA A.2] [ACTION D]

[ACTION B]

b. For each Trip Function with two or more channels less than the required minimum number of operable instrument channels:

[ACTION C]

1) Within one hour, verify sufficient instrument channels remain operable or tripped to maintain trip capability in the Trip Function, and — LA 1.3

[RA B.1] 2) Within 6 hours, place the inoperable instrument channel(s) in one trip system and/or that trip system in the tripped condition, and

[RA B.2] [ACTION A] 3) Within 12 hours, restore the inoperable instrument channel(s) in the other trip system to an operable status, or place the inoperable instrument channel(s) in the trip system and/or that trip system in the tripped condition.

[ACTION D] If any of these three conditions cannot be satisfied, initiate the ACTION required by Table 3.3.1.1-1 for the affected Trip Function. — LA 1.3

- An inoperable instrument channel or trip system need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, if the inoperable instrument channel is not restored to operable status within the required time, the ACTION required by Table 3.1-1 for that Trip Function shall be taken.

- This action applies to that trip system with the greatest number of inoperable instrument channels. If both systems have the same number of inoperable instrument channels, the ACTION can be applied to either trip system.

2. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions For Operation and required actions may be delayed for up to 6 hours provided the associated Trip Function maintains RPS trip capability.

[Note 2 to SR's]

B

Specification 3.3.1.1 (A1)

3.3.1.1-1

TABLE 3.1-1 (cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENTS

NOTES OF TABLE 3.1-1 (cont'd)

3. Action Statements:

(12) (L2)

[ACTION G] A. Insert all operable control rods within [redacted] hours.
[ACTION F] B. Reduce power level to IRM range and place Mode Switch in the Startup position within eight hours.
[ACTION E] C. Reduce power level to less than 29 percent of rated within four hours.

4. Permissible to bypass, if the Reactor Mode Switch is in the Refuel or Shutdown position. (M1)

5. Bypassed when reactor power is less than 29 percent of rated power. [Applicability Functions 8 and 9]

6. The design permits closure of any two lines without a scram being initiated. (LA5)

7. When the reactor is subcritical and the reactor water temperature is less than 212°F, only the following trip functions need to be operable:

[footnote (a)] (L1)

A. Mode Switch in Shutdown.
B. Manual Scram.
C. High Flux IRM
D. Scram Discharge Volume High Level when any control rod in a control cell containing fuel is not fully inserted.
(L4) E. APRM 15% Power Trip.

[footnote (a)] [Applicability for Function 7.a and 7.b]

8. Not required to be operable when primary containment integrity is not required. (A8)

9. Not required to be operable when the reactor pressure vessel head is not bolted to the vessel. (A7)

10. An APRM will be considered operable if there are at least 2 LPRM inputs per level and at least 11 LPRM inputs of the normal complement. (LA4)

~~11. (Deleted)~~

(B)

Specification 3.10.B

A1

TABLE 3.1-1 (cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENTS

See ITS: 3.3.1.1

~~NOTES OF TABLE 3.1-1 (cont'd)~~

~~3. Action Statements:~~

add ACTION B — M4

[ACTION B]

A. Insert all operable control rods within four hours.
B. Reduce power level to IRM range and place Mode Switch in the Startup position within eight hours.
C. Reduce power level to less than 29 percent of rated within four hours.

4. Permissible to bypass, if the Reactor Mode Switch is in the Refuel or Shutdown position. — see ITS: 3.3.1.1
5. Bypassed when reactor power is less than 29 percent of rated power.
6. The design permits closure of any two lines without a scram being initiated.

[Applicability]

7. When the reactor is subcritical and the reactor water temperature is less than 212°F, only the following trip functions need to be operable: — A4

A. Mode Switch in Shutdown. — see ITS: 3.3.1.1
B. Manual Scram.
C. High Flux IRM
D. Scram Discharge Volume High Level when any control rod in a control cell containing fuel is not fully inserted.

[LCO 3.10.B] (2.a) E. APRM 15% Power Trip.

8. Not required to be operable when primary containment integrity is not required.
9. Not required to be operable when the reactor pressure vessel head is not bolted to the vessel.
10. An APRM will be considered operable if there are at least 2 LPRM inputs per level and at least 11 LPRM inputs of the normal complement.

~~11. (Deleted)~~

See ITS: 3.3.1.1

Specification 3.3.1.1

A1

JAFNPP

3.3.1.1-1

TABLE ~~3.1-1~~ (cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENTS

2.6 Allowable Value

Allowable Value — A19

12. The APRM Flow Referenced Neutron Flux Scram setting shall be less than or equal to the limit specified in the Core Operating Limits Report.

LA3

13. ~~The Average Power Range Monitor scram function is varied as a function of recirculation flow (W).~~ The trip setting of this function must be maintained as specified in the Core Operating Limits Report.

Allowable Value — A19

14. ~~Deleted.~~

LA3

15. This Average Power Range Monitor scram function is fixed point and is increased when the reactor mode switch is placed in the Run position.

16. Instrumentation common to PCIS. — LA10

Specification 3.3.1.1

JAFNPP

TABLE 3.3.1.1-1

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION TEST REQUIREMENTS

	Trip Function	Group (Note 2)	Functional Test	Functional Test Frequency (Note 3)	Instrument Check
[1.0]	Mode Switch in Shutdown	A	Place Mode Switch in Shutdown	H	NA
[1.1]	Manual Scram	A	Trip Channel and Alarm	Q	NA
[SR3.3.1.1.4]	RPS Channel Test Switch	A	Trip Channel and Alarm (Note 4)	W (Note 1)	NA
[1.9]	IRM High Flux	C	Trip Channel and Alarm (Note 4)	S/U and W (Note 5)	NA
[1.6]	IRM Inoperative	C		S/U and W (Note 5)	NA
	APRM				
[2.c]	High Flux	B	Trip Output Relays (Note 4)	Q	NA
[2.d]	Inoperative	B	Trip Output Relays (Note 4)	Q	NA
[2.b]	Flow Biased High Flux	B	Trip Output Relays (Note 4)	Q	NA
[2.a]	High Flux in Startup or Refuel	C	Trip Output Relays (Note 4)	S/U and W (Note 5)	NA
[3]	Reactor High Pressure	B	Trip Channel and Alarm (Note 4)	Q	D
[6]	Drywell High Pressure	B	Trip Channel and Alarm (Note 4)	Q	D
[4]	Reactor Low Level	B	Trip Channel and Alarm (Note 4)	Q	D
[7.b]	High Water Level in Scram Discharge Instrument Volume	A	Trip Channel	Q (Note 6)	NA
[7.a]	High Water Level in Scram Discharge Instrument Volume	B	Trip Channel and Alarm (Note 4)		B

Amendment No. 42, 92, 96, 99, 128, 227

Table 3.3.6.1-1 Primary Containment Isolation Instrumentation

Specification 5.3.6.1 (A1)

JAFNPP

TABLE 4.1-1

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION TEST REQUIREMENTS

Vid	Function	Group (Note 2)	Functional Test [SR 3.3.6.1.2]	Functional Test Frequency (Note 3) (A9) [SR 3.3.6.1.2]	Instrument Check [SR 3.3.6.1.1]
	Mode Switch in Shutdown	A	Place Mode Switch in Shutdown	R	NA
	Manual Scram	A	Trip Channel and Alarm	Q	NA
	RPS Channel Test Switch	A	Trip Channel and Alarm	W (Note 1)	NA
	IRM High Flux	C	Trip Channel and Alarm (Note 4)	S/U and W (Note 5)	NA
	IRM Inoperative	C	Trip Channel and Alarm (Note 4)	S/U and W (Note 5)	NA
	APRM				
	High Flux	B	Trip Output Relays (Note 4)	Q	NA
	Inoperative	B	Trip Output Relays (Note 4)	Q	NA
	Flow Biased High Flux	B	Trip Output Relays (Note 4)	Q	NA
	High Flux In Startup or Refuel	C	Trip Output Relays (Note 4)	S/U and W (Note 5)	NA
	Reactor High Pressure	B	Trip Channel and Alarm (Note 4) (A10)	Q	D
	Drywell High Pressure (8)	B	Trip Channel and Alarm (Note 4) (L14)	Q - Z	D (M9)
	Reactor Low Level (9)	B	Trip Channel and Alarm (Note 4)	Q - Z	Q - 1 (12 hours)
	High Water Level in Scram Discharge Instrument Volume	A	Trip Channel	Q (Note 6)	NA
	High Water Level in Scram Discharge Instrument Volume	B	Trip Channel and Alarm (Note 4)	Q	D

See ITS: 3.3.1.1

See ITS: 3.3.1.1

(TSTF 306.02) [7.b] [5.f] [2.b] [2.h] [6.b] [5.d] [2.a] [2.g] [7.a]

Specification 3.3.6.2

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Table 3.3.6.2-1 Secondary Containment Isolation Instrumentation

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TABLE 4.1-1

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION TEST REQUIREMENTS

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[SR 3.3.6.2.1]

Trip Function	See ITS: 3.3.1.1 Trip Group (Note 2)	CHANNEL Functional Test [SR 3.3.6.2.2]	Functional Test Frequency (Note 3) [SR 3.3.6.2.2]	Instrument Check (Channel)
Mode Switch in Shutdown	A	Place Mode Switch in Shutdown	R	NA
Manual Scram	A	Trip Channel and Alarm	Q	NA
RPS Channel Test Switch	A	Trip Channel and Alarm	W (Note 1)	NA
IRM High Flux	C	Trip Channel and Alarm (Note 4)	S/U and W (Note 5)	NA
IRM Inoperative	C	Trip Channel and Alarm (Note 4)	S/U and W (Note 5)	NA
APRM				
High Flux	B	Trip Output Relays (Note 4)	Q	NA
Inoperative	B	Trip Output Relays (Note 4)	Q	NA
Flow Biased High Flux	B	Trip Output Relays (Note 4)	Q	NA
High Flux in Startup or Refuel	C	Trip Output Relays (Note 4)	S/U and W (Note 5)	NA
Reactor High Pressure	B	Trip Channel and Alarm (Note 4)	Q	D
Drywell High Pressure	B	Trip Channel and Alarm (Note 4)	Q	D
Reactor Low Level	B	Trip Channel and Alarm (Note 4)	Q	D
High Water Level in Scram Discharge Instrument Volume	A	Trip Channel	Q (Note 6)	NA
High Water Level in Scram Discharge Instrument Volume	B	Trip Channel and Alarm (Note 4)	Q	D

See ITS: 3.3.1.1

See ITS: 3.3.1.1

[2] [1]

A7

[2] Q 92 days

[2] Q

[1] D

[1] D

12 hours

M4

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Q (Note 6)

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Specification 3.3.1.1

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3.3.1.1-1

TABLE 4.1-1 (Cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION TEST REQUIREMENTS

add proposed SR 3.3.1.1.14

Trip Function	Group (Note 2)	Functional Test	Functional Test Frequency (Note 3)	Instrument Check
Main Steam Line Isolation Valve Closure	A	Trip Channel and Alarm	Q	NA
Turbine Control Valve Fast Closure	A	Trip Channel and Alarm	Q	NA
Turbine First Stage Pressure Permissive	B	Trip Channel and Alarm (Note 4)	Q	[8][9] D (12 hours) SR 3.3.1.1
Turbine Stop Valve Closure	A	Trip Channel and Alarm	Q	NA

NOTES FOR TABLE 4.1-1

1. The automatic scram contactors shall be exercised once every week by either using the RPS channel test switches or performing a functional test of any automatic scram function. If the contactors are exercised using a functional test of a scram function, the weekly test using the RPS channel test switch is considered satisfied. The automatic scram contactors shall also be exercised after maintenance on the contactors.
2. A description of the three groups is included in the Bases of this Specification.
3. Functional tests are not required on the part of the system that is not required to be operable or are tripped. If tests are missed on parts not required to be operable or are tripped, then they shall be performed prior to returning the system to an operable status.
4. This instrumentation is exempted from the instrument channel test definition. This instrument channel functional test will consist of injecting a simulated electrical signal into the instrument channels.
5. Weekly functional test required only during refuel and startup mode. — [1.a, 1.b and 2.a Applicable Modes]
6. The functional test shall be performed utilizing a water column or similar device to provide assurance that damage to a float or other portions of the float assembly will be detected.

Table 3.3.6.1-1 Primary Containment Isolation Instrumentation

Specification 3.7.6 (A1)

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TABLE 4.1-1 (Cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION TEST REQUIREMENTS

Trip Function	Group (Note 2)	Functional Test	Functional Test Frequency (Note 3)	Instrument Check
Main Steam Line Isolation Valve Closure	A	Trip Channel and Alarm	Q	NA
Turbine Control Valve Fast Closure	A	Trip Channel and Alarm	Q	NA
Turbine First Stage Pressure Permissive	B	Trip Channel and Alarm (Note 4)	Q	D
Turbine Stop Valve Closure	A	Trip Channel and Alarm	Q	NA

See ITS: 3.3.1.1

NOTES FOR TABLE 4.1-1

1. The automatic scram contactors shall be exercised once every week by either using the RPS channel test switches or performing a functional test of any automatic scram function. If the contactors are exercised using a functional test of a scram function, the weekly test using the RPS channel test switch is considered satisfied. The automatic scram contactors shall also be exercised after maintenance on the contactors.

See ITS: 3.3.1.1

2. A description of the three groups is included in the Bases of this Specification.

See ITS: 3.3.1.1

3. Functional tests are not required on the part of the system that is not required to be operable or are tripped. If tests are missed on parts not required to be operable or are tripped, then they shall be performed prior to returning the system to an operable status.

(A9)

4. This instrumentation is exempted from the instrument channel test definition. This instrument channel functional test will consist of injecting a simulated electrical signal into the instrument channels.

(A10)

5. Weekly functional test required only during refuel and startup mode.

See ITS: 3.3.1.1

6. The functional test shall be performed utilizing a water column or similar device to provide assurance that damage to a float or other portions of the float assembly will be detected.

Specification 3.3.6.2

Table 3.3.6.2-1 Secondary Containment Isolation Instrumentation

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TABLE 4.1-1 (Cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION TEST REQUIREMENTS

Trip Function	Group (Note 2)	Functional Test	Functional Test Frequency (Note 3)	Instrument Check
Main Steam Line Isolation Valve Closure	A	Trip Channel and Alarm	Q	NA
Turbine Control Valve Fast Closure	A	Trip Channel and Alarm	Q	NA
Turbine First Stage Pressure Permissive	B	Trip Channel and Alarm (Note 4)	Q	D
Turbine Stop Valve Closure	A	Trip Channel and Alarm	Q	NA

See ITS: 3.3.1.1

~~NOTES FOR TABLE 4.1-1~~

1. The automatic scram contactors shall be exercised once every week by either using the RPS channel test switches or performing a functional test of any automatic scram function. If the contactors are exercised using a functional test of a scram function, the weekly test using the RPS channel test switch is considered satisfied. The automatic scram contactors shall also be exercised after maintenance on the contactors.

See ITS: 3.3.1.1

2. A description of the three groups is included in the Bases of this Specification.
3. Functional tests are not required on the part of the system that is not required to be operable or are tripped. If tests are missed on parts not required to be operable or are tripped, then they shall be performed prior to returning the system to an operable status.

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4. This instrumentation is exempted from the instrument channel test definition. This instrument channel functional test will consist of injecting a simulated electrical signal into the instrument channels.

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5. Weekly functional test required only during refuel and startup mode.
6. The functional test shall be performed utilizing a water column or similar device to provide assurance that damage to a float or other portions of the float assembly will be detected.

See ITS: 3.3.1.1

Table 3.3.6.1-1, Primary Containment Isolation Instrumentation

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Specification 3.3.6.1 (A1)

TABLE 4.1-2

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT CALIBRATION
MINIMUM CALIBRATION FREQUENCIES FOR REACTOR PROTECTION INSTRUMENT CHANNELS

Function

See ITS 3.3.1.1

Instrument Channel	Group (1)	Calibration	Frequency (2) (A9)
IRM High Flux	C	Comparison to APRM on Controlled Shutdowns	W
APRM High Flux Output Signal	B	Heat Balance	D
Flow Bias Signal	B	Internal Power and Flow Test with Standard Pressure Source	R
LPRM Signal	B		Every 1000 MWD/T average core exposure
High Reactor Pressure	B	Standard Pressure Source	(Note 6)
[7.b] [5.f] [2.b] [2.h] High Drywell Pressure	B	Standard Pressure Source (L14)	(Note 6) [SR 3.3.6.1.4]
[6.b] [5.e] [2.a] [2.g] [7.a] Reactor Low Water Level	B	Standard Pressure Source (L14)	(Note 6) [SR 3.3.6.1.5]
High Water Level in Scram Discharge Instrument Volume	A	Water Column (Note 5)	R (Note 5)
High Water Level in Scram Discharge Instrument Volume	B	Standard Pressure Source	Q
Main Steam Line Isolation Valve Closure	A	(Note 4)	(Note 4)
Turbine First Stage Pressure Permissive	B	Standard Pressure Source	(Note 6)

See ITS 3.3.1.1

See ITS 3.3.1.1

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Specification 3.3.1.1 (A1)

JAFNPP (3.3.1.1-1)

TABLE 4.1-2

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT CALIBRATION
MINIMUM CALIBRATION FREQUENCIES FOR REACTOR PROTECTION INSTRUMENT CHANNELS

Function	Instrument Channel	Group (1)	Calibration	Frequency (2) (A10)
[1.a]	IRM High Flux (add proposed SR 3.3.1.1.11 for Function 2.a, 2.b, 2.c)	C	Comparison to APRM on Controlled Shutdowns (M10, L12) [SR 3.3.1.1.2] (add proposed Note)	W ← [SR 3.3.1.1.6] ← (add proposed Note) (M14)
	APRM High Flux Output Signal (M11)	B	Heat Balance	D (7 days) (L13)
[2.b]	Flow Bias Signal (SR 3.3.1.1.7)	B	Internal Power and Flow Test with Standard Pressure Source	R ← [SR 3.3.1.1.13]
[2.]	LPRM Signal	B	[2.a, 2.c] (L7)	Every 1000 MWD/T average core exposure
[3]	High Reactor Pressure	B	Standard Pressure Source	(Note 6) ← [SR 3.3.1.1.10, SR 3.3.1.1.13]
[6]	High Drywell Pressure	B	Standard Pressure Source	(Note 6) ← [SR 3.3.1.1.10, SR 3.3.1.1.13]
[4]	Reactor Low Water Level	B	Standard Pressure Source	(Note 6) ← [SR 3.3.1.1.10, SR 3.3.1.1.13]
[7.b]	High Water Level in Scram Discharge Instrument Volume	A	Water Column (Note 5) (LA11)	R (Note 5) ← [SR 3.3.1.1.13]
[7.a]	High Water Level in Scram Discharge Instrument Volume	B	Standard Pressure Source	Q ← [SR 3.3.1.1.9]
[5]	Main Steam Line Isolation Valve Closure	A	(Note 4) (LA12)	(Note 4) ← [SR 3.3.1.1.13]
[8][9]	Turbine First Stage Pressure Permissive (LA12)	B	Standard Pressure Source	(Note 6) ← [SR 3.3.1.1.10, SR 3.3.1.1.13]

(L6) (L7)

add SR 3.3.1.1.6 to Function 2.a (M14)

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RAI 3.3.1.1-11

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Table 3.3.6.2-1, Secondary Containment Isolation Instrumentation

Specification 3.3.6.2 (A1)

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TABLE 4.1-2

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT CALIBRATION
MINIMUM CALIBRATION FREQUENCIES FOR REACTOR PROTECTION INSTRUMENT CHANNELS

Function

(A5)

Instrument Channel	Group (1)	Calibration	Frequency (2)
IRM High Flux	C	Comparison to APRM on Controlled Shutdowns	W
APRM High Flux Output Signal	B	Heat Balance	D
Flow Bias Signal	B	Internal Power and Flow Test with Standard Pressure Source	R
LPRM Signal	B		Every 1000 MWD/T average core exposure
[2] High Reactor Pressure	B	Standard Pressure Source	(Note 6)
[1] High Drywell Pressure	B	Standard Pressure Source	(Note 6)
Reactor Low Water Level	B	Standard Pressure Source	(Note 6)
High Water Level in Scram Discharge Instrument Volume	A	Water Column (Note 5)	R (Note 5)
High Water Level in Scram Discharge Instrument Volume	B	Standard Pressure Source	Q
Main Steam Line Isolation Valve Closure	A	(Note 4)	(Note 4)
Turbine First Stage Pressure Permissive	B	Standard Pressure Source	(Note 6)

See ITS 3.3.1.1

See ITS 3.3.1.1

(L6)

[SR 3.3.6.2.4
SR 3.3.6.2.5]

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Specification 3.3.1.1

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TABLE 4.1-2 (Cont'd) 3.3.1.1-1

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT CALIBRATION
MINIMUM CALIBRATION FREQUENCIES FOR REACTOR PROTECTION INSTRUMENT CHANNELS

FUNCTION

	Instrument Channel	Group (1)	Calibration	Frequency (2)
[9]	Turbine Control Valve Fast Closure Oil Pressure Trip	A	Standard Pressure Source	R [SR 3.3.1.1.13]
[8]	Turbine Stop Valve Closure	A	(Note 4)	(Note 4) [SR 3.3.1.1.13]

A10 L7 L6 all SR 3.3.1.1.15 M13

NOTES FOR TABLE 4.1-2

1. A description of three groups is included in the Bases of this Specification.
2. Calibration tests are not required on the part of the system that is not required to be operable, or is tripped, but is required prior to return to service. A10
3. Deleted
4. Actuation of these switches by normal means will be performed once per 24 months. M12
5. Calibration shall be performed utilizing a water column or similar device to provide assurance that damage to a float or other portions of the float assembly will be detected. LA11
6. Sensor calibration once per 24 months. Master/slave trip unit calibration once per 6 months.

[SR 3.3.1.1.13] [SR 3.3.1.1.10]

Amendment No. ~~43, 62, 88, 136, 183, 207~~, 233

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B

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Revision B

Specification 3.3.6.1 (A1)

TABLE 4.1-2 (Cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT CALIBRATION
MINIMUM CALIBRATION FREQUENCIES FOR REACTOR PROTECTION INSTRUMENT CHANNELS

Instrument Channel	Group (1)	Calibration	Frequency (2)
Turbine Control Valve Fast Closure Oil Pressure Trip	A	Standard Pressure Source	R
Turbine Stop Valve Closure	A	(Note 4)	(Note 4)

See ITS: 3.3.1.1.

NOTES FOR TABLE 4.1-2

See ITS: 3.3.1.1

1. A description of three groups is included in the Bases of this Specification.
2. Calibration test is not required on the part of the system that is not required to be operable, or is tripped, but is required prior to return to service. (A9)
3. ~~Deleted~~
4. Actuation of these switches by normal means will be performed once per 24 months. See ITS: 3.3.1.1
5. Calibration shall be performed utilizing a water column or similar device to provide assurance that damage to a float or other portions of the float assembly will be detected.
6. Sensor calibration once per 24 months. Master/slave trip unit calibration once per 6 months. [SR 3.3.6.1.5] [SR 3.3.6.1.4]

Specification 3.3.6.2

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TABLE 4.1-2 (Cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT CALIBRATION
MINIMUM CALIBRATION FREQUENCIES FOR REACTOR PROTECTION INSTRUMENT CHANNELS

Instrument Channel	Group (1)	Calibration	Frequency (2)
Turbine Control Valve Fast Closure Oil Pressure Trip	A	Standard Pressure Source	R
Turbine Stop Valve Closure	A	(Note 4)	(Note 4)

See ITS: 3.3.1.1

NOTES FOR TABLE 4.1-2

See ITS: 3.3.1.1

1. A description of three groups is included in the Bases of this Specification.
2. Calibration test is not required on the part of the system that is not required to be operable or is tripped, but is required prior to return to service.

A5

3. Deleted
4. Actuation of these switches by normal means will be performed once per 24 months.
5. Calibration shall be performed utilizing a water column or similar device to provide assurance that damage to a float or other portions of the float assembly will be detected.
6. Sensor calibration once per 24 months. Master/slave trip unit calibration once per 6 months.

See ITS: 3.3.1.1

[SR 3.3.6.2.5]

[SR 3.3.6.2.4]

Chapter 1.0

A1

3.2 LIMITING CONDITIONS FOR OPERATION

3.2 INSTRUMENTATION

Applicability:

Applies to the plant instrumentation which either (1) initiates and controls a protective function, or (2) provides information to aid the operator in monitoring and assessing plant status during normal and accident conditions.

Objective:

To assure the operability of the aforementioned instrumentation.

Specifications:

A. Primary Containment Isolation Functions

When primary containment integrity is required, the limiting conditions of operation for the instrumentation that initiates primary containment isolation are given in Table 3.2-1.

4.2 SURVEILLANCE REQUIREMENTS

4.2 INSTRUMENTATION

Applicability:

Applies to the surveillance requirement of the instrumentation which either (1) initiates and controls protective function, or (2) provides information to aid the operator in monitoring and assessing plant status during normal and accident conditions.

Objective:

To specify the type and frequency of surveillance to be applied to the aforementioned instrumentation.

Specifications:

A. Primary Containment Isolation Functions

Instrumentation shall be functionally tested and calibrated as indicated in Table 4.2-1. System logic shall be functionally tested as indicated in Table 4.2-1.

The response time of the main steam isolation valve actuation instrumentation isolation trip functions listed below shall be demonstrated to be within their limits once per 24 months. Each test shall include at least one channel in each trip system. All channels in both trip systems shall be tested within two test intervals.

1. MSIV Closure - Reactor Low Water Level (L1) *
   (02-3LT-57A,B and 02-3LT-58A,B)
2. MSIV Closure - Low Steam Line Pressure *
   (02PT-134A,B,C,D)
3. MSIV Closure - High Steam Line Flow *
   (02DPT-116A-D, 117A-D, 118A-D, 119A-D)

See ITS 3.3

[1.1 ISOLATION INSTRUMENTATION RESPONSE TIME]

A14

* Sensor is eliminated from response time testing for the MSIV actuation logic circuits. Response time testing and conformance to the test acceptance criteria for the remaining channel components includes trip unit and relay logic.

Specification 3.3.6.1

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3.2 LIMITING CONDITIONS FOR OPERATION	4.2 SURVEILLANCE REQUIREMENTS
3.2 INSTRUMENTATION	**4.2 INSTRUMENTATION**
Applicability:	**Applicability:**
Applies to the plant instrumentation which either (1) initiates and controls a protective function, or (2) provides information to aid the operator in monitoring and assessing plant status during normal and accident conditions.	Applies to the surveillance requirement of the instrumentation which either (1) initiates and controls protective function, or (2) provides information to aid the operator in monitoring and assessing plant status during normal and accident conditions.
Objective:	**Objective:**
To assure the operability of the aforementioned instrumentation.	To specify the type and frequency of surveillance to be applied to the aforementioned instrumentation.
Specifications:	**Specifications:**
A. Primary Containment Isolation Functions	**A. Primary Containment Isolation Functions**
When primary containment integrity is required, the limiting conditions of operation for the instrumentation that initiates primary containment isolation are given in Table 3.2-1.	Instrumentation shall be functionally tested and calibrated as indicated in Table 4.2-1. System logic shall be functionally tested as indicated in Table 4.2-1.
	The response time of the main steam isolation valve actuation instrumentation isolation trip functions listed below shall be demonstrated to be within their limits once per 24 months. Each test shall include at least one channel in each trip system. All channels in both trip systems shall be tested within two test intervals.

[Applicability] MODES 1, 2 and 3 — M13

[LCO 3.3.6.1] — 3.3.6.1-1

[Surveillance Requirements Note 1] — 3.3.6.1-1

[SR 3.3.6.1.8] — [Note 2 to SR 3.3.6.1.8] — M14

[Table 3.3.6.1-1]

[Function 1.a]	1. MSIV Closure - Reactor Low Water Level (L1) •	(02-3LT-67A,B and 02-3LT-68A,B)
[Function 1.b]	2. MSIV Closure - Low Steam Line Pressure •	(02PT-134A,B,C,D)
[Function 1.c]	3. MSIV Closure - High Steam Line Flow •	(02DPT/116A-D/117A-D, 118A-D, 119A-D)

L2

• Sensor is eliminated from response time testing for the MSIV actuation logic circuits. Response time testing and conformance to the test acceptance criteria for the remaining channel components includes trip unit and relay logic.

LA(2) — A2

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Specification 3.3.6.2

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3.2 LIMITING CONDITIONS FOR OPERATION

3.2 INSTRUMENTATION

Applicability:

Applies to the plant instrumentation which either (1) initiates and controls a protective function, or (2) provides information to aid the operator in monitoring and assessing plant status during normal and accident conditions.

Objective:

To assure the operability of the aforementioned instrumentation.

4.2 SURVEILLANCE REQUIREMENTS

4.2 INSTRUMENTATION

Applicability:

Applies to the surveillance requirement of the instrumentation which either (1) initiates and controls protective function, or (2) provides information to aid the operator in monitoring and assessing plant status during normal and accident conditions.

Objective:

To specify the type and frequency of surveillance to be applied to the aforementioned instrumentation.

Specifications (Secondary) Instrumentation [3.3.6.2] (A2) Primary Containment Isolation Function [Appl. cability] [LCO 3.3.6.2]

When primary containment integrity is required, the limiting conditions of operation for the instrumentation that initiates primary containment isolation are given in Table 3.2-T. 3.3.6.2-1 (Secondary)

[SR Table Note 1]

Specifications (Secondary) Instrumentation [3.3.6.2] (A2) Primary Containment Isolation Function

Instrumentation shall be functionally tested and calibrated as indicated in Table 4.2-T. System logic shall be functionally tested as indicated in Table 4.2-T. 3.3.6.2-1

The response time of the main steam isolation valve actuation instrumentation isolation trip functions listed below shall be demonstrated to be within their limits once per 24 months. Each test shall include at least one channel in each trip system. All channels in both trip systems shall be tested within two test intervals.

1. MSIV Closure - Reactor Low Water Level (L1) • (02-3LT-57A,B and 02-3LT-58A,B)
2. MSIV Closure - Low Steam Line Pressure • (02PT-134A,B,C,D)
3. MSIV Closure - High Steam Line Flow • (02DPT-116A-D, 117A-D, 118A-D, 119A-D)

• Sensor is eliminated from response time testing for the MSIV actuation logic circuits. Response time testing and conformance to the test acceptance criteria for the remaining channel components includes trip unit and relay logic.

add Note (a) for proposed ITS Function 1. (M1)

(M7) MODES 1, 2 and 3

see ITS: 3.3.6.1

Specification 3.10.8

A1

3.2 LIMITING CONDITIONS FOR OPERATION

3.2 INSTRUMENTATION

Applicability:

Applies to the plant instrumentation which either (1) initiates and controls a protective function, or (2) provides information to aid the operator in monitoring and assessing plant status during normal and accident conditions.

Objective:

To assure the operability of the aforementioned instrumentation.

Specifications:

A. Primary Containment Isolation Functions

A2 [LCO 3.10.8]

When primary containment integrity is required, the limiting conditions of operation for the instrumentation that initiates primary containment isolation are given in Table 3.2-1.

A2

M3

[Applicability]

MODE 5 with the reactor mode switch in startup/hot standby position

L1

See ITS: 3.3.6.1

4.2 SURVEILLANCE REQUIREMENTS

4.2 INSTRUMENTATION

Applicability:

Applies to the surveillance requirement of the instrumentation which either (1) initiates and controls protective function, or (2) provides information to aid the operator in monitoring and assessing plant status during normal and accident conditions.

Objective:

To specify the type and frequency of surveillance to be applied to the aforementioned instrumentation.

Specifications:

A. Primary Containment Isolation Functions

Instrumentation shall be functionally tested and calibrated as indicated in Table 4.2-1. System logic shall be functionally tested as indicated in Table 4.2-1.

The response time of the main steam isolation valve actuation instrumentation isolation trip functions listed below shall be demonstrated to be within their limits once per 24 months. Each test shall include at least one channel in each trip system. All channels in both trip systems shall be tested within two test intervals.

1. MSIV Closure - Reactor Low Water Level (L1) • (02-3LT-57A,B and 02-3LT-58A,B)
2. MSIV Closure - Low Steam Line Pressure • (02PT-134A,B,C,D)
3. MSIV Closure - High Steam Line Flow • (02DPT-116A-D, 117A-D, 118A-D, 119A-D)

• Sensor is eliminated from response time testing for the MSIV actuation logic circuits. Response time testing and conformance to the test acceptance criteria for the remaining channel components includes trip unit and relay logic.

Specification 3.3.2.1 (A1)

3.2 (cont'd)	4.2 (cont'd)
B. Core and Containment Cooling Systems - Initiation and Control The limiting conditions for operation for the instrumentation that initiates or controls the Core and Containment Cooling Systems are given in Table 3.2-2. This instrumentation must be operable when the system(s) it initiates or controls are required to be operable as specified in Specification 3.5.	B. Core and Containment Cooling Systems - Initiation and Control Instrumentation shall be functionally tested, calibrated, and checked as indicated in Table 4.2-2. System logic shall be functionally tested as indicated in Table 4.2-2.
[3.3.2.1] C. Control Rod Block Actuation (Instrumentation) [LCO 3.3.2.1] The limiting conditions of operation for the instrumentation that initiates control rod block are given in Table ~~3.2-3~~. 3.3.2.1-1	[3.3.2.1] C. Control Rod Block Actuation Instrumentation shall be functionally tested, calibrated, and checked as indicated in Table ~~4.2-3~~. 3.3.2.1-1 [SR Note 1] System logic shall be functionally tested as indicated in Table ~~4.2-3~~. 3.3.2.1-1
D. Radiation Monitoring Systems - Isolation and Initiation Functions Refer to the Radiological Effluent Technical Specifications (Appendix B).	D. Radiation Monitoring Systems - Isolation and Initiation Functions Refer to the Radiological Effluent Technical Specifications (Appendix B).

See ITS: 3.3.5.1 3.3.5.2

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Specification 3.3.5.1

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3.2 (cont'd) Emergency (ECCS) Instrumentation	4.2 (cont'd) Emergency (ECCS) Instrumentation
[3.3.5.2] B. Core and Containment Cooling Systems - Initiation and Control	B. Core and Containment Cooling Systems - Initiation and Control
[LCO 3.3.5.1] The limiting conditions for operation for the instrumentation that initiates or controls the Core and Containment Cooling Systems are given in Table 3.2-2. This instrumentation must be operable when the system(s) it initiates or controls are required to be operable as specified in Specification 3.5. [Applicability] 3.3.5.1 A10	[SR Table Note 1] Instrumentation shall be functionally tested, calibrated, and checked as indicated in Table 4.2-2. 3.3.5.1-1 System logic shall be functionally tested as indicated in Table 4.2-2. 3.3.5.1-1
C. Control Rod Block Actuation The limiting conditions of operation for the instrumentation that initiates control rod block are given in Table 3.2-3.	C. Control Rod Block Actuation Instrumentation shall be functionally tested, calibrated, and checked as indicated in Table 4.2-3. System logic shall be functionally tested as indicated in Table 4.2-3. — See ITS 3.3.2.1
D. Radiation Monitoring Systems - Isolation and Initiation Functions Refer to the Radiological Effluent Technical Specifications (Appendix B).	D. Radiation Monitoring Systems - Isolation and Initiation Functions Refer to the Radiological Effluent Technical Specifications (Appendix B). A4

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Specification 3.3.5.2

A1

RCIC System Instrumentation

3.2 (cont'd)	4.2 (cont'd)
[3.3.5.2] B. Core and Containment Cooling Systems - Initiation and Control [3.3.5.2]	B. Core and Containment Cooling Systems - Initiation and Control
The limiting conditions for operation for the instrumentation that initiates or controls the RCIC Core and Containment Cooling Systems are given in Table 3.2-2. This instrumentation must be operable when the system(s) it initiates or controls are required to be operable as specified in Specification 3.5. [LCO 3.3.5.2] [Applicability] 3.3.5.2-1	[SR Table Note 1] Instrumentation shall be functionally tested, calibrated, and checked as indicated in Table 4.2-2. System logic shall be functionally tested as indicated in Table 4.2-2.
C. Control Rod Block Actuation The limiting conditions of operation for the instrumentation that initiates control rod block are given in Table 3.2-3.	C. Control Rod Block Actuation Instrumentation shall be functionally tested, calibrated, and checked as indicated in Table 4.2-3. System logic shall be functionally tested as indicated in Table 4.2-3.
D. Radiation Monitoring Systems - Isolation and Initiation Functions Refer to the Radiological Effluent Technical Specifications (Appendix B).	D. Radiation Monitoring Systems - Isolation and Initiation Functions Refer to the Radiological Effluent Technical Specifications (Appendix B).

MODE 1, MODE 2 and 3 with reactor steam dome pressure > 150 psig.

A2

See ITS: 3.3.2.1

A8

D 1 F 10

Specification 3.3.2.2

A1

3.2 (cont'd)	4.2 (cont'd)
E. Drywell Leak Detection The limiting conditions for operation for the instrumentation that monitors drywell leak detection are given in Table 3.2-5.	E. Drywell Leak Detection Instrumentation shall be calibrated and checked as indicated in Table 4.2-5.
[3.3.2.2] F. Feedwater Pump Turbine and Main Turbine Trip (Water Level) (Instrumentation) LCO 3.3.2.2 The limiting conditions for operation for the instrumentation that provides a feedwater pump turbine and main turbine trip are given in Table 3.2-6. A5	[3.3.2.2] F. Feedwater Pump Turbine and Main Turbine Trip (Water Level) (Instrumentation) Instrumentation shall be tested and calibrated as indicated in Table 4.2-6. A5
G. Recirculation Pump Trip The limiting conditions for operation for the instrumentation that trip(s) the recirculation pumps as a means of limiting the consequences of a failure to scram during an anticipated transient are given in Table 3.2-7.	G. Recirculation Pump Trip Instrumentation shall be functionally tested and calibrated as indicated in Table 4.2-7. System logic shall be functionally tested as indicated in Table 4.2-7.
H. Accident Monitoring Instrumentation The limiting conditions for operation for the instrumentation that provides accident monitoring are given in Table 3.2-8.	H. Accident Monitoring Instrumentation Instrumentation shall be demonstrated operable by performance of a channel check, channel calibration and functional test as indicated in Table 4.2-8, as applicable.
I. 4kv Emergency Bus Undervoltage Trip The limiting conditions for operation for the instrumentation that prevents damage to electrical equipment or circuits as a result of either a degraded or loss-of-voltage condition on the emergency electrical buses are given in Table 3.2-2.	I. Not Used

See ITS: 3.4.5

See ITS: 3.3.4.1

See ITS: 3.3.3.1

See ITS: 3.3.8.1

Specification 3.3.3.1

A1

3.2 (cont'd)	4.2 (cont'd)
E. Drywell Leak Detection The limiting conditions for operation for the instrumentation that monitors drywell leak detection are given in Table 3.2-5.	**E. Drywell Leak Detection** Instrumentation shall be calibrated and checked as indicated in Table 4.2-5.
F. Feedwater Pump Turbine and Main Turbine Trip The limiting conditions for operation for the instrumentation that provides a feedwater pump turbine and main turbine trip are given in Table 3.2-6.	**F. Feedwater Pump Turbine and Main Turbine Trip** Instrumentation shall be tested and calibrated as indicated in Table 4.2-6.
G. Recirculation Pump Trip The limiting conditions for operation for the instrumentation that trip(s) the recirculation pumps as a means of limiting the consequences of a failure to scram during an anticipated transient are given in Table 3.2-7.	**G. Recirculation Pump Trip** Instrumentation shall be functionally tested and calibrated as indicated in Table 4.2-7. System logic shall be functionally tested as indicated in Table 4.2-7.
[3.3.3.1] **H. Accident Monitoring Instrumentation** (Post) (PAM) [LCO 3.3.3.1] The limiting conditions for operation for the instrumentation that provides accident monitoring are given in Table ~~3.2-8~~. 3.3.3.1-1	[3.3.3.1] **H. Accident Monitoring Instrumentation** (Post) (PAM) SR 3.3.3.1.1, SR 3.3.3.1.2, SR 3.3.3.1.3 Instrumentation shall be demonstrated operable by performance of a channel check, channel calibration and functional test as indicated in Table ~~4.2-8~~, as applicable. 3.3.3.1-1
A2 add Applicability **I. 4kv Emergency Bus Undervoltage Trip** The limiting conditions for operation for the instrumentation that prevents damage to electrical equipment or circuits as a result of either a degraded or loss-of-voltage condition on the emergency electrical buses are given in Table 3.2-2.	**I. Not Used** See ITS 3.3.8.1

See ITS 3.4.5

See ITS 3.3.2.2

See ITS 3.3.4.1

Page 1 of 7

Specification 3.3.4.1

A1

3.2 (cont'd)	4.2 (cont'd)
E. Drywell Leak Detection The limiting conditions for operation for the instrumentation that monitors drywell leak detection are given in Table 3.2-5.	**E. Drywell Leak Detection** (See ITS: 3.4.5) Instrumentation shall be calibrated and checked as indicated in Table 4.2-5.
F. Feedwater Pump Turbine and Main Turbine Trip The limiting conditions for operation for the instrumentation that provides a feedwater pump turbine and main turbine trip are given in Table 3.2-6.	**F. Feedwater Pump Turbine and Main Turbine Trip** (See ITS: 3.3.2.2) Instrumentation shall be tested and calibrated as indicated in Table 4.2-6.
[3.3.4.1] [G.] Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation [LCO 3.3.4.1] The limiting conditions for operation for the instrumentation that trip(s) the recirculation pumps as a means of limiting the consequences of a failure to scram during an anticipated transient are given in ~~Table 3.2-7~~. (A8)	[3.3.4.1] [G.] Recirculation Pump Trip (ATWS-RPT) Instrumentation [SR 3.3.4.1.2] [SR 3.3.4.1.3] [SR 3.3.4.1.4] Instrumentation shall be functionally tested and calibrated as indicated in ~~Table 4.2-7~~. (A8) [SR 3.3.4.1.5] System logic shall be functionally tested as indicated in Table ~~4.2-7~~. (A8)
H. Accident Monitoring Instrumentation The limiting conditions for operation for the instrumentation that provides accident monitoring are given in Table 3.2-8.	**H. Accident Monitoring Instrumentation** (See ITS: 3.3.3.1) Instrumentation shall be demonstrated operable by performance of a channel check, channel calibration and functional test as indicated in Table 4.2-8, as applicable.
I. 4kv Emergency Bus Undervoltage Trip The limiting conditions for operation for the instrumentation that prevents damage to electrical equipment or circuits as a result of either a degraded or loss-of-voltage condition on the emergency electrical buses are given in Table 3.2-2.	**I. Not Used** (See ITS: 3.3.8.1)

Specification 3.3.8.1

3.2 (cont'd)	4.2 (cont'd)
E. Drywell Leak Detection	E. Drywell Leak Detection
The limiting conditions for operation for the instrumentation that monitors drywell leak detection are given in Table 3.2-5.	Instrumentation shall be calibrated and checked as indicated in Table 4.2-5.
F. Feedwater Pump Turbine and Main Turbine Trip	F. Feedwater Pump Turbine and Main Turbine Trip
The limiting conditions for operation for the instrumentation that provides a feedwater pump turbine and main turbine trip are given in Table 3.2-6.	Instrumentation shall be tested and calibrated as indicated in Table 4.2-6.
G. Recirculation Pump Trip	G. Recirculation Pump Trip
The limiting conditions for operation for the instrumentation that trip(s) the recirculation pumps as a means of limiting the consequences of a failure to scram during an anticipated transient are given in Table 3.2-7.	Instrumentation shall be functionally tested and calibrated as indicated in Table 4.2-7. System logic shall be functionally tested as indicated in Table 4.2-7.
H. Accident Monitoring Instrumentation	H. Accident Monitoring Instrumentation
The limiting conditions for operation for the instrumentation that provides accident monitoring are given in Table 3.2-8.	Instrumentation shall be demonstrated operable by performance of a channel check, channel calibration and functional test as indicated in Table 4.2-8, as applicable.
3.3.8.1 Loss of Power (LOP) Instrumentation I. 4kv Emergency Bus Undervoltage Trip	I. Not Used
LCO 3.3.8.1 The limiting conditions for operation for the instrumentation that prevents damage to electrical equipment or circuits as a result of either a degraded or loss-of-voltage condition on the emergency electrical buses are given in Table 3.2-2.	

See ITS 3.1.5 (A1)

See ITS 3.3.2.2

See ITS: 3.3.4.1

See ITS 3.3.3.1

M2

add LCO 3.3.8.1 Applicability

Page 1 of 4

Specification 3.4.5 (A1)

ITS	3.2 (cont'd)	ITS	4.2 (cont'd)
[3.4.5] E.	Drywell Leak Detection (RCS age, Instrumentation A2)	[3.4.5] E.	Drywell Leak Detection (RCS age, Instrumentation)
[LCO 3.4.5]	The limiting conditions for operation for the instrumentation that monitors drywell leak detection are given in Table 3.2-5. (add LCO, A2)	[SR 3.4.5.2] [SR 3.4.5.3]	Instrumentation shall be calibrated and checked as indicated in Table 4.2-5. (A2)
A2	F. Feedwater Pump Turbine and Main Turbine Trip The limiting conditions for operation for the instrumentation that provides a feedwater pump turbine and main turbine trip are given in Table 3.2-6.		F. Feedwater Pump Turbine and Main Turbine Trip Instrumentation shall be tested and calibrated as indicated in Table 4.2-6. (See ITS; 3.3.2.2)
	G. Recirculation Pump Trip The limiting conditions for operation for the instrumentation that trip(s) the recirculation pumps as a means of limiting the consequences of a failure to scram during an anticipated transient are given in Table 3.2-7.		G. Recirculation Pump Trip Instrumentation shall be functionally tested and calibrated as indicated in Table 4.2-7. System logic shall be functionally tested as indicated in Table 4.2-7. (See ITS; 3.3.4.1)
	H. Accident Monitoring Instrumentation The limiting conditions for operation for the instrumentation that provides accident monitoring are given in Table 3.2-8.		H. Accident Monitoring Instrumentation Instrumentation shall be demonstrated operable by performance of a channel check, channel calibration and functional test as indicated in Table 4.2-8, as applicable. (See ITS; 3.3.3.1)
	I. 4kv Emergency Bus Undervoltage Trip The limiting conditions for operation for the instrumentation that prevents damage to electrical equipment or circuits as a result of either a degraded or loss-of-voltage condition on the emergency electrical buses are given in Table 3.2-2.		I. Not Used (See ITS; 3.3.8.1)

Specification 3.3.3.2

(AT)

3.2 (cont'd)

[3.3.3.2] ~~d.~~ Remote Shutdown ~~Capability~~ (System)

[LCO] [3.3.3.2] ~~1.~~ The remote shutdown instrument and control circuits in Table 3.2-10 shall be operable in the ~~Run and Startup/Hot~~ [APPLICABILITY] Standby modes.

ACTION A

2. With one or more required instrument circuits inoperable:

   a. restore the required instrument circuit to operable status within 30 days, or

   b. establish an alternate method of monitoring the parameter within 30 days and restore the required instrument circuit to operable status within 90 days, or (M3)

[ACTION B]

   c. be in hot shutdown within the next 12 hours.

ACTION A

3. With one or more required control circuits inoperable:

   a. place the component actuated by that control circuit in the safe shutdown configuration, or (M3)

   b. restore the required control circuit to operable status within 30 days, or

[ACTION B]

   c. be in hot shutdown within the next 12 hours.

4. Specification 3.2.J does not apply if the component actuated by a required control circuit is inoperable. (M2)

[Note 1 to ACTIONS] 5. The provisions of Specification ~~3.0.D~~ 3.0.4 are not applicable.

4.2 (cont'd)

[3.3.3.2] ~~d.~~ Remote Shutdown Capability (System)

[SR 3.3.3.2.1] [SR 3.3.3.2.2] [SR 3.3.3.2.3] Instruments and controls shall be tested and calibrated as indicated in Table 3.2-10.

MODES 1 and 2 (M1)

add proposed Note 2 to ACTIONS (A2)

RAI 3.3.3.2-2

RAI 3.3.3.2-1

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TABLE 3.2-1

PRIMARY CONTAINMENT ISOLATION SYSTEM INSTRUMENTATION REQUIREMENTS

Minimum No. of Operable Instrument Channels Per Trip System (Notes 1 and 2)	Trip Function	Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Action (Note 3)
2	(1) Reactor Low Water Level (Notes 4 & 5)	≥ 177 in. above TAF	4	A
2	(2) Reactor Low Water Level (Notes 7 & 8)	≥ 177 in. above TAF	2	A
1	(3) Reactor High Pressure (Shutdown Cooling Isolation)	≤ 75 psig	2	D
2	(4) Reactor Low-Low-Low Water Level	≥ 18 in. above the TAF	4	A
2	(5) Drywell High Pressure (Notes 4 & 7)	≤ 2.7 psig	4	A
2	(6) Drywell High Pressure (Notes 7 & 8)	≤ 2.7 psig	2	A
2	(7) Main Steam Line Tunnel High Radiation	≤ 3 x Normal Rated Full Power Background	4	B
2	(8) Main Steam Line Low Pressure (Note 5)	≥ 825 psig	4	B
2	(9) Main Steam Line High Flow	≤ 140% of Rated Steam Flow	4	B
8	(10) Main Steam Line Leak Detection High Temperature	≤ 40°F above max ambient	16	B
4	(11) Reactor Water Cleanup System Equipment Area High Temperature	≤ 40°F above max ambient	8	C
2	(12) Condenser Low Vacuum (Note 6)	≥ 8" Hg. Vac	4	B

Specification 3.3.6.1; 3.3.6.1-1; A1; LA1; Required; A16 Allowable Value; M2 add MODES 4 and 5 to Applicability for 6.b; L5 add ACTION for Function 6.b MODE 3 or 4; L19; L4 add ACTION F for Function 5.e; Functions [6.b] [5.e] [2.a] [7.a]; [2.g]; [6.a]; [6]; [2.e] [1.a]; [5.f] [2.b] [7.b]; [2.h]; [2.f] [1.f]; [1.b] MODE 1; [1.c] per MSL; [1.e]; [5.a, b, c]; [1.d]; L3; L13; A17; A7; LA6; LA9; Note (b); 74; M14; 125.9 psid; L17; 195°F; add proposed values; L6 add ACTION F for 2.e; L7 add RA D.1; L8; L15 add ACTION E; L9 add RA D.2.1 and D.2.2; add ACTION F for 5.f; add Functions 2.d, 2.i, and 5.d; M11; Add proposed Table 3.3.6.1-1, footnote (d); Add proposed Table 3.3.6.1-1 footnote (e); RAI 3.3.6.1-3; TSTF 306 R2; RAI 3.3.6.1-5; Page 3 of 25; Amd 257

Specification 3.3.6.2

Table 3.3.6.2-1 Secondary Containment Isolation Instrumentation

A1

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TABLE 3.2-1

PRIMARY CONTAINMENT ISOLATION SYSTEM INSTRUMENTATION REQUIREMENTS

Required Minimum No. of Operable Instrument Channels Per Trip System (Notes 1 and 2)	Trip Function	Trip Level Setting (A12 Allowable Value)	Total Number of Instrument Channels Provided by Design for Both Trip Systems (LA1)	Action (Note 3)
2	(1) Reactor Low Water Level (Notes 4 & 7)	≥ 177 in. above TAF (LA6)	4	A [C] (L2)
2	Reactor Low Water Level (Notes 7 & 8)	≥ 177 in. above TAF	2	A
1	Reactor High Pressure (Shutdown Cooling Isolation)	≤ 75 psig	2	D
2	Reactor Low-Low-Low Water Level	≥ 18 in. above the TAF	4	A
2	(5) Drywell High Pressure (Notes 4 & 7)	≤ 2.7 psig	4 (LA1)	A [C] (L2)
2	Drywell High Pressure (Notes 7 & 8)	≤ 2.7 psig	2	A
2	Main Steam Line Tunnel High Radiation	≤ 3 x Normal Rated Full Power Background	4	E
2	Main Steam Line Low Pressure (Note 5)	≥ 825 psig	4	B
2	Main Steam Line High Flow	≤ 140% of Rated Steam Flow	4	G
8	Main Steam Line Leak Detection High Temperature	≤ 40°F above max ambient	16	B
4	Reactor Water Cleanup System Equipment Area High Temperature	≤ 40°F above max ambient	8	C
2	Condenser Low Vacuum (Note 6)	≥ 8" Hg. Vac	4	B

See ITS: 3.3.6.1

See ITS: 3.3.6.1

add Table 3.3.6.2-1 Note (a) Applicability for Function 1 (M1)

Specification 3.3.7.2 (A1)

(A1)

TABLE 3.2-1
PRIMARY CONTAINMENT ISOLATION SYSTEM INSTRUMENTATION REQUIREMENTS

Minimum No. of Operable Instrument Channels Per Trip System (Notes 1 and 2) (A1)	Trip Function	Trip Level Setting (A1) Allowable Value	Total Number of Instrument Channels Provided by Design for Both Trip Systems (A3)	Action (Note 3)	
2	Reactor Low Water Level (Notes 4 & 7)	≥ 177 in. above TAF	4	A	See ITS: 3.3.6.1 3.3.6.2
2	Reactor Low Water Level (Notes 7 & 8)	≥ 177 in. above TAF	2	A	
1	Reactor High Pressure (Shutdown Cooling Isolation)	≤ 75 psig	2	D	See ITS: 3.3.6.1
2	Reactor Low-Low-Low Water Level	≥ 18 in. above the TAF	4	A	
2	Drywell High Pressure (Notes 4 & 7)	≤ 2.7 psig	4	A	See ITS: 3.3.6.1 3.3.6.2
2	Drywell High Pressure (Notes 7 & 8)	≤ 2.7 psig	2	A	
2 (A1) [LCO 3.3.7.2]	Main Steam Line Tunnel High Radiation	≤ 3 x Normal Rated Full Power Background [SR 3.3.7.2.2]	4 (A3) [LCO 3.3.7.2]	E	
2	Main Steam Line Low Pressure (Note 5)	≥ 825 psig	4	B	See ITS: 3.3.6.1
2	Main Steam Line High Flow	≤ 140% of Rated Steam Flow	4	G	
8	Main Steam Line Leak Detection High Temperature	≤ 40°F above max ambient	16	B	
4	Reactor Water Cleanup System Equipment Area High Temperature	≤ 40°F above max ambient	8	C	
2	Condenser Low Vacuum (Note 6)	≥ 8" Hg. Vac	4	B	

Specification 3.3.6.1 (A1)

Table 3.3.6.1-1 → TABLE 3.2-1 (Cont'd)

PRIMARY CONTAINMENT ISOLATION SYSTEM INSTRUMENTATION REQUIREMENTS

	Minimum No. of Operable Instrument Channels Per Trip System (Note 1 and 2)	Required	Trip Function	Allowable Value (A16) / Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems (L1)	Action (Note 3)
[3.a]	1	M6	(13) HPCI Turbine Steam Line High Flow	≤ 160 in H_2O dp → 168.24 (L16)	2	F [F]
[3.b]	1	2	(14) HPCI Steam Line Low Pressure	100 > P > 50 psig ≥ 61 psig and ≤ 90 psig	2	F [F]
[3.c]	1	2	(15) HPCI Turbine High Exhaust Diaphragm Pressure	≤ 10 psig → 9.9 (M14)	2	F [F]
[3.d, e, f, g, h, i, j]	1	2	(16) HPCI Steam Line/ Area Temperature (A7)	≤ 40°F above max. ambient (NEW VALUES) (M14)	16	F [F]
[4.a]	1	M6	(17) RCIC Turbine Steam Line High Flow	≤ 262 in H_2O dp → 272.26 (M14)	2	F [F]
[4.b]	1	2	(18) RCIC Steam Line Low Pressure	100 > P > 50 psig ≥ 58 psig and ≤ 93 psig	2	F [F]
[4.c]	1	2	(19) RCIC Turbine High Exhaust Diaphragm Pressure	≤ 10 psig → 5 (M14)	2	F [F]
[4.d, e, and f]	1	2	(20) RCIC Steam Line/ Area Temperature (A7)	≤ 40°F above max. ambient (NEW VALUES) (M14)	8	F [F]

RAI 3.6.1-5

RAI 3.6.1-5

Specification 3.3.6.1

TABLE 3.2-1 (Cont'd)

PRIMARY CONTAINMENT ISOLATION SYSTEM INSTRUMENTATION REQUIREMENTS

NOTES FOR TABLE 3.2-1

[APP] [LCO 3.3.6.1] 1. Whenever Primary Containment integrity is required by Specification 3.7.A.2, there shall be two operable or tripped trip systems for each Trip Function, except as provided for below:

[ACTION A] a. For each Trip Function with one less than the required minimum number of operable instrument channels, place the inoperable instrument channel and/or its associated trip system in the tripped condition* within:

1) 12 hours for trip functions common to RPS instrumentation, and; (2.a, 2.b, 2.g, 2.h, 5.e, 5.f, 6.b, 7.a, and 7.b)

2) 24 hours for trip functions not common to RPS instrumentation. (other than Functions 2.a, 2.b, 2.g, 2.h, 5.e, 5.f, 6.b, 7.a, and 7.b)

[ACTION C] or, initiate the ACTION required by Table 3.2-1 for the affected trip function.

[ACTION B] b. For each Trip Function with two or more channels less than the required minimum number of operable instrument channels:

1) Within one hour, verify sufficient instrument channels remain operable or tripped* to maintain trip capability in the Trip Function, and

2) Within 6 hours, place the inoperable instrument channel(s) in one trip system and/or that trip system** in the tripped condition*, and

3) Restore the inoperable instrument channel(s) in the other trip system to an operable status, or place the inoperable instrument channel(s) in the trip system and/or that trip system in the tripped condition* within:

[ACTION A]

(a) 12 hours for trip functions common to RPS instrumentation, and (2.a, 2.b, 2.g, 2.h, 5.e, 5.f, 6.b, 7.a, and 7.b)

(b) 24 hours for trip functions not common to RPS instrumentation. (other than Functions 2.a, 2.b, 2.g, 2.h, 5.e, 5.f, 6.b, 7.a, and 7.b)

[ACTION C] If any of these three conditions cannot be satisfied, initiate the ACTION required by Table 3.2-1 for the affected Trip Function.

Asterisk shown on next page

Table 3.3.6.2-1 Secondary Containment Isolation Instrumentation

Specification 3.3.6.2 (A1)

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TABLE 3.2-1 (Cont'd)

PRIMARY CONTAINMENT ISOLATION SYSTEM INSTRUMENTATION REQUIREMENTS

(A2) add ACTIONS Note

[MODES 1, 2 and 3] (M1) (M7)

NOTES FOR TABLE 3.2-1

[APPLICABILITY] 1. Whenever Primary Containment Integrity is required by Specification 3.7.A.2, there shall be two operable or tripped trip systems for each Trip Function, except as provided for below: (A9)

[ACTION A]

a. For each Trip Function with one less than the required minimum number of operable instrument channels, place the inoperable instrument channel and/or its associated trip system in the tripped condition* within: (LA2)

1) 12 hours for trip functions common to RPS instrumentation, and (A3) For Functions 1 and 2

2) 24 hours for trip functions not common to RPS instrumentation, see ITS: 3.3.6.1

[ACTION C] or, initiate the ACTION required by Table 3.2-1 for the affected trip function. (L2)

(L1)

b. For each Trip Function with two or more channels less than the required minimum number of operable instrument channels:

[ACTION B]

1) Within one hour, verify sufficient instrument channels remain operable or tripped* to maintain trip capability in the Trip Function, and (L1)

2) Within 6 hours, place the inoperable instrument channel(s) in one trip system and/or that trip system** in the tripped condition*, and

(A4)

[ACTION A]

3) Restore the inoperable instrument channel(s) in the other trip system to an operable status, or place the inoperable instrument channel(s) in the trip system and/or that trip system in the tripped condition* within:

(a) 12 hours for trip functions common to RPS instrumentation, and For Functions 1 and 2 (A3)

(b) 24 hours for trip functions not common to RPS instrumentation. see ITS: 3.3.6.1

[ACTION C] If any of these three conditions cannot be satisfied, initiate the ACTION required by Table 3.2-1 for the affected Trip Function. (L2)

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Amendment No. 18, 71, 48, 97, 90, 103, 119, 122, 126, 203, 207, 227
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Specification 3.3.7.2 A1

TABLE 3.2-1 (Cont'd)

PRIMARY CONTAINMENT ISOLATION SYSTEM INSTRUMENTATION REQUIREMENTS

add Note to ACTIONS A5

NOTES FOR TABLE 3.2-1

[Appli] 1. Whenever Primary Containment integrity is required by Specification 3.7.A.2, there shall be two operable or tripped trip systems for each Trip Function, except as provided for below: A11

[ACTION A] a. For each Trip Function with one less than the required minimum number of operable instrument channels, place the inoperable instrument channel and/or its associated trip system in the tripped condition* within: add Required Action A.2. Note A12

1) 12 hours for trip functions common to RPS instrumentation, and — see ITS: 3.3.6.1

2) 24 hours for trip functions not common to RPS instrumentation. A6

[ACTION C] or, initiate the ACTION required by Table 3.2-1 for the affected trip function. — Required Actions C.1, C.2 or C.3 L1

[ACTION B] b. For each Trip Function with two or more channels less than the required minimum number of operable instrument channels:

1) Within one hour, verify sufficient instrument channels remain operable or tripped* to maintain trip capability in the Trip Function, and

2) Within 6 hours, place the inoperable instrument channel(s) in one trip system and/or that trip system** in the tripped condition*, and L2 A12

[ACTION A] 3) Restore the inoperable instrument channel(s) in the other trip system to an operable status, or place the inoperable instrument channel(s) in the trip system and/or that trip system in the tripped condition* within: add Required Action A2 Note

(a) 12 hours for trip functions common to RPS instrumentation, and — see ITS: 3.3.6.1

(b) 24 hours for trip functions not common to RPS instrumentation. A6

[ACTION C] If any of these three conditions cannot be satisfied, initiate the ACTION required by Table 3.2-1 for the affected Trip Function. — Required Actions C.1, C.2, C.3 L1

Asterisk shown on next page

Specification 3.10.8

A1

TABLE 3.2-1 (Cont'd)

PRIMARY CONTAINMENT ISOLATION SYSTEM INSTRUMENTATION REQUIREMENTS — See ITS: 3.3.6.1

A2 [LCO 3.10.8]

NOTES FOR TABLE 3.2-1

1. Whenever Primary Containment integrity is required by Specification 3.7.A.2 (MODE 5 with the reactor mode switch in startup/hot standby position) (LCO 3.10.8) (M3) there shall be two operable or tripped trip systems for each Trip Function, except as provided for below (A2)

   a. For each Trip Function with one less than the required minimum number of operable instrument channels, place the inoperable instrument channel and/or its associated trip system in the tripped condition* within:

      1) 12 hours for trip functions common to RPS instrumentation, and

      2) 24 hours for trip functions not common to RPS instrumentation,

      or, initiate the ACTION required by Table 3.2-1 for the affected trip function.

   b. For each Trip Function with two or more channels less than the required minimum number of operable instrument channels:

      1) Within one hour, verify sufficient instrument channels remain operable or tripped* to maintain trip capability in the Trip Function, and

      2) Within 6 hours, place the inoperable instrument channel(s) in one trip system and/or that trip system** in the tripped condition*, and

      3) Restore the inoperable instrument channel(s) in the other trip system to an operable status, or place the inoperable instrument channel(s) in the trip system and/or that trip system in the tripped condition* within:

         (a) 12 hours for trip functions common to RPS instrumentation, and

         (b) 24 hours for trip functions not common to RPS instrumentation.

   If any of these three conditions cannot be satisfied, initiate the ACTION required by Table 3.2-1 for the affected Trip Function.

Asterisk shown on next page

A1

JAFNPP 3.3.6.1-1

TABLE 3.2-1 (Cont'd)

PRIMARY CONTAINMENT ISOLATION SYSTEM INSTRUMENTATION REQUIREMENTS

NOTES FOR TABLE 3.2-1 (cont'd)

LA2

- An inoperable instrument channel or trip system need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, if the inoperable instrument channel is not restored to operable status within the required time, the ACTION required by Table 3.2-1 for that Trip Function shall be taken.

[ACTION C]

L10

- ** This action applies to that trip system with the greatest number of inoperable instrument channels. If both systems have the same number of inoperable instrument channels, the ACTION can be applied to either trip system.

M12

2. When a channel, and/or the affected primary containment isolation valve, is placed in an inoperable status solely for performance of required instrumentation surveillances, entry into associated Limiting Conditions for Operation and required actions may be delayed as follows:

[NOTE 2 to SRs]

A.5

a) for up to 6 hours for Trip Functions utilizing a two-out-of-two-taken-once logic; or

2.g, 2.h, 2.i, 7.a, and 7.b — M5 — for Function 2.i

b) for up to 6 hours for the remaining Trip Functions provided the associated Trip Function maintains PCIS initiation capability for at least one containment isolation valve in the affected penetration.

LA4

TSTF 306, R2

3. Actions:

LA3

MODE 3 in 12 hours — M7

36 — L11

12 — L12

one — M8

LA3

see also TS 3.3.7.2

[H] [D] A. Place the reactor in the cold condition within 24 hours.

[D] B. Isolate the main steam lines within 8 hours.

[F] C. Isolate Reactor Water Cleanup System within four hours.

[F] D. Isolate shutdown cooling within four hours.

[F.1] E. Isolate the main steam line drain valves, the recirculation loop sample valves, and the mechanical vacuum pump within eight hours.

one — M8

[F] F. Isolate the affected penetration flow path(s) within one hour and declare the affected system inoperable.

A6

[D] G. Isolate the affected main steam line within eight hours.

12 — L12

M11

add ACTIONS B, C and I for Function 5.1

TSTF 306, R2

TSTF 306, R2 and 257

Table 3.3.6.2-1 Secondary Containment Isolation Instrumentation

Specification 3.3.6.2

A1

TABLE 3.2-1 (Cont'd)

PRIMARY CONTAINMENT ISOLATION SYSTEM INSTRUMENTATION REQUIREMENTS

LA2

NOTES FOR TABLE 3.2-1 (cont'd)

- An inoperable instrument channel or trip system need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, if the inoperable instrument channel is not restored to operable status within the required time, the ACTION required by Table 3.2-1 for that Trip Function shall be taken.

- This action applies to that trip system with the greatest number of inoperable instrument channels. If both systems have the same number of inoperable instrument channels, the ACTION can be applied to either trip system.

L1

M6

[SR Note 2] 2. When a channel and/or the affected primary containment isolation valve is placed in an inoperable status solely for performance of required instrumentation surveillances, entry into associated Limiting Conditions for Operation and required actions may be delayed as follows:

See ITS 3.3.6.1

a) for up to 6 hours for Trip Functions utilizing a two-out-of-two-taken-once logic; or

[SR Note 2] b) for up to 6 hours for the remaining Trip Functions provided the associated Trip Function maintains PCIS initiation capability for at least one containment isolation valve in the affected penetration

LA1

secondary containment

3. Actions:

add ACTION C

L2

A. Place the reactor in the cold condition within 24 hours.
B. Isolate the main steam lines within eight hours.
C. Isolate Reactor Water Cleanup System within four hours.
D. Isolate shutdown cooling within four hours.
E. Isolate the main steam line drain valves, the recirculation loop sample valves, and the mechanical vacuum pump, within eight hours.
F. Isolate the affected penetration flow path(s) within one hour and declare the affected system inoperable.
G. Isolate the affected main steam line within eight hours.

See ITS 3.3.6.1

AMD 25

Specification 3.3.7.2 (A1)

TABLE 3.2-1 (Cont'd) (A1)

PRIMARY CONTAINMENT ISOLATION SYSTEM INSTRUMENTATION REQUIREMENTS

~~NOTES FOR TABLE 3.2-1 (cont'd)~~

[ACTION C]

* An inoperable instrument channel or trip system need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, if the inoperable instrument channel is not restored to operable status within the required time, the ACTION required by Table 3.2-1 for that Trip Function shall be taken. (LA3) (Required Actions C.1, C.2, C.3) (L1)

** This action applies to that trip system with the greatest number of inoperable instrument channels. If both systems have the same number of inoperable instrument channels, the ACTION can be applied to either trip system. (L2)

[NOTE to SRs]

2. When a channel, ~~and/or the affected primary containment isolation valve~~, is placed in an inoperable status solely for performance of required instrumentation surveillances, entry into associated Limiting Conditions for Operation and required actions may be delayed as follows: (see ITS: 3.3.6.1)

   a) for up to 6 hours for Trip Functions utilizing a two-out-of-two-taken-once logic; or (see ITS: 3.3.6.1)

   b) for up to 6 hours for the remaining Trip Functions provided the associated Trip Function maintains PCIS initiation capability ~~for at least one containment isolation valve in the affected penetration~~. (condenser air removal pump isolation capability) (A7)

3. Actions:

   A. Place the reactor in the cold condition within 24 hours. (see ITS 3.3.6.1)
   B. Isolate the main steam lines within eight hours.
   C. Isolate Reactor Water Cleanup System within four hours.
   D. Isolate shutdown cooling within four hours.

[ACTION C]

   E. Isolate the main steam line drain valves, the recirculation loop sample valves, and the ~~mechanical vacuum~~ (condenser air removal) pump, within eight hours. (L2) (L3) (L1)
   F. Isolate the affected penetration flow path(s) within one hour and declare the affected system inoperable.
   G. Isolate the affected main steam line within eight hours. (see ITS 3.3.6.1)

add proposed Required Actions C.2 and C.3

Table 3.3.6.1-1 → TABLE 3.2-1 (Cont'd)

Specification 3.3.6.1 (A1)

PRIMARY CONTAINMENT ISOLATION SYSTEM INSTRUMENTATION REQUIREMENTS

NOTES FOR TABLE 3.2-1 (cont'd)

4. These signals also start SGTS and initiate secondary containment isolation. — See ITS: 3.3.6.2
5. Only required in run mode (interlocked with Mode Switch). — APPLICABILITY FOR FUNCTION 1.b
6. Only required in the run mode and turbine stop valves are open. — APPLICABILITY FOR FUNCTION 1.d and footnote (a)
7. Instrumentation common to RPS. — LA6
8. Trip Function utilizes a two-out-of-two taken-once logic for isolation of both primary containment isolation valves on the hydrogen and oxygen sample, and gaseous and particulate sample supply and return lines. — Note (b) — LA4

Only one trip system provided for each associated penetration

Table 3.3.6.2-1
Secondary Containment Isolation Instrumentation

JAFNPP

Specification 3.3.6.2

A1

TABLE 3.2-1 (Cont'd)

PRIMARY CONTAINMENT ISOLATION SYSTEM INSTRUMENTATION REQUIREMENTS

NOTES FOR TABLE 3.2-1 (cont'd)

4. These signals also start SGTS and initiate secondary containment isolation. LA4

5. Only required in run mode (interlocked with Mode Switch).

6. Only required in the run mode and turbine stop valves are open.

See ITS: 3.3.6.1

7. Instrumentation common to RPS. LA5

8. Trip Function utilizes a two-out-of-two-taken-once logic for isolation of both primary containment isolation valves on the hydrogen and oxygen sample, and gaseous and particulate sample supply and return lines.

See ITS 3.3.6.1

Specification 3.3.5.1

Table 3.3.5.1-1
ECCS Instrumentation

A1

JAFNPP

TABLE 3.2-2

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

A7

Required Channels per Function

A12

LA2

Item No.	Minimum No. of Operable Instrument Channels Per Trip System	Trip Function	Allowable Value / Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Remarks
3.a → 1	2 (LA2) (Notes 1, 11) [ACTION B, A] [SR Table 2.1]	Reactor Low-Low Water Level	≥ 126.5 in. above TAF	4 HPCI & RCIC	Initiates HPCI, RCIC and SBTS. LA1
1.a, 2.a, 1.A, 3.A → 2	B (LA2) (Notes 1, 2) (3) (11) [ACTION B, H for Functions 1.a, 2.a] [ACTION F, B for Functions 1.a, 5.a] [SR Table Note 2.b]	Reactor Low-Low-Low Water Level	≥ 18 in. above TAF	4 (1.a, 2.a) AB Core Spray & RHR	Initiates Core Spray, RHR (LPCI), and Emergency Diesel Generators. Table 3.3.5-1 Note b
			LA4	4 (4.a, 5.A) AB ADS; 2 in Trip System A, 2 in Trip System B (A7)	Initiates ADS (if not inhibited by ADS override switches) in conjunction with Confirmatory Low Level, 120 second delay and RHR (LPCI) or Core Spray pump discharge pressure interlock. LA1
MM	222.4 inches				F
3.c → 3	[ACTION C, H] [SR Table Note 2.a] 2 (LA2) (Notes 4, 12)	Reactor High Water Level	≤ 222.5 in. above TAF	2 (Note 16) LA2	Trips HPCI turbine. LA1
4	2 (Notes 4, 12)	Reactor High Water Level	≤ 222.5 in. above TAF	2 (Note 16)	Closes RCIC steam supply valve. LA1
2.e → 5	1 (LA2) (Notes 3, 11) [ACTION B, A] [SR Table Note 2.b]	Reactor Low Level (inside shroud)	≥ 0 in. above TAF LA4	2	Prevents inadvertent operation of containment spray during accident condition. LA1
2.h → 6	B (LA2) (Notes 3, 11) [ACTION B, H] [SR Table Note 2.b]	Containment High Pressure	1 inch; 1 ≤ p ≤ 2.7 psig M6; add new value; L6	4	Prevents inadvertent operation of containment spray during accident condition. LA1

See ITS: 3.3.5.2

Table 3.3.5-1 Note b

F

See ITS: 3.3.5.2

F

add Functions 1.e, 1.f, 2.g, 3.f and 3.g M12

Table 3.3.5.2-1 Reactor Core Isolation Cooling System Instrumentation

Specification 3.3.5.2 (A1)

TABLE 3.2-2

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

Item No.	Minimum No. of Operable Instrument Channels Per Trip System (LA1)	Trip Function (A9)	Allowable Value / Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems (Required Channels per Function)	Remarks
1 [ACTION B, E]	2 (LA1) (Notes 1, 11) [SR Table Note 2]	Reactor Low-Low Water Level (Level 2)	≥ 126.5 in. above TAF (LA4)	4 (HPCI & RCIC) (See ITS: 3.3.5.1)	Initiates HPCI, RCIC, and SGTS. (LA2)
2	2 (Notes 2, 3, 11)	Reactor Low-Low-Low Water Level	≥ 18 in. above TAF	4 (Core Spray & RHR)	Initiates Core Spray, RHR (LPCI), and Emergency Diesel Generators.
				4 (ADS)	Initiates ADS (if not inhibited by ADS override switches), in conjunction with Confirmatory Low Level, 120 second delay and RHR (LPCI) or Core Spray pump discharge pressure interlock.
3	2 (Notes 4, 12)	Reactor High Water Level	≤ 222.5 in. above TAF	2 (Note 16)	Trips HPCI turbine.
4 [ACTION C, E]	2 (LA1) (Notes 4, 12) [SR Table Note 2]	Reactor High Water Level [Level 8]	≤ 228.5 in. above TAF (222.4) (A4) (M4)	2 (Note 16) (LA1)	Closes RCIC steam supply valve. (LA2)
5	1 (Notes 5, 11)	Reactor Low Level (inside shroud)	≥ 0 in. above TAF	2	Prevents inadvertent operation of containment spray during accident condition.
6	2 (Notes 5, 11)	Containment High Pressure	1 < p < 2.7 psig	4	Prevents inadvertent operation of containment spray during accident condition.

See ITS: 3.3.5.1

add Function 4 (M2)

(E)

Specification 3.3.5.1

A1

Table 3.3.5.1-1
ECCS Instrumentation

JAFNPP

TABLE 3.2-2 (Cont'd)

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

A7 Required Channels Per Function

LA2 Minimum No. of Operable Instrument Channels Per Trip System

A12 Total Number of Allowable Value

Trip Level Setting

Instrument Channels Provided by Design for Both Trip Systems

LA1 Remarks

Item No.	Trip Function	Trip Level Setting	Instrument Channels Provided by Design for Both Trip Systems	Remarks
[4.c, 5.c] Z [ACTION F, H] (1) A7 [SR Table Note 2.b] (Notes 3, 11)	Reactor Low Level	≥ 177 in. above TAF (LA4)	[4.c] (2) { 1 for ADS A, 1 for ADS B (A7)	Confirmatory low water level for ADS actuation. (LA1)
[1.b, 2.b, 3.b] B [ACTION B, H] (2) LA2 (Notes 1, 2) (11)	Drywell High Pressure	≤ 2.7 psig	4	Initiates Core Spray, RHR (LPCI), HPCI and SGTS. (LA1)
[1.c, 2.c] D (2) LA2 (Notes 3, 11) [ACTION C] [SR Table Note 2.b]	Reactor Low Pressure	≥ 450 psig (add new values) 410 psig and ≤ 490	4 (L6)	Permits opening Core Spray and RHR (LPCI) injection valves.
10	1 (Notes 2, 12) Reactor Low Pressure	50 ≤ p ≤ 75 psig	2	Permits closure of RHR (LPCI) injection valves while in shutdown cooling in conjunction with PCIS signal. (see ITS 3.3.6.1)
[1.d] (1) LA2 (1) (Notes 1, 11) [ACTION C] [SR Table Note 2.b]	Core Spray Pump Start Timer (each loop) per pump	11 ≤ 1.34 sec. (L7)	1 (Note 16) LA2	Initiates starting of core spray pump. (each loop) (LA1)
[2.f] (1) LA2 (1) (Notes 3, 11)	RHR (LPCI) Pump Start Timer (per pump)			
	1st Pump (A Loop)	1.25 ± 0.26 sec.	1 (Note 16)	Starts 1st Pump (A Loop)
	1st Pump (B Loop)	1.25 ± 0.26 sec.	1 (Note 16)	Starts 1st Pump (B Loop)
	2nd Pump (A Loop)	6.0 ± 0.73 sec.	1 (Note 16)	Starts 2nd Pump (A Loop)
	2nd Pump (B Loop)	6.0 ± 0.73 sec.	1 (Note 16)	Starts 2nd Pump (B Loop)

A9 Pumps A, D

Pumps B, C

LA2

LA1

F Amd 263

Amd 263

SEE ITS 3.3.5.1

Specification 3.3.6.1 (A1)

TABLE 3.2-2 (Cont'd)

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

Item No.	Minimum No. of Operable Instrument Channels Per Trip System	Trip Function	Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Remarks
7	1 (Notes 3, 11)	Reactor Low Level	$\geq$ 177 in. above TAF	2	Confirmatory low water level for ADS actuation.
8	2 (Notes 1, 2, 11)	Drywell High Pressure	$\leq$ 2.7 psig	4	Initiates Core Spray, RHR (LPCI), HPCI and SGTS.
9	2 (Notes 6, 11)	Reactor Low Pressure	$\geq$ 450 psig	4	Permits opening Core Spray and RHR (LPCI) injection valves.
10	1 (Notes 2, 12)	Reactor Low Pressure	50 $\leq$ p $\leq$ 75 psig	2	Permits closure of RHR (LPCI) injection valves while in shutdown cooling in conjunction with PCIS signal.
11	1 (Notes 7, 11)	Core Spray Pump Start Timer (each loop)	11 $\pm$ 1.34 sec.	1 (Note 16)	Initiates starting of core spray pump. (each loop)
12	1 (Notes 7, 11)	RHR (LPCI) Pump Start Timer			
		1st Pump (A Loop)	1.25 $\pm$ 0.26 sec.	1 (Note 16)	Starts 1st Pump (A Loop)
		1st Pump (B Loop)	1.25 $\pm$ 0.26 sec.	1 (Note 16)	Starts 1st Pump (B Loop)
		2nd Pump (A Loop)	6.0 $\pm$ 0.73 sec.	1 (Note 16)	Starts 2nd Pump (A Loop)
		2nd Pump (B Loop)	6.0 $\pm$ 0.73 sec.	1 (Note 16)	Starts 2nd Pump (B Loop)

LA8

Amd 263

Amd 263

SEE ITS 3.3.5.1

Specification 3.3.5.1

A1

Table 3.3.5.1-1
ECCS Instrumentation

JAFNPP

TABLE 3.2-2 (Cont'd)

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

A7 Required Channels per Function

LA2

Item No.	Minimum No. of Operable Instrument Channels Per Trip System	Trip Function	A12 Allowable Value / Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Remarks
[4.b] [5.b] V3 Action G, H	1 A7 Notes B, I	Auto Blowdown Timer	≤ 134 sec.	[4.b] [5.b] 2 — 1 in Trip System A, 1 in Trip System B	Initiates ADS (if not inhibited by ADS override switches).
[4.e] [5.e] V4 Action G, H	4 A7 Notes B, I	RHR (LPCI) Pump Discharge Pressure Interlock	125 psig ± 20 psig	[4.e] [5.e] 8 — 4 in Trip System A, 4 in Trip System B	Permits ADS actuation.
[4.d] [5.d] V5 Action G, H	2 A7 Notes B, I	Core Spray Pump Discharge Pressure Interlock	100 psig ± 10 psig	[4.d] [5.d] 4 — 2 in Trip System A, 2 in Trip System B	Permits ADS actuation.
16	2 (Notes 9, 11)	Condensate Storage Tank Low Level	≥ 59.5 in. above tank bottom (= 15,600 gal. avail)	2 (Note 16)	Transfers RCIC pump suction to suppression chamber.
[3.d] V7	2 LA2 Notes 9, I	Condensate Storage Tank Low Level	≥ 59.5 in. above tank bottom (= 15,600 gal. avail) A16 LA3	4 — 2 Note 16 LA2; M1	Transfers HPCI pump suction to suppression chamber. LA1
[3.e] V8 Action D, H	2 LA2 Notes 9, I	Suppression Chamber High Level	≤ 6 in. above normal level (145 feet) A16	2 (Note 16) LA2	Transfers HPCI pump suction to suppression chamber.

[SR Table Note 2.b]

[SR Table Note 2.b]

A7

LA1

A1 and LA3

See ITS! 3.3.5.2

Table 3.3.5.2-1 Reactor Core Isolation Cooling System Instrumentation

Specification 3.3.5.2

A1

JAFNPP

TABLE 3.2-2 (Cont'd)

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

Item No.	Minimum No. of Operable Instrument Channels Per Trip System	Trip Function	Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Remarks
13	1 (Notes 8, 11)	Auto Blowdown Timer	≤ 134 sec.	2	Initiates ADS (if not inhibited by ADS override switches).
14	4 (Notes 8, 11)	RHR (LPCI) Pump Discharge Pressure Interlock	125 psig ± 20 psig	8	Permits ADS actuation.
15	2 (Notes 8, 11)	Core Spray Pump Discharge Pressure Interlock	100 psig ± 10 psig	4	Permits ADS actuation.
16	2 (Notes 9, 11)	Condensate Storage Tank Low Level	≥ 59.5 in. above tank bottom (= 15,600 gal. avail)	4 (Note 16)	Transfers RCIC pump suction to suppression chamber.
17	2 (Notes 9, 11)	Condensate Storage Tank Low Level	≥ 59.5 in. above tank bottom (= 15,600 gal. avail)	2 (Note 16)	Transfers HPCI pump suction to suppression chamber.
18	2 (Notes 9, 11)	Suppression Chamber High Level	≤ 6 in. above normal level	2 (Note 16)	Transfers HPCI pump suction to suppression chamber.

See ITS 3.3.5.1

Amd 263

Table 3.3.5.1-1
ECCS Instrumentation

Specification 3.3.5.1 (A1)

JAFNPP

TABLE 3.2-2 (Cont'd)

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

(LA2) (A12) (A7) (See ITS: 3.3.8.1)

Note No.	Minimum No. of Operable Instrument Channels Per Trip System	Trip Function	Allowable Value / Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems (Required Channels per Function)	Remarks
19	(2 per 4kV bus) (Note 10)	4kV Emergency Bus Undervoltage Relay (Degraded Voltage)	110.6 ± 0.8 secondary volts	4	Initiates both 4kV Emergency Bus Undervoltage Timers. (Degraded Voltage LOCA and non-LOCA) (Note 14)
20	(1 per 4kV bus) (Note 10)	4kV Emergency Bus Undervoltage Timer (Degraded Voltage LOCA)	8.96 ± 0.55 sec.	2	(Note 13)
21	(1 per 4kV bus) (Note 10)	4kV Emergency Bus Undervoltage Timer (Degraded Voltage non-LOCA)	43.8 ± 2.8 sec.	2	(Note 13)
22	(2 per 4kV bus) (Note 10)	4kV Emergency Bus Undervoltage Relay (Loss of Voltage)	85 ± 4.81 secondary volts	4	Initiates 4kV Emergency Bus Undervoltage Loss of Voltage Timer. (Note 15)
23	(1 per 4kV bus) (Note 10)	4kV Emergency Bus Undervoltage Timer (Loss of Voltage)	2.50 ± 0.11 sec.	2	(Note 13)
[2.d] → 24	(LA2) 21 (Note 11) [ACTION C, N]	Reactor Low Pressure	285 to 335 psig (≥ 295 All-new value) [SR Table Note 2.b] add new Applicability (L6)	4	Permits closure of recirculation pump discharge valve. (LA1)

(1F)

Specification 3.3.8.1

Loss of Power Instrumentation

JAFNPP

TABLE ~~3.2.2~~ (Cont'd) 3.3.8.1-1

A1

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

Item No.	Required Channels per Bus (A4)	Minimum No. of Operable Instrument Channels Per Trip System	Trip Function	Allowable Value (L1) / Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems (A4)	Remarks
[2.a] 18	ACTION A,B	(2 per 4kV bus) (Note 10)	4kV Emergency Bus Undervoltage Relay (Degraded Voltage)	110.6 ± 0.8 secondary volts (LA1) ≥ 109.8 V and 111.4 V	4	Initiates both 4kV Emergency Bus Undervoltage Timers. (Degraded Voltage LOCA and non-LOCA) (Note 14) (LA1)
[2.b] 20		(1 per 4kV bus) (Note 10)	4kV Emergency Bus Undervoltage Timer (Degraded Voltage LOCA)	8.96 ± 0.55 sec. ≥ 8.4 seconds and ≤ 9.5 seconds	2	(Note 13)
[2.c] 21		(1 per 4kV bus) (Note 10)	4kV Emergency Bus Undervoltage Timer (Degraded Voltage non-LOCA)	43.8 ± 2.8 sec. ≥ 41.0 seconds and ≤ 46.6 seconds	2	(Note 13)
[1.a] 22		(2 per 4kV bus) (Note 10)	4kV Emergency Bus Undervoltage Relay (Loss of Voltage)	85 ± 4.8 secondary volts (LA2) ≥ 80.2 V and 89.8 V	4	Initiates 4kV Emergency Bus Undervoltage Loss of Voltage Timer. (Note 15)
[1.b] 23		(1 per 4kV bus) (Note 10)	4kV Emergency Bus Undervoltage Timer (Loss of Voltage)	2.50 ± 0.11 sec. ≥ 2.4 seconds and ≤ 2.6 seconds	2	(Note 13)
24		2 (Notes 6, 11)	Reactor Low Pressure	285 to 335 psig	4	Permits closure of recirculation pump discharge valve.

See ITS: 3.3.5.1

Specification 3.3.5.1

A1

A2

ACTIONS

add ACTIONS NOTE

JAFNPP

TABLE 3.2-2

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

add ACTION A

A3

NOTES FOR TABLE 3.2-2

1. With one or more channels inoperable for HPCI and/or RCIC:

See ITS 3.3.5.2

add Note to Required Action B.2

A11

[RA B.2] A. Within one hour from discovery of loss of system initiation capability, declare the affected system inoperable, and

[RA B.3] B. Within 24 hours, place channel in trip.

[COND H] C. If required actions and associated completion times of actions A or B are not met, immediately declare the affected system inoperable.

2. With one or more channels inoperable for Core Spray and/or RHR:

add Notes 1 and 2 to Required Action B.1

L4

[RA B.1] A. Within one hour from discovery of loss of initiation capability for feature(s) in both divisions, declare the supported features inoperable, and

[RA B.3] B. Within 24 hours, place channel in trip.

[COND H] C. If required actions and associated completion times of actions A or B are not met, immediately declare associated supported feature(s) inoperable.

3. With one or more channels inoperable for ADS:

[RA F.1] A. Within one hour from discovery of loss of ADS initiation capability in both trip systems, declare ADS inoperable, and

[RA F.2] B. Within 96 hours from discovery of an inoperable channel concurrent with HPCI or RCIC inoperable, place channel in trip, and

[RA F.2] C. Within 8 days, place channel in trip.

[COND H] D. If required actions and associated completion times of actions A, B, or C are not met, immediately declare ADS inoperable.

Specification 3.3.5.2

JAFNPP

TABLE 3.2.2

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

A1

A3 add ACTION Table Note

A4 add ACTION A

See ITS: 3.3.5.1

[Function 1] NOTES FOR TABLE 3.2.2

[ACTION B] 1. With one or more channels inoperable for HPCI and/or RCIC:

[RA B.1] A. Within one hour from discovery of loss of system initiation capability, declare the RCIC inoperable, and

[RA B.2] B. Within 24 hours, place channel in trip.

[ACTION E] C. If required actions and associated completion times of actions A or B are not met, immediately declare the RCIC system inoperable.

2. With one or more channels inoperable for Core Spray and/or RHR:

   A. Within one hour from discovery of loss of initiation capability for feature(s) in both divisions, declare the supported features inoperable, and

   B. Within 24 hours, place channel in trip.

   C. If required actions and associated completion times of actions A or B are not met, immediately declare associated supported feature(s) inoperable.

See ITS: 3.3.5.1 3.3.6.1

3. With one or more channels inoperable for ADS:

   A. Within one hour from discovery of loss of ADS initiation capability in both trip systems, declare ADS inoperable, and

   B. Within 96 hours from discovery of an inoperable channel concurrent with HPCI or RCIC inoperable, place channel in trip, and

   C. Within 8 days, place channel in trip.

   D. If required actions and associated completion times of actions A, B, or C are not met, immediately declare ADS inoperable.

See ITS 3.3.5.1

Specification 3.3.6.1

A1

see ITS: 3.3.5.1
3.3.5.2

TABLE 3.2-2

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

NOTES FOR TABLE 3.2-2

1. With one or more channels inoperable for HPCI and/or RCIC:
   - A. Within one hour from discovery of loss of system initiation capability, declare the affected system inoperable, and
   - B. Within 24 hours, place channel in trip.
   - C. If required actions and associated completion times of actions A or B are not met, immediately declare the affected system inoperable.

2. With one or more channels inoperable for Core Spray and/or RHR:
   - A. Within one hour from discovery of loss of initiation capability for feature(s) in both divisions, declare the supported features inoperable, and
   - B. Within 24 hours, place channel in trip.
   - C. If required actions and associated completion times of actions A or B are not met, immediately declare associated supported feature(s) inoperable.

LAB

3. With one or more channels inoperable for ADS:
   - A. Within one hour from discovery of loss of ADS initiation capability in both trip systems, declare ADS inoperable, and
   - B. Within 96 hours from discovery of an inoperable channel concurrent with HPCI or RCIC inoperable, place channel in trip, and
   - C. Within 8 days, place channel in trip.
   - D. If required actions and associated completion times of actions A, B, or C are not met, immediately declare ADS inoperable.

see ITS: 3.3.5.1

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A1

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TABLE 3.2-2

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

See ITS: 3.3.5.2

[ACTION C]	2 A.	With one or more channels inoperable for HPCI and/or RCIC:	
[RA C.2]	B.	Within 24 hours, restore channel to operable status.	
[ACTION H]	B.	If required action and associated completion time of action A is not met, immediately declare affected system inoperable.	
[ACTION B]	A.	With one or more channels inoperable for containment spray:	
[RA B.3]	A.	Within 24 hours, place channel in trip.	
[ACTION H]	B.	If required action and associated completion time of action A is not met, immediately declare associated supported feature(s) inoperable.	
[ACTION C]	A.	With one or more channels inoperable for injection permissive and/or recirculation discharge valve permissive:	
RA C.1	A.	Within one hour from discovery of loss of initiation capability for feature(s) in both divisions, declare the supported features inoperable, and	
RA C.2	B.	Within 24 hours, restore channel to operable status.	
[ACTION H]	2 B.	If required actions and associated completion times of actions A or B are not met, immediately declare associated supported feature(s) inoperable.	

add Notes 1 and 2 to Required Action C.1

L4

Add ACTION B for functions 1.c and 2.c in MODES 4 and 5

L2

Specification 3.3.5.2

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A1

TABLE 3.2-2

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

See ITS 3.3.5.1

[Function 2]

[ACTION C] → 4. With one or more channels inoperable for HPCI and/or RCIC:

[RA C.1] → A. Within 24 hours, restore channel to operable status.

[ACTION E] B. If required action and associated completion time of action A is not met, immediately declare RCIC system inoperable.

5. With one or more channels inoperable for containment spray:

   A. Within 24 hours, place channel in trip.

   B. If required action and associated completion time of action A is not met, immediately declare associated supported feature(s) inoperable.

6. With one or more channels inoperable for injection permissive and/or recirculation discharge valve permissive:

   A. Within one hour from discovery of loss of initiation capability for feature(s) in both divisions, declare the supported features inoperable, and

   B. Within 24 hours, restore channel to operable status.

   C. If required actions and associated completion times of actions A or B are not met, immediately declare associated supported feature(s) inoperable.

See ITS: 3.3.5.1

Specification 3.3.5.1 (A1)

TABLE 3.2-2

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

[ACTION C] [RA C.2]	7.	A.	With one start timer inoperable, restore the timer to an operable status within 24 hours.
[RA. C.1]		B.	With two or more start timers inoperable, within one hour declare the associated ECCS subsystem(s) inoperable.
[ACTION H]		C.	If the required actions and associated completion times of A and B cannot be met declare the associated ECCS subsystem(s) inoperable.
	8.	With one or more channels inoperable for ADS:	
[ACTION G] [RA.G.1]		A.	Within one hour from discovery of loss of ADS initiation capability in both trip systems, declare ADS inoperable, and
[RA G.2]		B.	Within 96 hours from discovery of an inoperable channel concurrent with HPCI or RCIC inoperable, restore channel to operable status, and
[RA.G.2]		C.	Within 8 days, restore channel to operable status.
[ACTION H]		D.	If required actions and associated completion times of actions A, B, or C are not met, immediately declare ADS inoperable.
[ACTION D] [RA.D.1]	9.	With one or more channels inoperable for HPCI and/or RCIC — see JTS § 3.3.5.2 [Note to Required Action D.1] A.	Within one hour from discovery of loss of system initiation capability while suction for the affected system is aligned to the CST, declare the affected system inoperable, and
[RA.D.2]		B.	Within 24 hours, place channel in trip [RA D.2.1] or align suction for the affected system to the suppression pool [RA. D.2.2]
[ACTION A]		C.	If required actions and associated completion times of actions A or B are not met, immediately declare the affected system inoperable.

add ACTION E for Functions 1.e; 1.f; 2.g, 3.f; 3.g (M2)

Specification 3.3.5.2

A1

TABLE 3.7.2

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

7.	A.	With inoperable start timers in two or more ECCS subsystems, immediately declare the associated ECCS subsystems inoperable.
	B.	With both start timers in the same LPCI subsystem inoperable, immediately rack out the circuit breakers for the affected RHR pumps and declare that LPCI subsystem inoperable.
	C.	With one start timer inoperable, restore the timer to an operable status within 24 hours, or immediately rack out the circuit breaker for the affected pump and declare the affected pump inoperable.
8.		With one or more channels inoperable for ADS:
	A.	Within one hour from discovery of loss of ADS initiation capability in both trip systems, declare ADS inoperable, and
	B.	Within 96 hours from discovery of an inoperable channel concurrent with HPCI or RCIC inoperable, restore channel to operable status, and
	C.	Within 8 days, restore channel to operable status.
	D.	If required actions and associated completion times of actions A, B, or C are not met, immediately declare ADS inoperable.
9.		With one or more channels inoperable for HPCI and/or RCIC:
	A.	Within one hour from discovery of loss of system initiation capability while suction for the affected system is aligned to the CST, declare the affected system inoperable, and
	B.	Within 24 hours, place channel in trip or align suction for the affected system to the suppression pool.
	C.	If required actions and associated completion times of actions A or B are not met, immediately declare the affected system inoperable.

See ITS: 3.3.5.1

[Function 5] [ACTION D]

[R.A. D.1 Note]

[RA D.1]

[RA D2.1a, D.2.2] [ACTION E]

Specification 3.3.5.1 (A1)

TABLE 3.2-2

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

10. With one or more channels inoperable for 4kV Emergency Bus Undervoltage Trip Functions: (see ITS: 3.3.8.1)

    A. Within one hour, place channel in trip.

    B. If required action and associated completion time of action A is not met, immediately declare the affected Emergency Diesel Generator System inoperable.

[SR Note 2(b)] [11] When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions For Operation and required actions may be delayed for up to 6 hours provided the associated Trip Function or the redundant Trip Function maintains ECCS initiation capability.

[SR Note 2(a)] [12] When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions For Operation and required actions may be delayed for up to 6 hours.

13. The 4kV Emergency Bus Undervoltage Timers (degraded voltage LOCA, degraded voltage non-LOCA, and loss-of-voltage) initiate the following: starts the Emergency Diesel-Generators; trips the normal/reserve tie breakers and trips all 4kV motor breakers (in conjunction with 75 percent Emergency Diesel-Generator voltages); initiates diesel-generator breaker close permissive (in conjunction with 90 percent Emergency Diesel-Generator voltages) and; initiates sequential starting of vital loads in conjunction with low-low-low reactor water level or high drywell pressure.

14. A secondary voltage of 110.6 volts corresponds to approximately 93% of 4160 volts on the bus. (see ITS: 3.3.8.1)

15. A secondary voltage of 85 volts corresponds to approximately 71.5% of 4160 volts on the bus.

[16] Only ~~one trip system~~. (LA2)

(B) Amendment No. 250

Specification 3.3.5.2

(A1)

JAFNPP

TABLE 3.2.2

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

10. With one or more channels inoperable for 4kV Emergency Bus Undervoltage Trip Functions:

    A. Within one hour, place channel in trip.

    B. If required action and associated completion time of action A is not met, immediately declare the affected Emergency Diesel Generator System inoperable.

See ITS: 3.3.8.1

[SR Table Note 2] 11. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions For Operation and required actions may be delayed for up to 6 hours provided the associated Trip Function or the redundant Trip Function maintains ECCS (RCIC) initiation capability.

[SR Table Note 2] 12. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions For Operation and required actions may be delayed for up to 6 hours.

13. The 4kV Emergency Bus Undervoltage Timers (degraded voltage LOCA, degraded voltage non-LOCA, and loss-of-voltage) initiate the following: starts the Emergency Diesel-Generators; trips the normal/reserve tie breakers and trips all 4kV motor breakers (in conjunction with 75 percent Emergency Diesel-Generator voltages); initiates diesel-generator breaker close permissive (in conjunction with 90 percent Emergency Diesel-Generator voltages) and; initiates sequential starting of vital loads in conjunction with low-low-low reactor water level or high drywell pressure.

14. A secondary voltage of 110.6 volts corresponds to approximately 93% of 4160 volts on the bus.

15. A secondary voltage of 85 volts corresponds to approximately 71.5% of 4160 volts on the bus.

See ITS: 3.3.8.1

16. ~~Only one trip system.~~

LA 1

Specification 3.3.6.1 (A1)

TABLE 3.2-2

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

See ITS: 3.3.5.1 3.3.5.2

10. With one or more channels inoperable for 4kV Emergency Bus Undervoltage Trip Functions: (See ITS: 3.3.8.1)

    A. Within one hour, place channel in trip.

    B. If required action and associated completion time of action A is not met, immediately declare the affected Emergency Diesel Generator System inoperable.

11. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions For Operation and required actions may be delayed for up to 6 hours provided the associated Trip Function or the redundant Trip Function maintains ECCS initiation capability. (See ITS: 3.3.5.1 3.3.5.2)

12. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions For Operation and required actions may be delayed for up to 6 hours. (LA8)

13. The 4kV Emergency Bus Undervoltage Timers (degraded voltage LOCA, degraded voltage non-LOCA, and loss-of-voltage) initiate the following: starts the Emergency Diesel-Generators; trips the normal/reserve tie breakers and trips all 4kV motor breakers (in conjunction with 75 percent Emergency Diesel-Generator voltages); initiates diesel-generator breaker close permissive (in conjunction with 90 percent Emergency Diesel-Generator voltages) and; initiates sequential starting of vital loads in conjunction with low-low-low reactor water level or high drywell pressure.

14. A secondary voltage of 110.6 volts corresponds to approximately 93% of 4160 volts on the bus.

15. A secondary voltage of 85 volts corresponds to approximately 71.5% of 4160 volts on the bus.

(See ITS: 3.3.8.1)

16. Only one trip system. (See ITS: 3.3.5.1 3.3.5.2)

Specification 3.3.8.1

TABLE 3.2/2

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

A1

add ACTION NOTE A3

[ACTION A] 10. With one or more channels inoperable for 4kV Emergency Bus Undervoltage Trip Functions:

A. Within one hour, place channel in trip.

[ACTION B] B. If required action and associated completion time of action A is not met, immediately declare the affected Emergency Diesel Generator System inoperable.

11. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions For Operation and required actions may be delayed for up to 6 hours provided the associated Trip Function or the redundant Trip Function maintains ECCS initiation capability.

12. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions For Operation and required actions may be delayed for up to 6 hours.

13. The 4kV Emergency Bus Undervoltage Timers (degraded voltage LOCA, degraded voltage non-LOCA, and loss-of-voltage) initiate the following: starts the Emergency Diesel-Generators; trips the normal/reserve tie breakers and trips all 4kV motor breakers (in conjunction with 75 percent Emergency Diesel-Generator voltages); initiates diesel-generator breaker close permissive (in conjunction with 90 percent Emergency Diesel-Generator voltages) and; initiates sequential starting of vital loads in conjunction with low-low-low reactor water level or high drywell pressure.

14. A secondary voltage of 110.6 volts corresponds to approximately 93% of 4160 volts on the bus. LA1

15. A secondary voltage of 85 volts corresponds to approximately 71.5% of 4160 volts on the bus.

16. Only one trip system. see ITS: 3.3.5.1 3.3.5.2

see ITS: 3.3.5.1 3.3.5.2 3.3.6.1

see ITS: 3.3.5.1 3.3.5.2

Specification 3.3.2.1

A1

~~TABLE 3.2.3~~

CONTROL ROD BLOCK INSTRUMENTATION ~~REQUIREMENTS~~

LA1

Minimum No. of Operable Instrument Channels Per Trip Function (Notes 1 and 3)	Trip Function	Trip Level Setting	Total Number of Instrument Channels Provided By Design	Action (Note 2)
4	APRM Flow Referenced Neutron Flux	(Note 9)	6	A
4	APRM Neutron Flux-Start-up	≤ 12%	6	A
4	APRM Downscale	≥ 2.5 indicated on scale	6	A
2 (Note 7)	Rod Block Monitor (~~Flow Biased~~) LA5	(Note 9)	2 LA1	B
2 (Note 7)	Rod Block Monitor (Downscale)	≥ 2.5 indicated on scale	2	B
6	IRM Detector not in Start-up Position	(Note 8)	8	A
6	IRM Upscale	≤ 86.4% (108/125) of full scale	8	A
6	IRM Downscale (Note 4)	≥ 2% (2.5/125) of full scale	8	A
3	SRM Detector not in Start-up Position	(Note 5)	4	A
3 (Note 6)	SRM Upscale	≤ 10^5 counts/sec	4	A
2	Scram Discharge Instrument Volume High Water Level	≤ 26.0 gallons per instrument volume	2	C (Note 10)

R1

Function 1.a, 1.c

ACTION A, B

R1

add proposed Function 1.b, RBM Inoperable — M1

add Function 2. "Rod Worth Minimizer" — A2

add Function 3. RMS - Shutdown Position — M2

Specification 3.3.2.1 (A1)

Applicability for RBM

TABLE 3.2-3 (Cont'd)

CONTROL ROD BLOCK INSTRUMENTATION REQUIREMENTS

NOTES FOR TABLE 3.2-3

1. The trip functions shall be operable in the Startup and Run modes except as follows:

[Note (a)]

a) SRM and IRM: Startup mode only.
b) RBM: Run mode and ≥ 30% reactor power only.
c) APRM Neutron Flux-Startup: Startup mode only.
d) APRM Flow Referenced Neutron Flux: Run mode only.

(R1)

2. Actions:

Action A: If the number of operable instrument channels is:

a) one less than the required minimum number of operable instrument channels per trip function, restore the inoperable instrument channel to operable status within 7 days, or place the inoperable instrument channel in the tripped condition within the next hour.

b) two or more channels less than the required minimum number of operable instrument channels per trip function, place at least one inoperable instrument channel in the tripped condition within one hour.

(R1)

Action B: If the number of operable instrument channels is:

[Action A] [ACTION B]

a) one less than the required minimum number of operable instrument channels per trip function, verify that the reactor is not operating on a Limiting Control Rod Pattern, and within 7 days restore the inoperable instrument channel to operable status; otherwise, place the inoperable instrument channel in the tripped condition within the next hour. See Specification 3.3.B.5.

(24 hours) (M3) (L1)

[Action B]

b) two channels less than the required minimum number of operable instrument channels per trip function, place at least one inoperable instrument channel in the tripped condition within one hour. See Specification 3.3.B.5.

Action C:

If the number of operable instrument channels is less than the required minimum number of operable instrument channels per trip function, place the inoperable instrument channel in the tripped condition within 12 hours.

(R1)

add ACTION E for Reactor Mode Switch (M2)

Specification 3.3.2.1

Table 3.2-3 (Cont'd) 3.3.2.1-1

(A1)

CONTROL ROD BLOCK INSTRUMENTATION REQUIREMENTS

NOTES FOR TABLE 3.2-3 (Cont'd)

Surveillance Note 2

3. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions for Operation and required actions may be delayed for up to 6 hours provided the associated Trip Function maintains CRB initiation capability.

4. IRM downscale is bypassed when it is on its lowest range.

5. This function is bypassed when the count rate is ≥ 100 cps.

6. This SRM Function is bypassed when the IRM range switches are on range 8 or above. (R1)

(L7)

added: and no peripheral control rod selected

Note (a) Table 3.3.2.1-1

7. RBM is required when reactor power is greater than or equal to 30%. (R1)

8. This function is bypassed when the Mode Switch is placed in Run.

Function 1.a AV

9. The APRM Flow Referenced Neutron Flux and Rod Block Monitor trip level setpoint shall be less than or equal to the limit specified in the Core Operating Limits Report. (R1)

Allowable Value

10. When the reactor is subcritical and the reactor water temperature is less than 212°F, the control rod block is required to be operable only if any control rod in a control cell containing fuel is not fully inserted. (R1)

A1

JAFNPP

A2

TABLE 3.2-5

INSTRUMENTATION THAT MONITORS LEAKAGE DETECTION INSIDE THE DRYWELL

Minimum No. of Operable Instrument Channels	Instrument (1)	Action (2)
1	Equipment Drain Sump Flow Integrator	A
	and	
1	Floor Drain Sump Flow Integrator	A
	Drywell floor drain sump monitoring system	

LS

LA1

[LCO 3.4.5.a]

LA2

NOTES FOR TABLE 3.2-5

1. The two flow integrators, one for the equipment drain sump and the other for the floor drain/sump, comprise the Basic Instrument System.

A3

2. Action

   A. Refer to Specification 3.6.D.

75

Amendment No. 36

Specification 3.3.2.2

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TABLE 3.2-6

FEEDWATER PUMP TURBINE AND MAIN TURBINE TRIP INSTRUMENTATION REQUIREMENTS

Minimum Number of Operable Instrument Channels (Notes 1 & 2)	Trip Function	Trip Level Setting	Applicable Modes
3	Reactor Vessel Water Level - High	≤ 222.5 inches above TAF	Thermal Power ≥ 25% RTP

NOTES FOR TABLE 3.2-6

1. There shall be three operable instrument channels, except as provided for below:

a. With one less than the required minimum number of operable instrument channels, either restore the inoperable instrument channel to operable status, or place the inoperable instrument channel in the tripped condition, within 7 days. Otherwise, reduce reactor power to less than 25% rated thermal power within the next 4 hours.

b. With two or more channels less than the required minimum number of operable instrument channels, restore the feedwater pump turbine and main turbine trip capability within 2 hours. Otherwise, reduce reactor power to less than 25% rated thermal power within the next 4 hours.

2. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions for Operation and required actions may be delayed for up to 6 hours provided the associated Trip Function maintains feedwater pump turbine and main turbine trip capability.

add ACTIONS NOTE

add Required Action C.1 and associated Note

TSTF-297

Specification 3.3.4.1

A1

TABLE 3.2-7

AB

ATWS RECIRCULATION PUMP TRIP INSTRUMENTATION REQUIREMENTS

RAI 3.3.4.1-1

Minimum Number of Operable Instrument Channels Per Trip System (Notes 1 & 2)	Trip Function	Allowable Value / [SR 3.3.4.1.4] Trip Level Setting	[Applicability] Applicable Modes
[LCO 3.3.4.1.b] 2	Reactor Pressure - High	≤ ~~1120~~ 1118 psig, or ≤ ~~1135~~ 1153 psig (Note 3)	Run [MODE 1]
[LCO 3.3.4.1.a] 2	Reactor Water Level - Low Low	≥ 105.4 in. ~~above TAF~~	Run [MODE 1]

A7 M2 LA1

A AMD 264

AMD 264

Specification 3.3.4.1

JAFNPP

TABLE 3.2-7 (cont'd)

ATWS RECIRCULATION PUMP TRIP INSTRUMENTATION REQUIREMENTS

NOTES FOR TABLE 3.2-7

1. There shall be two operable or tripped trip systems for each Trip Function, except as provided for below:

   a. For each Trip Function with one less than the required minimum number of operable instrument channels, place the inoperable instrument channel and/or its associated trip system in the tripped condition* within 12 hours. Otherwise, place the reactor in the start-up/hot standby mode within the next 6 hours.

   b. For each Trip Function with two or more channels less than the required minimum number of operable instrument channels:

      1) Within one hour, verify sufficient instrument channels remain operable or tripped* to maintain trip capability in the Trip Function, and

      2) Within 6 hours, place the inoperable instrument channel(s) in one trip system and/or that trip system** in the tripped condition*, and

      3) Within 24 hours, restore the inoperable instrument channel in the other trip system to an operable status.

   If any of these three conditions cannot be satisfied, place the reactor in the start-up/hot standby mode within the next 6 hours.

   * An inoperable instrument channel or trip system need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, if the inoperable instrument channel is not restored to operable status within the required time, place the reactor in the start-up/hot standby mode within the next 6 hours.

   ** This action applies to that trip system with the greatest number of inoperable instrument channels. If both systems have the same number of inoperable instrument channels, the ACTION can be applied to either trip system.

2. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions for Operation and required actions may be delayed for up to 6 hours provided the associated Trip Function maintains ATWS RPT initiation capability.

Specification: 3.3.4.1

A1

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TABLE 3.2-7 (cont'd)

A8

ATWS RECIRCULATION PUMP TRIP INSTRUMENTATION REQUIREMENTS

NOTES FOR TABLE 3.2-7 (cont.)

Allowable Value — A7

1153 — M2

[SR 3.3.4.1.4] 3. The ATWS Reactor Pressure High Recirculation Pump trip setpoint shall be ≤ 1155 psig when either zero or one SRVs are out of service. The setpoint shall be ≤ 1120 psig when two or more SRVs are out of service.

F

1118 — M2

≤ 10 Safety/Relief Valves (SRVs) OPERABLE

≥ 10 SRVs OPERABLE — A9

F

RAI 3.3.4.1-6

Specification 3.3.4.1

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Specification 3.3.3.1

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[3.3.3.1-1]

TABLE 3.3-8

A1

ACCIDENT MONITORING INSTRUMENTATION

Function / Instrument	No. of Channels Provided by Design	Minimum No. of Operable Channels Required	[Applicability] Mode in Which Instrument Must be Operable	[proposed Required Action D.1 not satisfied] Action
1. Stack High Range Effluent Monitor (17RM-53A) (17RM-53B)	2	1	Note H	Note B
2. Turbine Building Vent High Range Effluent Monitor (17RM-434A) (17RM-434B)	2	1	Note H	Note B
3. Radwaste Building Vent High Range Effluent Monitor (17RM-463A) (17RM-463B)	2	1	Note H	Note B
[5] 4. Containment High Range Radiation Monitor (27RM-104A) (27RM-104B)	2	1	Note H	Note A
[4.a] 5. Drywell Pressure (narrow range) (27PI-115A1 or 27PR-115A1) (27PI-115B1 or 27PR-115B1)	2	1	Note J	Note A
[4.b] 6. Drywell Pressure (wide range) (27PI-115A2 or 27PR-115A2) (27PI-115B2 or 27PR-115B2)	2	1	Note J	Note A
[6] 7. Drywell Temperature (16-1TR-107) (16-1TR-108)	2	1	Note J	Note A

• See ITS 3.3.6.1

LA1

A3 moved to ITS 3.3.6.1

• At less than or equal to 450 R/hr, closes vent and purge valves

L1

M1

MODES 1 and 2

L2

MODES 1, 2

L4

add proposed ACTION F

proposed ACTION E

M2

R1

A5

Table 3.3.6.1-1
Primary Containment Isolation Instrumentation

Specification 3.3.C.1 (A1)

TABLE 3.2-8

ACCIDENT MONITORING INSTRUMENTATION

Required Channels per Trip System (M10)

	Instrument (LA1)	No. of Channels Provided by Design	Minimum No. of Operable Channels Required	Mode in Which Instrument Must be Operable	Action
1.	Stack High Range Effluent Monitor (17RM-53A) (17RM-53B)	2	1	Note H	Note B
2.	Turbine Building Vent High Range Effluent Monitor (17RM-434A) (17RM-434B)	2	1	Note H	Note B
3.	Radwaste Building Vent High Range Effluent Monitor (17RM-463A) (17RM-463B)	2	1	Note H	Note B
4.	Containment High Range Radiation Monitor* (27RM-104A) (27RM-104B) (L2)	~~2~~ (LA1)	1	[Applicability] Modes 1, 2 and ~~Note B~~	Note A [F] (M10)
5.	Drywell Pressure (narrow range) (27PI-115A1 or 27PR-115A1) (27PI-115B1 or 27PR-115B1)	2	1	Note J	Note A
6.	Drywell Pressure (wide range) (27PI-115A2 or 27PR-115A2) (27PI-115B2 or 27PR-115B2)	2	1	Note J	Note A
7.	Drywell Temperature (16-1TR-107) (16-1TR-108)	2	1	Note J	Note A

See JTS 3.3.3.1

[Function 2.c]

[Function 2.c Allowable Value]

* At less than or equal to 450 R/hr, closes vent and purge valves (LA3)

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Specification 3.3.3.1

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[3.3.3.1-1]

TABLE 3.2-8

ACCIDENT MONITORING INSTRUMENTATION

		Instrument	No. of Channels Provided by Design	Minimum No. of Operable Channels Required	Applicability: Mode in Which Instrument Must be Operable	Action: Proposed Required Action D.1 not satisfied
[3]	8.	Torus Water Level (wide range) (23LI-202A or 23LR-202A/203A) (23LI-202B or 23LR-202B/203B)	2	1	Note J	Note A
[10]	9.	Torus Bulk Water Temperature (16-1TI-131A or 16-1TR-131A) (16-1TI-131B or 16-1TR-131B)	2	1	Note J	Note A
[9]	10.	Torus Pressure (27PR-101A) (27PR-101B1)	2	1	Note J	Note A
[8]	11.	Primary Containment Hydrogen/Oxygen Concentration (27PCR-101A) (27PCR-101B)	2	1	Note J, K	Note F
[1]	12.	Reactor Vessel Pressure (06PI-61A or 06PR-61A) (06PI-61B or 06PR-61B)	2	1	Note J	Note A
[2.a]	13.	Reactor Water Level (fuel zone) (02-3LI-091) (02-3LR-098)	2	1	Note J	Note A
[2.b]	14.	Reactor Water Level (wide range) (02-3LI-85A) (02-3LR-85B)	2	1	Note J	Note A

RAI 3.3.3.1-1
RAI 3.3.3.1-2

RAI 3.3.3.1-10
R 8/12/

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TABLE 3.2-8 (continued)

ACCIDENT MONITORING INSTRUMENTATION

Function	Instrument	No. of Channels Provided by Design	Minimum No. of Operable Channels Required	Mode in Which Instrument Must be Operable	Action
15.	Core Spray Flow loop A (14FI-50A) loop B (14FI-50B)	1 per loop	1 per loop	Note J	Note A
16.	Core Spray discharge pressure loop A (14PI-48A) loop B (14PI-48B)	1 per loop	1 per loop	Note J	Note A
17.	LPCI (RHR) Flow loop A (10FI-133A) (10FR-143 - red pen) loop B (10FI-133B) (10FR-143 - blue pen)	2 per loop	1 per loop	Note J	Note A
18.	RHR Service Water Flow loop A (10FI-132A) loop B (10FI-132B)	1 per loop	1 per loop	Note J	Note A
19.	Safety/Relief Valve Position Indicator (See Note C)	2	1	Note J	Notes D, E
20.	Torus Water Level (narrow range) (23LI-201A or 27R-101 - red pen or EPIC A-1258) (EPIC A-1260) (See Note G)	2	1	Note J	Note B
21.	Drywell-Torus Differential Pressure (16-1DPR-200 or EPIC A-3554) (EPIC A-3551) (See Note G)	2	1	Note J	Note B

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[3.3.3.1-1]

TABLE 3.2-8 (Cont'd)

ACCIDENT MONITORING INSTRUMENTATION

NOTES FOR TABLE 3.2-8

[ACTION A]

A. With the number of operable channels less than the required minimum, either restore the inoperable channels to operable status within 30 days, or be in a cold condition within the next 24 hours.

B. With the number of OPERABLE channels less than required by the minimum channels OPERABLE requirements, initiate an alternate method of monitoring the appropriate parameter(s) within 72 hours and: (1) either restore the inoperable channel(s) to OPERABLE status within 7 days of the event, or (2) prepare and submit a Special Report to the Commission within 14 days following the event outlining the cause of the inoperability, the action taken, and the plans and schedule for restoring the system to OPERABLE status.

C. Each Safety/Relief Valve is equipped with two acoustical detectors, one of which is in service. Each SRV also has a backup thermocouple detector. In the event that a thermocouple is inoperable, SRV performance shall be monitored daily with the associated in service acoustical detector.

D. From and after the date that both of the acoustical detectors are inoperable, continued operation is permissible until the next outage in which a primary containment entry is made provided that the thermocouple is operable. Both acoustical detectors shall be made operable prior to restart.

E. In the event that both primary (acoustical detectors) and secondary (thermocouple) indications of this parameter for any one valve are disabled and neither indication can be restored in forty-eight (48) hours, the reactor shall be in a Hot Shutdown condition within twelve (12) hours and in a Cold Shutdown within the next twenty-four (24) hours.

[ACTION A]

F. With the number of operable channels less than the required minimum, continued reactor operation is permissible for the following 30 days provided at least once each 24 hours, either the appropriate parameter(s) is monitored and logged using 27PCX-101A/B, or an appropriate grab sample is obtained and analyzed. If this condition can not be met, be in the Hot Shutdown mode within the next 12 hours.

[ACTION E]

G. This parameter and associated instrumentation are not part of post-accident monitoring.

H. This instrument shall be operable in the Run, Startup/Hot Standby, and Hot Shutdown modes.

J. This instrument shall be operable in the Run and Startup/Hot Standby modes. (MODE 1, 2)

K. Primary containment atmosphere shall be continuously monitored for hydrogen and oxygen when in the Run and Startup/Hot Standby modes, except when the Post-Accident Sampling System (PASS) is to be operated. When the PASS is to be operated, the containment atmosphere monitoring systems may be isolated for a period not to exceed 3 hours in a 24-hour period.

[Co note] [Applicability]

add proposed Note 1 to ACTIONS

add proposed Note 2 to ACTIONS

add ACTION E MODE 3 IN 12 hours

add ACTION F for containment Radiation

add ACTIONS A, B, C, D, E for Function 7

add ACTIONS A, B, C, D, E for Function 11

add ACTION B, for ITS 3.3.3.1 Functions 1-6 and 8-10

add ACTION C

add ACTION D for Functions 1-10

Specification 3.3.3.1

RAI 3.3.3.1-4

RAI 3.3.3.1-9 BSI 20

RAI 3.3.3.1-1 and BSI 20 and 3.3.3.1-2

RAI 3.3.3.1-9 & 333.H BSI-21

L3 A4 A1 M2 L4 L2 R1 M1 L2 A2 M1 A5 M3 M4

TSTF 306 R2

add ACTION Note 1 — L18

add ACTION NOTE 2 — A3

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Table 3.3.6.1-1 Primary Containment Isolation Instrumentation — Specifications 3.3.6.1 — A1

TABLE 3.2.B (Cont'd)

ACCIDENT MONITORING INSTRUMENTATION

M10

NOTES FOR TABLE 3.2.B

A. With the number of operable channels less than the required minimum, either restore the inoperable channels to operable status within 30 days, or be in a cold condition within the next 24 hours.

B. With the number of OPERABLE channels less than required by the minimum channels OPERABLE requirements, initiate an alternate method of monitoring the appropriate parameter(s) within 72 hours and: (1) either restore the inoperable channel(s) to OPERABLE status within 7 days of the event, or (2) prepare and submit a Special Report to the Commission within 14 days following the event outlining the cause of the inoperability, the action taken, and the plans and schedule for restoring the system to OPERABLE status.

See ITS: 3.3.3.1

C. Each Safety/Relief Valve is equipped with two acoustical detectors, one of which is in service. Each SRV also has a backup thermocouple detector. In the event that a thermocouple is inoperable, SRV performance shall be monitored daily with the associated in service acoustical detector.

D. From and after the date that both of the acoustical detectors are inoperable, continued operation is permissible until the next outage in which a primary containment entry is made provided that the thermocouple is operable. Both acoustical detectors shall be made operable prior to restart.

E. In the event that both primary (acoustical detectors) and secondary (thermocouple) indications of this parameter for any one valve are disabled and neither indication can be restored in forty-eight (48) hours, the reactor shall be in a Hot Shutdown condition within twelve (12) hours and in a Cold Shutdown within the next twenty-four (24) hours.

F. With the number of operable channels less than the required minimum, continued reactor operation is permissible for the following 30 days provided at least once each 24 hours, either the appropriate parameter(s) is monitored and logged using 27PCX-101A, B, or an appropriate grab sample is obtained and analyzed. If this condition can not be met, be in the Hot Shutdown mode within the next 12 hours.

G. This parameter and associated instrumentation are not part of post-accident monitoring.

[Applicability Function 2.c] H. This instrument shall be operable in the Run, Startup/Hot Standby, and Hot Shutdown modes. — Modes 1, 2 and 3

J. This instrument shall be operable in the Run and Startup/Hot Standby modes.

K. Primary containment atmosphere shall be continuously monitored for hydrogen and oxygen when in the Run and Startup/Hot Standby modes, except when the Post-Accident Sampling System (PASS) is to be operated. When the PASS is to be operated, the containment atmosphere monitoring systems may be isolated for a period not to exceed 3 hours in a 24-hour period.

See ITS 3.3.3.1

M10

add ACTIONS A, B, C and F

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Specification 3.3.3.2 (A1)

TABLE 3.2-10

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS (A4)

(Refer to Notes on Page 77o)

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	INSTRUMENT CHECK [SR 3.3.3.2.1]	INSTRUMENT CALIBRATION [SR 3.3.3.2.3]	FUNCTIONAL TEST [SR 3.3.3.2.2] (L2)
1.	RHR Service Water Flow (Loop B) (10FI-134)	25RSP	M - 1	R - 3	NA
2.	RHR Service Water Pump Control (10P-1B)	25RSP	NA	NA	R - 2
3.	RHR Service Water Heat Exchanger Outlet Valve Control (10MOV-89B)	25RSP	NA	NA	R - 2
4.	RHR Service Water to RHR Cross-Tie Valve Control (10MOV-148B) (LA2)	25ASP-1	NA	NA	R - 2
5.	RHR Service Water to RHR Cross-Tie Valve Control (10MOV-149B)	25ASP-1	NA	NA	R - 2
6.	RHR Flow (Loop B) (10FI-133)	25RSP	M - 1	R - 3	NA
7.	RHR Discharge Pressure (Pump D) (10PI-279)	25RSP	M - 1	R - 3	NA
8.	RHR Pump Control (10P-3D)	25RSP	NA	NA	R - 2
9.	RHR Heat Exchanger Bypass Valve Control (10MOV-66B)	25RSP	NA	NA	R - 2

Specification 3.3.3.2 A1

TABLE 3.2-10 (cont'd) LA2

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

(Refer to Notes on Page 77o)

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	~~INSTRUMENT CHECK~~	~~INSTRUMENT CALIBRATION~~	FUNCTIONAL TEST SR 3.3.3.2.2 L2
10.	RHR Inboard Injection Valve Control (10MOV-25B)	25RSP	~~NA~~	~~NA~~	R - 2
11.	RHR Heat Exchanger Steam Inlet Valve Control (10MOV-70B)	25ASP-1	~~NA~~	~~NA~~	R - 2
12.	RHR Heat Exchanger Vent Valve Control (10MOV-166B)	25ASP-1	~~NA~~	~~NA~~	R - 2
13.	RHR Heat Exchanger Outlet Valve Control (10MOV-12B)	25ASP-1	~~NA~~	~~NA~~	R - 2
14.	RHR Pump D Torus Suction Valve Control (10MOV-13D)	25ASP-2	~~NA~~	~~NA~~	R - 2
15.	RHR Pump D Shutdown Cooling Suction Valve Control (10MOV-15D)	25ASP-2	~~NA~~	~~NA~~	R - 2
16.	RHR Pump B Minimum Flow Valve Control (10MOV-16B)	25ASP-2	~~NA~~	~~NA~~	R - 2
17.	RHR Heat Exchanger Inlet Valve Control (10MOV-65B)	25ASP-2	~~NA~~	~~NA~~	R - 2
18.	RHR Outboard Injection Valve Control (10MOV-27B)	25ASP-2	~~NA~~	~~NA~~	R - 2

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (cont'd) (LA2)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

(Refer to Notes on Page 77o)

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	~~INSTRUMENT CHECK~~	~~INSTRUMENT CALIBRATION~~	FUNCTIONAL TEST (L2) SR 3.3.3.2.2
19.	RHR Heat Exchanger Discharge to Torus Valve Control (10MOV-21B)	25ASP-2	~~NA~~	~~NA~~	R – 2
20.	Torus Cooling Isolation Valve Control (10MOV-39B)	25ASP-2	~~NA~~	~~NA~~	R – 2
21.	DW Spray Outboard Valve Control (10MOV-26B)	25ASP-3	~~NA~~	~~NA~~	R – 2
22.	ADS & Safety Relief Valve A Control (02RV-71A)	02ADS-71	~~NA~~	~~NA~~	R – 2
23.	ADS & Safety Relief Valve B Control (02RV-71B)	02ADS-71	~~NA~~	~~NA~~	R – 2
24.	ADS & Safety Relief Valve C Control (02RV-71C)	02ADS-71	~~NA~~	~~NA~~	R – 2
25.	ADS & Safety Relief Valve D Control (02RV-71D)	02ADS-71	~~NA~~	~~NA~~	R – 2
26.	ADS & Safety Relief Valve E Control (02RV-71E)	02ADS-71	~~NA~~	~~NA~~	R – 2
27.	ADS & Safety Relief Valve G Control (02RV-71G)	02ADS-71	~~NA~~	~~NA~~	R – 2

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (cont'd) (LA2)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

(Refer to Notes on Page 77o)

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	INSTRUMENT CHECK [SR 3.3.3.2.1]	INSTRUMENT CALIBRATION [SR 3.3.3.2.3]	FUNCTIONAL TEST [SR 3.3.3.2.2] (L2)
28.	ADS & Safety Relief Valve H Control (02RV-71H)	02ADS-71	NA (A4)	NA	R – 2
29.	Safety Relief Valve F Control (02RV-71F)	02ADS-71	NA	NA	R – 2
30.	Safety Relief Valve J Control (02RV-71J)	02ADS-71	NA	NA	R – 2
31.	Safety Relief Valve K Control (02RV-71K)	02ADS-71	NA	NA	R – 2
32.	Safety Relief Valve L Control (02RV-71L)	02ADS-71	NA	NA	R – 2
33.	Main Steam Line Drain Outboard Isolation Valve Control (29MOV-77)	25ASP-2	NA	NA	R – 2
34.	Drywell Temperature (68TI-115)	25RSP	M – 1	R – 3	NA
35.	Torus Water Temperature (27TI-101)	25RSP	M – 1	R – 3	NA
36.	Torus Water Level (23LI-204)	25RSP	M – 1	R – 3	NA

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (cont'd) (LA2)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

(Refer to Notes on Page 77o)

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	INSTRUMENT CHECK [SR 3.3.3.2.1]	INSTRUMENT CALIBRATION [SR 3.3.3.2.3]	FUNCTIONAL TEST [SR 3.3.3.2.2] (L2)
37.	Reactor Vessel Pressure (02-3PI-60B)	Rack 25-6	M – 1 (A4)	R	NA
38.	Reactor Vessel Water Level (02-3LI-58A)	Rack 25-6	M – 1	R	NA
39.	Reactor Vessel Water Level (02-3LI-93)	Rack 25-51	M – 1	R	NA
40.	HPCI Steam Supply Outboard Isolation Valve Control (23MOV-16)	25RSP	NA – 1	NA	R – 2
41.	HPCI Outboard Isolation Bypass Valve Control (23MOV-60)	25ASP-2	NA	NA	R – 2
42.	HPCI Minimum Flow Valve Control (23MOV-25)	25ASP-2	NA	NA	R – 2
43.	CAD B Train Inlet Valve Control (27AOV-126B)	25RSP	NA	NA	R – 2
44.	Nitrogen Instrument Header Isolation Valve Control (27AOV-129B)	25RSP	NA	NA	R – 2
45.	Reactor Water Cleanup Outboard Isolation Valve Control (12MOV-18)	25ASP-2	NA	NA	R – 2

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (cont'd)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

(Refer to Notes on Page 77o)

(LA2)

INSTRUMENT OR CONTROL	PANEL OR LOCATION	INSTRUMENT CHECK	INSTRUMENT CALIBRATION	FUNCTIONAL TEST [SR 3.3.3.2.2] (L2)
46. Emergency Service Water Pump B Control (46P-2B)	25ASP-3	NA	NA	R-2
47. ESW Loop B Supply Header Isolation Valve Control (46MOV-101B)	25ASP-3	NA	NA	R-2
48. ESW Pump B Test Valve Control (46MOV-102B)	25ASP-3	NA	NA	R-2
49. Bus 11600 Supply Breaker Control (71-11602)	25RSP	NA	NA	R-2
50. EDG B & EDG D Tie Breaker Control (71-10604)	25ASP-3	NA	NA	R-2
51. Bus 10400-10600 Tie Breaker Control (71-10614)	25ASP-3	NA	NA	R-2
52. Unit Substation L16 & L26 Feeder Breaker Control (71-10660)	25ASP-3	NA	NA	R-2
53. Bus 12600 Supply Breaker Control (71-12602)	25ASP-3	NA	NA	R-2
54. Breaker 71-10614 Synchronizing Check Control	25ASP-3	NA	NA	R-2
55. EDG B Control Room Metering Check Control	25ASP-3	NA	NA	R-2

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (cont'd)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS (LA2)

(Refer to Notes on Page 77a)

INSTRUMENT OR CONTROL		PANEL OR LOCATION	INSTRUMENT CHECK [SR 3.3.3.2.1]	INSTRUMENT CALIBRATION [SR 3.3.3.2.3]	FUNCTIONAL TEST [SR 3.3.3.2.2] (L2)
56.	EDG B Engine Start/Stop Control	25ASP-3	NA (A4)	NA	R-2
57.	EDG D Control Room Metering Check Control	25ASP-3	NA	NA	R-2
58.	EDG D Engine Start/Stop Control	25ASP-3	NA	NA	R-2
59.	EDG B Governor Switch	93EGP-B	NA	NA	R-2
60.	EDG B Synchronizing Switch	93EGP-B	NA	NA	R-2
61.	EDG B Load Breaker Control (71-10802)	93EGP-B	NA	NA	R-2
62.	EDG B Motor Control	93EGP-B	NA	NA	R-2
63.	EDG B Frequency Meter (93FM-1B)	93EGP-B	NA	R-3	NA
64.	EDG B Voltage Control	93EGP-B	NA	NA	R-2
65.	EDG B Emergency Bus Meter (71VM-600-1B)	93EGP-B	M-1	R-3	NA
66.	EDG B Incoming Bus Meter (93VM-12B)	93EGP-B	NA	R-3	NA
67.	EDG B Running Bus Meter (93VM-11B)	93EGP-B	NA	R-3	NA
68.	EDG D Governor Switch	93EGP-D	NA	NA	R-2
69.	EDG D Synchronizing Switch	93EGP-D	NA	NA	R-2

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (cont'd) (A2)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

(Refer to Notes on Page 77o)

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	INSTRUMENT CHECK [SR 3.3.3.2.1] (A4)	INSTRUMENT CALIBRATION [SR 3.3.3.2.3]	FUNCTIONAL TEST [SR 3.3.3.2.2] (L2)
70.	EDG D Load Breaker Control (71-10612)	93EGP-D	NA	NA	R-2
71.	EDG D Motor Control	93EGP-D	NA	NA	R-2
72.	EDG D Frequency Meter (93FM-1D)	93EGP-D	NA	R-3	NA
73.	EDG D Voltage Control	93EGP-D	NA	NA	R-2
74.	EDG D Emergency Bus Meter (71VM-600-1D)	93EGP-D	M	R-3	NA
75.	EDG D Incoming Bus Meter (93VM-12D)	93EGP-D	NA	R-3	NA
76.	EDG D Running Bus Meter (93VM-11D)	93EGP-D	NA	R-3	NA
77.	Reactor Head Vent Isolation Switch (02AOV-17)	25RSP	NA	NA	R-2
78.	Outboard MSIV A Isolation Switch (29AOV-86A)	25ASP-4	NA	NA	R-2
79.	Outboard MSIV B Isolation Switch (29AOV-86B)	25ASP-4	NA	NA	R-2
80.	Outboard MSIV C Isolation Switch (29AOV-86C)	25ASP-4	NA	NA	R-2

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (cont'd) (LA2)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

(Refer to Notes on Page 77o)

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	~~INSTRUMENT CHECK~~	~~INSTRUMENT CALIBRATION~~	FUNCTIONAL TEST (LZ) LSR 3.3.3.2.2
81.	Outboard MSIV D Isolation Switch (29AOV-86D)	25ASP-4	NA	NA	R-2
82.	East Crescent Area Unit Cooler B,D,F (66UC-22B, 22D, 22F) Isolation Switch	66HV-3B	NA	NA	R-2
83.	East Crescent Area Unit Cooler H,K (66UC-22H, 22K) Isolation Switch	66HV-3B	NA	NA	R-2
84.	ADS & Safety Relief Valve A Isolation Switch (02RV-71A)	25ASP-5	NA	NA	R-2
85.	ADS & Safety Relief Valve B Isolation Switch (02RV-71B)	25ASP-5	NA	NA	R-2
86.	ADS & Safety Relief Valve C Isolation Switch (02RV-71C)	25ASP-5	NA	NA	R-2
87.	ADS & Safety Relief Valve D Isolation Switch (02RV-71D)	25ASP-5	NA	NA	R-2
88.	ADS & Safety Relief Valve E Isolation Switch (02RV-71E)	25ASP-5	NA	NA	R-2
89.	Safety Relief Valve F Isolation Switch (02RV-71F)	25ASP-5	NA	NA	R-2

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (cont'd) (LA2)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	~~INSTRUMENT CHECK~~	~~INSTRUMENT CALIBRATION~~	FUNCTIONAL TEST [SR 3.3.3.2.2] (LZ)
90.	ADS & Safety Relief Valve G Isolation Switch (02RV-71G)	25ASP-5	NA	NA	R-2
91.	ADS & Safety Relief Valve H Isolation Switch (02RV-71H)	25ASP-5	NA	NA	R-2
92.	Safety Relief Valve J Isolation Switch (02RV-71J)	25ASP-5	NA	NA	R-2
93.	Safety Relief Valve K Isolation Switch (02RV-71K)	25ASP-5	NA	NA	R-2
94.	Safety Relief Valve L Isolation Switch (02RV-71L)	25ASP-5	NA	NA	R-2

NOTES FOR TABLE 3.2-10

1. Minimum required number of divisions for all instruments and controls listed is 1. (LA2)