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TRM2 - TECHNICAL REQUIREMENTS MANUAL UNIT 2

REMOVE MANUAL TABLE OF CONTENTS DATE: 11/20/2002

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A001

TRM

APPROVED AMENDMENT TO

UNIT 2 TECHNICAL REQUIREMENTS MANUAL

EFFECTIVE DATE 12/31/2002

Replace the following pages of the Technical Requirements Manual with the enclosed pages. The revised pages are identified by Effective Date and contain vertical lines indicating the area of change.

REMOVE PAGES	INSERT PAGES	EFFECTIVE DATE
TRM / LOES-1 through TRM / LOES-6	TRM / LOES-1 through TRM / LOES-6	12/31/2002
TRM / 3.6-7 through TRM / 3 6-9	TRM / 3 6-7 through TRM / 3 6 9	12/31/2002
3 8-4	TRM / 3 8-4	12/31/2002
TRM/B 3 6-6 through TRM/B 3 6-9	TRM/B 3.6-6 through TRM/B 3 6-11	12/31/2002

3.6 Containment

3.6.4 Primary Containment Closed System Boundaries

TRO 3.6.4 Primary Containment Closed System boundaries shall be OPERABLE.

APPLICABILITY: When Primary Containment Isolation Valves (PCIVs) for lines in which the redundant isolation barrier is a closed system are required to be OPERABLE per LCO 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)."

---NOTE---

Primary Containment Closed System boundaries may be unisolated intermittently under administrative controls.

ACTIONS

---NOTES---

1. Separate Condition entry is allowed for each Primary Containment Closed System.
2. Enter applicable Conditions and Required Actions for systems made inoperable by inoperable Primary Containment Closed System boundaries.
3. If Conditions and Required Actions for this TRO are not completed, LCO 3.0.3 shall be entered, not TRO 3.0.3.
4. Penetration flow paths may be unisolated intermittently under administrative controls.
5. Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when Primary Containment Closed System boundary leakage results in exceeding overall containment leakage rate acceptance criteria in MODES 1, 2, and 3.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more penetration flow paths with its Primary Containment Closed System boundary inoperable and its corresponding PCIV(s) OPERABLE.	A.1.1 Isolate the affected portion of system piping from the rest of the closed system and primary containment by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	4 hours
	AND	
	A.1.2 Verify the affected portion of system piping is isolated from the rest of the closed system and primary containment.	Once per 31 days

ACTIONS – (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	OR	
	A.2.1 Isolate the affected penetration(s) by use of the closed and de-activated PCIV.	4 hours
	AND	
	A.2.2 Verify the affected penetration flow path is isolated.	Once per 31 days
B. One or more penetration flow paths with its Primary Containment Closed System boundary inoperable and its corresponding PCIV(s) inoperable.	B.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	1 hour
	OR	
	B.2 Enter the applicable Conditions and Required Actions of LCO 3.6.1.1 for a loss of Primary Containment.	Immediately
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Enter LCO 3.6.1.3 Condition G or H based on the unit MODE.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCE

SURVEILLANCE		FREQUENCY
TRS 3.6.4.1	Verify Primary Containment Closed System boundary is intact.	92 days
TRS 3.6.4.2	Verify Primary Containment Closed System integrity.	In accordance with the Leakage Rate Test Program

TABLE 3.8.1-1 (Page 2 of 2)
PRIMARY CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

	Circuit Breaker Designation		System/Equipment Powered
B.	Type HFB-M		
1.	2B236023	2B236023A	Cont Inst. Gas/HV-22603
2.	2B246022	2B246022A	RCIC/HV-E51-2F007
3.	2B237072	2B237072A	NSSS/HV-B21-2F016
4	2B236102	2B236102A	NSSS/HV-B21-2F001
5.	2B246112	2B246112A	NSSS/HV-B21-2F002
6.	2B246113	2B246113A	NSSS/HV-B21-2F005
7.	2B236053	2B236053A	RWCU/HV-G33-2F001
8.	2B253052	2B253052A	RWCU/HV-G33-2F102
9.	2B263043	2B253043A	RWCU/HV-G33-2F100
10.	2B263052	2B263052A	RWCU/HV-G33-2F106
11.	2B246062	2B246062A	RBCCW/HV-21346
12.	2B246012	2B246012A	RBCCW/HV-21345
13.	2B253063	2B253063A	Drywell Sump/2P402A
14.	2B263071	2B263071A	Drywell Sump/2P402B
15.	2B253043	2B253043A	Drywell Sump/2P403A
16.	2B263072	2B263072A	Drywell Sump/2P403B
C.	Type KB-TM		
1.	2B216092	2B216083	Cont. H2 Recombiner/2E440A
2.	2B226103	2B226102	Cont. H2 Recombiner/2E440B
3.	2B236103	2B236122	Cont. H2 Recombiner/2E440C
4.	1B246033	2B246044	Cont. H2 Recombiner/2E440D
D.	Circuit Breakers Tripped by Overcurrent Relays		
1.	2A20501	2A20502	Rx Recirc/2P401A
2.	2A20601	2A20602	Rx Recirc/2P401B

B 3.6.4 Primary Containment Closed System Boundaries

BASES

TRO

A closed system used as a primary containment isolation boundary is defined as a piping system outside primary containment that does not communicate directly with the atmosphere outside primary containment, meets the design requirements of NUREG-75/087, (Reference 1), as described in FSAR Section 6.2.4 (Reference 2), and is considered an extension of primary containment. The design of several containment penetrations relies upon a single Primary Containment Isolation Valve (PCIV) and a closed piping system outside primary containment (Primary Containment Closed System) as the two isolation barriers, as identified in Technical Specification (TS) Bases, Table B 3.6.1.3-1. For a given containment penetration that relies upon a closed system as the redundant containment isolation barrier, the closed system boundary is essentially equivalent to the ASME Class 2 boundary for the system/loop which contains the penetration. The closed system boundaries are defined by the Leakage Rate Test Program.

As a special case, the containment penetrations for the H_2O_2 analyzer lines also rely upon a closed system as the redundant containment isolation barrier, even though two PCIVs are provided for each of these penetrations. The PCIVs associated with these penetrations are identified in TS Bases Table B 3.6.1.3-1. The PCIVs in each H_2O_2 analyzer penetration are redundant to each other with regard to mechanical operation, but are not redundant with regard to electrical operation. Both PCIVs in each of these penetrations are powered from the same electrical division in order to prevent a single electrical failure from resulting in a loss of both divisions of H_2O_2 analyzers. This results in the valves being susceptible to a single electrical failure which could result in both valves failing open or failing to remain closed. Because of this unique design consideration, the H_2O_2 penetrations are equivalent to penetrations having a single PCIV, with the closed system providing the redundant isolation barrier.

For penetrations with a single PCIV, alteration of the corresponding closed system boundary during power operation is permitted provided that alteration does not impact the containment isolation function of the PCIV, [i.e., able to be closed (automatically or manually) or remain closed, and maintain leakage within that assumed in the design basis loss of coolant accident dose analysis.] Conversely, if a PCIV is in a configuration where it is not capable of performing its containment isolation function (e.g., stuck open), then closed system integrity must be maintained in order to have at least one containment isolation barrier operable. These requirements also apply to the H_2O_2 analyzer penetrations.

B 3.6.4 – Primary Containment Closed System Boundaries

BASES (continued)

TRO (continued)

The APPLICABILITY is modified by a Note allowing Primary Containment Closed System boundaries to be unisolated intermittently under administrative controls. These controls consist of stationing a dedicated operator at the controls of the valve, who is in continuous communications with the control room. In this way, the Primary Containment Closed System can be rapidly isolated when a need for primary containment isolation is indicated.

Opening of closed system boundary valve periodically for specific activities that require the valve to be opened (e.g., testing, venting) is not considered a breach of a closed system, provided the valve is operated under administrative control. Examples include the opening of a high point vent in the Core Spray system to verify that the system is filled with water or the opening of a H_2O_2 analyzer boundary valve to perform a functional test of the Post Accident Sampling System. Similarly, stroking of a boundary valve as part of restoration from maintenance activities associated with that valve does not constitute a breach of the closed system. Examples of this would be the stroking of a valve where the work that was done was replacement of the motor actuator, or other work where the pressure boundary of the valve was not violated. Also, the opening of a valve as a result of normal system operation/testing does not constitute a breach of the closed system.

B 3.6.4 – Primary Containment Closed System Boundaries

BASES (continued)

ACTIONS

These ACTIONS are provided to address Conditions where Primary Containment Closed System boundaries are inoperable. When the Primary Containment Closed System boundaries are OPERABLE, but the associated PCIV(s) is inoperable, LCO 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," Condition C or Condition D would apply.

Note 1 has been added to provide clarification that, for the purpose of the TRO, separate Condition entry is allowed for each closed system. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable closed system. Complying with Required Actions may allow for continued operation, and subsequent inoperable PCIVs or closed systems are governed by subsequent Condition entry and application of associated Required Actions.

The ACTIONS are modified by Notes 2 and 5. Note 2 ensures that appropriate remedial actions are taken, if necessary, if the affected system(s) are rendered inoperable by an inoperable closed system (e.g., an Emergency Core Cooling System subsystem is inoperable due to a failed open drain valve). Note 5 ensures appropriate remedial actions are taken when the primary containment leakage limits are exceeded. Pursuant to TRO 3.0.6, these actions are not required even when the associated TRO is not met. Therefore, Notes 2 and 5 are added to require the proper actions be taken when Primary Containment Closed System boundaries are inoperable.

Note 3 has been added to provide clarification that failing to complete the Required Actions results in a condition that could compromise Primary Containment Integrity and thus, place the plant in an unanalysed condition.

The ACTIONS are modified by Note 4 allowing penetration flow path(s) to be unisolated intermittently under administrative controls. This note applies to a condition where the closed system is inoperable. It does not apply to a situation where a penetration flowpath is normally open and the closed system is OPERABLE (such as the RHR and Core Spray minimum flow return lines), since that represents the normal design configuration. Administrative controls consist of stationing a dedicated operator at the controls of the valve, who is in continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for primary containment isolation is indicated.

B 3.6.4 Primary Containment Closed System Boundaries

BASES (continued)

ACTION (continued)

A.1.1, A.1.2, A.2.1, and A.2.2

With one or more penetration flow paths with its Primary Containment Closed System boundary inoperable, the affected portion of the closed system piping must be isolated from the rest of the closed system and the primary containment. This Condition only applies when the associated PCIV for the penetration flow path is OPERABLE. For the penetration flow paths associated with the H_2O_2 analyzers, both PCIVs must be OPERABLE. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. Closing an intervening valve between the breach in the closed system and the open penetration is permitted when the penetration PCIV is OPERABLE. If no intervening valve exists between the closed system breach and the PCIV, then the PCIV must be closed and deactivated to ensure compliance with LCO 3.6.1.1, "Primary Containment." For the penetration flow paths associated with the H_2O_2 analyzers, one PCIV must be closed and deactivated. Deactivation of the H_2O_2 analyzer PCIVs is discussed in the TS Bases for LCO 3.6.1.3, Condition D.

The Required Actions to isolate the closed system breach, or the penetration, must be completed within the 4 hour Completion Time. The Completion Time of 4 hours is consistent with LCO 3.6.1.3, Condition A, which applies to penetration flow paths with two PCIVs. The Primary Containment Closed System boundary is considered to be the functional equivalent to the ASME Class 2 boundary for the system/loop which contains the penetration. Because this boundary serves as the second barrier required by General Design Criteria 55 and 56 (Ref. 3) in lieu of a second isolation valve, the same Required Actions and associated Completion Times are appropriate.

For inoperable closed system boundaries where the breach has been isolated from the rest of the closed system and primary containment (Required Action A.1.1), or where the penetration has been isolated by a closed and deactivated PCIV (Required Action A.1.2), the affected penetration flow path(s) must be verified to be isolated on a periodic basis. This is necessary to ensure that primary containment penetrations required to be isolated following an accident, and no longer capable of being automatically isolated, will be in the isolation position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification that those devices outside containment and capable of potentially being mispositioned are in the correct position. The Completion Time of "once per 31 days" is consistent with LCO 3.6.1.3, Condition A, and is appropriate because the devices are operated under administrative controls and the probability of their misalignment is low.

B 3.6.4 Primary Containment Closed System Boundaries

BASES (continued)

ACTION (continued)

B.1 and B.2

With one or more penetration flow paths with its Primary Containment Closed System boundary inoperable, the affected penetration flow path must be isolated within 1 hour when the corresponding PCIV for the penetration flow path is also inoperable. For the penetration flow paths associated with the H_2O_2 analyzers, this Condition applies when one or both PCIVs are inoperable. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. The 1 hour Completion Time is consistent with the LCO 3.6.1.3, Condition B, which applies to penetration flow paths with two PCIVs, both of which are inoperable. Alternatively, immediate entry into the applicable Conditions and Required Actions of LCO 3.6.1.1 is permitted.

C.1

If the Required Actions and associated Completion Times of Conditions A or B cannot be met, immediate entry into LCO 3.6.1.3, Condition G or H, is directed. The appropriate Condition to enter is determined by the operating MODE of the unit at the time of entry.

TRS

TRS 3.6.4.1

The boundaries for water filled closed systems are verified to be intact by direct observation, during operator rounds, of the lack of leakage from the system (which is under pressure from the keepfill system), or by observed integrity during functional testing as required by the applicable LCO; and by the system boundary administrative controls (i.e., by procedure and checkoff lists for evolutions that affect the system boundary). The integrity of a closed system boundary, verified in accordance with the methodologies described above, is not compromised throughout the effective surveillance period by the subsequent isolation of the keepfill system and/or depressurization of a closed system.

The boundaries for air filled closed systems are verified to be intact by verification that no work has been performed since the last leak rate test in accordance with TRS 3.6.4.2, and by the system boundary administrative controls (i.e., procedure and checkoff lists for evolutions that affect the system boundary).

The Frequency corresponds to the Inservice Testing Program requirements for performing valve testing at least once every 92 days.

B 3.6.4 Primary Containment Closed System Boundaries

BASES (continued)

TRS (continued)

TRS 3 6.4.2

When restoring a closed system, testing must be performed to verify system integrity. Explicit quantification of the leakage is not required for water filled closed systems. However, testing must be sufficient to assure that an essentially leaktight barrier exists (no gross leakage). For air filled closed systems, explicit leakage quantification is required, and is performed in accordance with the Leakage Rate Test Program.

The Frequency of testing is in accordance with the Leakage Rate Test Program.

REFERENCES

1. NUREG-75/087, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants", September 1975.

2. FSAR Section 6.2.4, "Containment Isolation System."

3. 10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants."