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TRM2 - TECHNICAL REQUIREMENTS MANUAL UNIT 2

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Issue Date

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- 3.3 Instrumentation
- 3.3.6 TRM Isolation Actuation Instrumentation

TRO 3.3.6

The TRM containment isolation instrumentation for each Function in

Table 3.3.6-1 shall be OPERABLE.

APPLICABILITY: As specified in Table 3.3.6-1

Δ	^⁻	П	Ю	NI	C
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-----NOTES-------

- Penetration flow paths isolated to comply with Action C may be unisolated intermittently under administrative controls.
- 2. Separate Condition entry is allowed for each channel.

	CONDITION		REQUIRED ACTION	COMPLETION TIME
A.	One or more required channels inoperable	A.1	Place channel in trip.	12 hours for Function 2.a  AND 24 hours for Functions other than Function 2.a
B.	One or more Functions with isolation capability not maintained.	B.1	Restore isolation capability.	1 hour
C.	Required Action and associated Completion Time of Condition A or B not met.	C.1	Initiate appropriate compensatory measures for the degraded condition.	24 hours

#### TECHNICAL REQUIREMENT SURVEILLANCE

- -----NOTES------1. Refer to Table 3.3.6-1 to determine which TRSs apply for each TRM Isolation Actuation Instrumentation Function.
- 2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated function maintains isolation capability.

	SURVEILLANCE	FREQUENCY
TRS 3.3.6.1	Perform CHANNEL CHECK	12 hours
TRS 3.3.6.2	Perform CHANNEL FUNCTIONAL TEST	92 days
TRS 3.3.6.3	Perform CHANNEL CALIBRATION	92 days
TRS 3.3.6.4	Perform CHANNEL CALIBRATION	24 months
TRS 3.3.6.5	Perform LOGIC SYSTEM FUNCTIONAL TEST	24 months
TRS 3.3.6.6	Perform RESPONSE TIME TEST	24 months on a staggered test basis

### TABLE 3.3.6-1 (Page 1 of 2) PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION

	•				
	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1.	Main Steam Line Isolation				
	<ul> <li>a. Turbine Building         Main Steam Line         Tunnel Temperature         - High</li> </ul>	1,2,3	2	TRS 3.3.6.2 TRS 3.3.6.3 TRS 3.3.6.5	≤ 200°F
2.	Primary Containment Isolation				
	a. Main Steam Line Radiation - High High	1,2,3	2	TRS 3.3.6.1 TRS 3.3.6.2 TRS 3.3.6.4 TRS 3.3.6.5 TRS 3.3.6.6 <sup>(a)</sup>	≤ 21 x full power background without hydrogen injection
3.	Shutdown Cooling System Isolation (b)				
	a. RHR Flow - High	3,4,5	1 <sup>(©)</sup>	TRS 3.3.6.1 TRS 3.3.6.2 TRS 3.3.6.4 TRS 3.3.6.5	≤ 26,000 gpm

<sup>(</sup>a) Radiation detectors are exempt from response time testing.

<sup>(</sup>b) Not required when the penetration is isolated from the reactor vessel via manual isolation valve, blind flange, or deactivated auto isolation valve.

<sup>(</sup>c) Only one trip system required in MODES 4 and 5 when RHR Shutdown Cooling System integrity maintained. System integrity is maintained provided the piping is intact and no maintenance is being performed that has the potential for draining the reactor vessel through the system.

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3.6 Containment

3.6.2 Suppression Chamber-to-Drywell Vacuum Breaker Position Indication

TRO 3.6.2 The Suppression Chamber-to-Drywell Vacuum Breaker Position Indication shall be OPERABLE

APPLICABILITY: MODES 1, 2, and 3

ACTIONS
NOTE
Separate condition entry is allowed for each instrument.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more position indicators of any suppression chamber - drywell vacuum breaker inoperable	A.1.1 Verify that the associated suppression chamber – drywell vacuum breaker is closed.  OR	2 hours  AND  Once per 12 hours thereafter
	A.1.2 Enter CONDITION B of LCO 3.6.1.6	Immediately
	AND	(continued)

3.6.2

#### ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
CONDITION	A.2 Restore the suppression chamber – drywell vacuum breaker indication to OPERABLE status.	72 hours  OR  At the next outage with containment entry, not to exceed the next refueling outage for inaccessible containment components.
		AND
•		Initiate a CR for tracking and trending.

#### TECHNICAL REQUIREMENT SURVEILLANCE

	SURVEILLANCE	FREQUENCY
TRS 3.6.2.1	Observe expected actuation of both valve position during the Technical Specification Functional cycling.	As required by SR 3.6.1.6.2
TRS 3.6.2.2	Perform a CHANNEL CALIBRATION on each vacuum breaker position indicator.	24 months

#### 3.7 Plant Systems

#### 3.7.10 Spent Fuel Storage Pools (SFSPs)

- TRO 3.7.10 The following conditions shall be met when the Unit 1 and Unit 2 SFSPs are not cross-connected through the Cask Storage Pit.
  - a. The Unit 2 SFSP water temperature is less than or equal to 115 °F.
  - b. Both subsystems of the ESW system must have at least one pump and the respective flow path to the Spent Fuel Storage Pool OPERABLE.
  - c. One RHR Fuel Pool Cooling subsystem must be OPERABLE. (Cannot be the same set of equipment used to meet item d.)
  - d. RHR must have one subsystem of Suppression Pool Cooling OPERABLE. (Cannot be the same set of equipment used to meet item c.)
  - e. Zone II is capable of being aligned to the Recirculation Plenum.

APPLICABILITY:

MODES 1, 2, 3, and 4 when the analyzed nominal decay heat in one SFSP is  $\leq 5.1 \times 10^6$  BTU/hr concurrent with the analyzed nominal decay heat in the other SFSP  $\leq 4.0 \times 10^6$  BTU/hr.

#### **ACTIONS**

CONDITION		REQUIRED ACTION		COMPLETION TIME
Α.	Fuel pool water temperature > 115 °F.	A.1	Restore the temperature ≤ 115 °F.	12 hours
В.	Less than two subsystems of ESW with at least one pump or the respective flow path to the Spent Fuel Storage Pool OPERABLE.	B.1	Restore two subsystems of ESW with at least one pump and the respective flow path to the Spent Fuel Storage Pool to OPERABLE status.	48 hours
C.	No RHR Fuel Pool Cooling subsystem's OPERABLE.	C.1	Restore one subsystem to OPERABLE status.	7 days

(continued)

#### ACTIONS (continued)

CONDITION		REQUIRED ACTION		COMPLETION TIME	
D.	No RHR Suppression Pool Cooling subsystem's OPERABLE.	D.1	Restore one subsystem to OPERABLE status.	7 days	
E.	Zone II not capable of being aligned to the Recirculation plenum.	E.1	Restore alignment capability.	7 days	
F.	Required Actions and associated Completion Times not met.	F.1	Initiate actions to cross- connect the Unit 1 and Unit 2 Spent Fuel Storage Pools through the Cask Storage Pit.	Immediately	

#### TECHNICAL REQUIREMENT SURVEILLANCE

	SURVEILLANCE	FREQUENCY
TRS 3.7.10.1	Verify the fuel pool temperature is less than or equal to 115 °F.	24 hours
TRS 3.7.10.2	Verify both subsystems of ESW have at least one pump and the respective flow path to the Spent Fuel Storage Pool OPERABLE.	Once within 12 hours after the SFSP is isolated from the Cask Storage Pit
		AND
		Once per 24 hours thereafter
TRS 3.7.10.3	Verify that an RHR Fuel Pool Cooling subsystem is OPERABLE.	Once within 12 hours after the SFSP is isolated from the Cask Storage Pit
		AND
		Once per 24 hours thereafter
		(continue

### TECHNICAL REQUIREMENT SURVEILLANCE (continued)

	SURVEILLANCE	FREQUENCY
TRS 3.7.10.4	Verify that RHR has one subsystem of Suppression Pool Cooling OPERABLE.	Once within 12 hours after the SFSP is isolated from the Cask Storage Pit AND
		Once per 24 hours thereafter
TRS 3.7.10.5	Verify that Zone II is capable of being aligned to the Recirculation Plenum.	Once within 12 hours after the SFSP is isolated from the Cask Storage Pit AND Once per 24 hours thereafter

B 3.1.1

### B 3.1.1 Anticipated Transient Without Scram Alternate Rod Injection (ATWS-ARI) Instrumentation

#### **BASES**

#### **TRO**

The ATWS-ARI System actuates a scram initiation signal to the Control Rod Drive Hydraulic System (CRDHS) either automatically (on failure to scram as indicated by high reactor pressure or low reactor water Level 2), or manually (by operator action). This function adds negative reactivity, following events in which a scram does not (but should) occur. The ATWS-ARI System is diverse from and redundant to the Reactor Protection System. (References 1 and 2)

The ATWS-ARI System includes sensors and relays to cause initiation of a reactor scram. When the setpoint is reached, the channels actuate the ATWS-ARI solenoid pilot valves, which vent the scram air header. For the purpose of this requirement, the term OPERABLE shall mean that the system or system component is capable of performing its function as required to provide compliance with 10 CFR 50.62.

The ATWS-ARI consists of two independent trip systems, with two channels of Reactor Steam Dome Pressure High and two channels of Reactor Vessel Water Level Low, Level 2 in each trip system, and manual initiation capability. Each ATWS-ARI trip system is a two-out-of-two logic for each function. Each system must actuate to effect a reactor scram. The ARI trip system shall be considered to be inoperable with the manual trip channel inoperable. The ARI trip system shall also be considered to be inoperable if any other component that is necessary to energize, and maintain energized, the ARI trip system for the period of time necessary to complete a scram via the ARI trip system (nominally 25 sec.) is not OPERABLE.

(continued)

### B 3.1.1 Anticipated Transient Without Scram Alternate Rod Injection (ATWS-ARI) Instrumentation

#### BASES (continued)

#### **ACTIONS**

The Actions are defined to ensure proper corrective measures are taken in response to the inoperable components. ARI trip system diversity from the reactor protection system is required by the ATWS Rule. The Rule also requires functional redundancy with the Reactor Protection System in order to maximize the advantage of this diversity. Should the ARI trip system be inoperable, the corrective action period is based on this loss of diversity, not on the loss of the function. The redundant and diverse RPS trip system is Tech Spec controlled such that continued operation in the required operating condition is not allowed with loss of the RPS trip functions comparable to the ARI trip functions.

Since the ARI trip system is required only for mitigation of a specific class of ATWS events, and since the purpose of the ARI trip system is to provide diversity where redundancy otherwise exists, then an extended period for corrective action is justified for loss of the ARI trip function.

Unit operation without an OPERABLE ARI trip function is acceptable for a longer period of time than is allowed for the ATWS-RPT system by LCO 3.3.4.2. 14 days is considered to be an adequate period of system repair or component replacement.

#### **TRS**

The TRSs are defined to be performed at the specified Frequency to ensure that the ATWS-ARI Function is maintained OPERABLE.

ATWS - ARI surveillances are performed consistent with the bases for surveillances for LCO 3.3.4.2 "ATWS-RPT Instrumentation."

The Technical Requirement Surveillances (TRS) are modified by two Notes.

Note 1 states that the TRSs for each ATWS-ARI instrumentation Function are located in the SR column of Table 3.1.1-1.

(continued)

B 3.1.1

B 3.1.1 Anticipated Transient Without Scram Alternate Rod Injection (ATWS-ARI) Instrumentation

#### **BASES**

#### TRS (continued)

Note 2 modifies the Surveillances to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided RPS is OPERABLE. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken.

- REFERENCES 1. 10 CFR 50.62 ATWS Rule
  - 2 NEDO-31096-A Response to the ATWS Rule
  - 3. NRC Inspection and Enforcement Manual, Part 9900: Technical Guidance, Standard Technical Specification Section 1.0 Definitions, Issue dated 12/8/86.

B 3.7.3.4

Halon Systems

#### **BASES**

#### **TRO**

The OPERABILITY of the fire suppression Halon systems is one part of ensuring that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The fire suppression system consists of the water supply system, spray and sprinkler systems, CO<sub>2</sub> systems, Halon systems, fire hose stations, and fire hydrants. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility fire protection program.

An OPERABLE Halon system will have storage tanks with at least 95% of full charge weight and 90% of full charge pressure.

Any time a PGCC panel drawer is removed, the opening must be covered with a blank to keep the Halon System OPERABLE. Removal of any PGCC Floor panel or opening of any PGCC panel door causes the affected PGCC module Halon system to become inoperable if the floor panel or panel door must be left open and unattended or cannot be immediately closed.

The basis for those systems included within the scope of this TRO includes both Safety Related and Safe Shutdown system protection. The Halon systems are described in FPRR.

#### **ACTIONS**

The Actions are defined to ensure proper corrective measures and compensatory actions are taken in response to the inoperable systems or components.

Hourly Firewatch Patrols shall be completed once each clock hour. Individual zones on the hourly firewatch patrol shall be toured at intervals (i.e. - zone A and back to zone A) of sixty minutes with a margin of fifteen minutes.

A Continuous Firewatch must remain in the specified area at all times and must patrol the required fire zones in the specified area at least once per fifteen minutes with a margin of five minutes. Areas exist within the plant where the posting of a firewatch does not provide acceptable radiological ALARA practices. For these inaccessible areas, alternate measures should be taken to assure an adequate level of fire protection is maintained.

(continued)

B 3.7.3.4 Halon Systems

#### BASES (continued)

## ACTIONS (continued)

The specified area can be as small as one fire zone as large as a firewatch can reasonably patrol within the fifteen minute time period. The specified area is limited to two floors of the Control Structure or Reactor Buildings. The floors must be adjacent or served by an operable elevator.

#### **TRS**

The TRSs provide assurances that the minimum OPERABILITY requirements of the fire suppression Halon systems are met. An allowance is made for ensuring a sufficient volume of Halon in the Halon storage tanks by verifying the weight and pressure of the tanks. Tank level measurement may be used to confirm full charge weight when supported by engineering analysis.

The Surveillances are modified by a Note to indicate that when a system is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 1 hour. Upon completion of the test, or expiration of the 1 hour allowance, the system must be restored to an operable condition, or the applicable Condition entered and 1 hour Required Action(s) completed. The 1 hour allowance is a reasonable out of service time based on prior plant test performance. This allowance also does not result in an increased risk of a fire. Required Surveillances include those surveillances under other subsections of TRM 3.7.3.

#### TRS 3.7.3.4.3

The purpose of the flow test is to verify that there are no obstructions / blockages in the Halon system headers or nozzles. The use of air or nitrogen is acceptable for use in the performance of the flow test.

#### **REFERENCES**

1. FPRR Section 4.9