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TSB1 - TECHNICAL SPECIFICATION BASES UNIT 1 MANUAL

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B 3.6 CONTAINMENT SYSTEMS

B 3.6.4.1 Secondary Containment

BASES

BACKGROUND

The secondary containment structure completely encloses the primary containment structure such that a dual-containment design is utilized to limit the spread of radioactivity to the environment to within limits. The function of the secondary containment is to contain, dilute, and hold up fission products that may leak from primary containment into secondary containment following a Design Basis Accident (DBA). In conjunction with operation of the Standby Gas Treatment (SGT) System and closure of certain valves whose lines penetrate the secondary containment, the secondary containment is designed to reduce the activity level of the fission products prior to release to the environment and to isolate and contain fission products that are released during certain operations that take place inside primary containment, when primary containment is not required to be OPERABLE, or that take place outside primary containment (Ref. 1).

The secondary containment is a structure that completely encloses the primary containment and reactor coolant pressure boundary components. This structure forms a control volume that serves to hold up and dilute the fission products. It is possible for the pressure in the control volume to rise relative to the environmental pressure (e.g., due to pump and motor heat load additions).

The secondary containment boundary consists of the reactor building structure and associated removable walls and panels, hatches, doors, dampers, sealed penetrations and valves. Certain plant piping systems (e.g., Service Water, RHR Service Water, Emergency Service Water, Feedwater, etc.) penetrate the secondary containment boundary. The intact piping within secondary containment provides a passive barrier which maintains secondary containment requirements. Breaches of these piping systems within secondary containment will be controlled to maintain secondary containment requirements. The secondary containment is divided into Zone I, Zone II and Zone III, each of which must be OPERABLE depending on plant status and the alignment of the secondary containment boundary. Specifically, the Unit 1 secondary containment boundary can be modified to exclude Zone II. Similarly, the Unit 2 secondary containment boundary can be modified to exclude Zone I. Secondary containment may consist of only Zone III when in MODE 4 or 5 during CORE ALTERATIONS, or during handling of irradiated fuel within the Zone III secondary containment boundary.

(continued)

BASES

BACKGROUND (continued)

To prevent ground level exfiltration while allowing the secondary containment to be designed as a conventional structure, the secondary containment requires support systems to maintain the control volume pressure at less than the external pressure. Requirements for the safety related systems are specified separately in LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs)," and LCO 3.6.4.3, "Standby Gas Treatment (SGT) System." When one or more zones are excluded from secondary containment, the specific requirements for support systems will also change (e.g., required secondary containment isolation valves).

APPLICABLE SAFETY ANALYSES

There are two principal accidents for which credit is taken for secondary containment OPERABILITY. These are a loss of coolant accident (LOCA) (Ref. 2) and a fuel handling accident inside secondary containment (Ref. 3). The secondary containment performs no active function in response to either of these limiting events; however, its leak tightness is required to ensure that the release of radioactive materials from the primary containment is restricted to those leakage paths and associated leakage rates assumed in the accident analysis and that fission products entrapped within the secondary containment structure will be treated by the SGT System prior to discharge to the environment.

Secondary containment satisfies Criterion 3 of the NRC Policy Statement (Ref. 4).

LCO

An OPERABLE secondary containment provides a control volume into which fission products that bypass or leak from primary containment, or are released from the reactor coolant pressure boundary components located in secondary containment, can be diluted and processed prior to release to the environment. For the secondary containment to be considered OPERABLE, it must have adequate leak tightness to ensure that the required vacuum can be established and maintained. The leak tightness of secondary containment must also ensure that the release of radioactive materials to the environment is restricted to those leakage paths and associated leakage rates assumed in the accident analysis. For example, secondary containment bypass leakage must be restricted to the leakage rate required by LCO 3.6.1.3. The secondary containment boundary required to be OPERABLE is dependent on the operating status of both units, as well as the configuration of walls, doors, hatches, SCIVs, and available flow paths to the SGT System.

(continued)

BASES (continued)

APPLICABILITY

In MODES 1, 2, and 3, a LOCA could lead to a fission product release to primary containment that leaks to secondary containment. Therefore, secondary containment OPERABILITY is required during the same operating conditions that require primary containment OPERABILITY.

In MODES 4 and 5, the probability and consequences of the LOCA are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining secondary containment OPERABLE is not required in MODE 4 or 5 to ensure a control volume, except for other situations for which significant releases of radioactive material can be postulated, such as during operations with a potential for draining the reactor vessel (OPDRVs), during CORE ALTERATIONS, or during movement of irradiated fuel assemblies in the secondary containment.

ACTIONS

A.1

If secondary containment is inoperable, it must be restored to OPERABLE status within 4 hours. The 4 hour Completion Time provides a period of time to correct the problem that is commensurate with the importance of maintaining secondary containment during MODES 1, 2, and 3. This time period also ensures that the probability of an accident (requiring secondary containment OPERABILITY) occurring during periods where secondary containment is inoperable is minimal.

A temporary (one-time) Completion Time is connected to the Completion Time Requirements above (4 hours) with an "OR" connector. The Temporary Completion Time is 48 hours and applies to the replacement of the Reactor Building Recirculating Fan Damper Motors. The Temporary Completion Time of 48 hours may only be used once, and expires on December 31, 2005.

B.1 and B.2

If secondary containment cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

(continued)

BASES

ACTIONS (continued)

C.1, C.2, and C.3

Movement of irradiated fuel assemblies in the secondary containment, CORE ALTERATIONS, and OPDRVs can be postulated to cause fission product release to the secondary containment. In such cases, the secondary containment is the only barrier to release of fission products to the environment. CORE ALTERATIONS and movement of irradiated fuel assemblies must be immediately suspended if the secondary containment is inoperable.

Suspension of these activities shall not preclude completing an action that involves moving a component to a safe position. Also, action must be immediately initiated to suspend OPDRVs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until OPDRVs are suspended.

Required Action C.1 has been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1.1

This SR ensures that the secondary containment boundary is sufficiently leak tight to preclude exfiltration under expected wind conditions. Expected wind conditions are defined as sustained wind speeds of less than or equal to 16 mph at the 60m meteorological tower or less than or equal to 11 mph at the 10m meteorological tower if the 60m tower wind speed is not available. Changes in indicated reactor building differential pressure observed during periods of short-term wind speed gusts above these sustained speeds do not by themselves impact secondary containment integrity. However, if secondary containment integrity is known to be compromised, the LCO must be entered regardless of wind speed.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1.1 (continued)

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.6.4.1.2 and SR 3.6.4.1.3

Verifying that secondary containment equipment hatches, removable walls and one access door in each access opening required to be closed are closed ensures that the infiltration of outside air of such a magnitude as to prevent maintaining the desired negative pressure does not occur.

Verifying that all such openings are closed also provides adequate assurance that exfiltration from the secondary containment will not occur. In this application, the term "sealed" has no connotation of leak tightness.

An access opening typically contains one inner and one outer door. Maintaining secondary containment OPERABILITY requires verifying one door in each access opening to secondary containment zones is closed. In some cases (e.g., railroad bay), secondary containment access openings are shared such that a secondary containment barrier may have multiple inner or multiple outer doors. The intent is to maintain the secondary containment barrier intact, which is achieved by maintaining the inner or outer portion of the barrier closed at all times. However, brief, inadvertent, simultaneous opening of the inner and outer secondary containment doors for personnel entry and exit is allowed. Intentional or extended opening of both doors simultaneously, even for personnel entry and exit, is not permitted and will result in Secondary Containment being declared INOPERABLE. All secondary containment access doors are normally kept closed, except when the access opening is being used for entry and exit or when maintenance is being performed on an access opening.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1.2 and SR 3.6.4.1.3 (continued)

When the railroad bay door (No. 101) is closed; all Zone I and III hatches, removable walls, dampers, and one door in each access opening connected to the railroad access bay are closed; or, only Zone I removable walls and/or doors are open to the railroad access shaft; or, only Zone III hatches and/or dampers are open to the railroad access shaft. When the railroad bay door (No. 101) is open; all Zone I and III hatches, removable walls, dampers, and one door in each access opening connected to the railroad access bay are closed. The truck bay hatch is closed and the truck bay door (No. 102) is closed unless Zone II is isolated from Zones I and III.

The access openings between secondary containment zones which are not provided with two doors are administratively controlled to maintain secondary containment integrity during exit and entry. This Surveillance is modified by a Note that allows access openings with a single door (i.e., no airlock) within the secondary containment boundary (i.e., between required secondary containment zones) to be opened for entry and exit. Opening of an access door for entry and exit allows sufficient administrative control by individual personnel making the entries and exits to assure the secondary containment function is not degraded. When one of the zones is not a zone required for secondary containment OPERABILITY, the Note allowance would not apply.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.4.1.4 and SR 3.6.4.1.5

The SGT System exhausts the secondary containment atmosphere to the environment through appropriate treatment equipment. To ensure that all fission products are treated, SR 3.6.4.1.4 verifies that the SGT System will rapidly establish and maintain a pressure in the secondary containment that is less than the pressure external to the secondary containment boundary. This is confirmed by demonstrating that one SGT subsystem will draw down the secondary containment to ≥ 0.25 inches of vacuum water gauge in less than or equal to the maximum time allowed. This cannot be accomplished if the secondary containment boundary is not intact. SR 3.6.4.1.5 demonstrates that one SGT subsystem can maintain ≥ 0.25 inches of vacuum water gauge for at least 1 hour at less than or equal to the maximum flow rate permitted for the secondary containment configuration that is operable. The 1 hour test period allows secondary containment to be in thermal equilibrium at steady state conditions. As noted, both SR 3.6.4.1.4 and SR 3.6.4.1.5 acceptance limits are dependent upon the secondary containment configuration when testing is being performed. The acceptance criteria for the SRs based on secondary containment configuration is defined as follows:

SECONDARY CONTAINMENT TEST CONFIGURATION	MAXIMUM DRAWDOWN TIME(SEC) (SR 3.6.4.1.4 ACCEPTANCE CRITERIA)	MAXIMUM FLOW RATE (CFM) (SR 3.6.4.1.5 ACCEPTANCE CRITERIA)
Group 1		
Zones I, II and III (Unit 1 Railroad Bay aligned to Secondary Containment).	≤ 300 Seconds (Zones I, II, and III)	≤ 5400 CFM (From Zones I, II, and III)
Zones I and III (Unit 1 Railroad Bay aligned to Secondary Containment).	≤ 300 Seconds (Zones I and III)	≤ 3900 CFM (From Zones I and III)
Group 2		
Zones I, II and III (Unit 1 Railroad Bay not aligned to Secondary Containment).	≤ 300 Seconds (Zones I, II, and III)	≤ 5300 CFM (From Zones I, II, and III)
Zones I and III (Unit 1 Railroad Bay not aligned to Secondary Containment).	≤ 300 Seconds (Zones I and III)	≤ 3800 CFM (From Zones I and III)

Only one of the above listed configurations needs to be tested to confirm secondary containment OPERABILITY.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1.4 and SR 3.6.4.1.5 (continued)

A Note also modifies the Frequency for each SR. This Note identifies that each configuration is to be tested every 60 months. Testing each configuration every 60 months assures that the most limiting configuration is tested every 60 months. The 60 month Frequency is acceptable because operating experience has shown that these components usually pass the Surveillance and all active components are tested more frequently. Therefore, these tests are used to ensure secondary containment boundary integrity.

The secondary containment testing configurations are discussed in further detail to ensure the appropriate configurations are tested. Three zone testing (Zones, I, II and III aligned to the recirculation plenum) should be performed with the Railroad Bay aligned to secondary containment and another test with the Railroad Bay not aligned to secondary containment. Each test should be performed with each division on a STAGGERED TEST BASIS.

Two zone testing (Zones I and III aligned to the recirculation plenum) should be performed with the Railroad Bay aligned to secondary containment and another test with the Railroad Bay not aligned to secondary containment. Each test should be performed with each division on a STAGGERED TEST BASIS. The normal operating fans of the non-tested HVAC zone (Zone II fans 2V202A&B, 2V205A&B and 2V206A&B) should not be in operation. Additionally, a controlled opening of adequate size should be maintained in Zone II Secondary Containment during testing to assure that atmospheric conditions are maintained in that zone.

The Unit 1 Railroad Bay can be aligned as a No Zone (isolated from secondary containment) or as part of secondary containment (Zone I or III). Due to the different leakage pathways that exist in the Railroad Bay, the Railroad Bay should be tested when aligned to secondary containment and not aligned to secondary containment. It is preferred to align the Railroad Bay to Zone III when testing with the Railroad Bay aligned to secondary containment since Zone III is included in all possible secondary containment isolation alignments. Note that aligning the Railroad Bay to either Zone I or III is acceptable since either zone is part of secondary containment.

(continued)

BASES

SURVEILLANCE REQUIREMENTS	<u>SR 3.6.4.1.4 and SR 3.6.4.1.5</u> (continued) The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.
REFERENCES	1. FSAR, Section 6.2.3. 2. FSAR, Section 15.6. 3. FSAR, Section 15.7.4. 4. Final Policy Statement on Technical Specifications Improvements, July 22, 1993 (58 FR 39132).

3.6 CONTAINMENT SYSTEMS

B 3.6.4.2 Secondary Containment Isolation Valves (SCIVs)

BASES

BACKGROUND

The function of the SCIVs, in combination with other accident mitigation systems, is to limit fission product release during and following postulated Design Basis Accidents (DBAs) (Ref. 1). Secondary containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that fission products that leak from primary containment into secondary containment following a DBA, or that are released during certain operations when primary containment is not required to be OPERABLE or take place outside primary containment, are maintained within the secondary containment boundary.

The OPERABILITY requirements for SCIVs help ensure that an adequate secondary containment boundary is maintained during and after an accident by minimizing potential paths to the environment. These isolation devices consist of either passive devices or active (automatic) devices. Manual valves or dampers, de-activated automatic valves or dampers secured in their closed position (including check valves with flow through the valve secured), and blind flanges are considered passive devices.

Automatic SCIVs close on a secondary containment isolation signal to establish a boundary for untreated radioactive material within secondary containment following a DBA or other accidents.

Other non-sealed penetrations which cross a secondary containment boundary are isolated by the use of valves in the closed position or blind flanges.

APPLICABLE SAFETY ANALYSES

The SCIVs must be OPERABLE to ensure the secondary containment barrier to fission product releases is established. The principal accidents for which the secondary containment boundary is required are a loss of coolant accident (Ref. 1) and a fuel handling accident inside secondary containment (Ref. 2). The secondary containment performs no active function in response to either of these limiting events, but the boundary

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

established by SCIVs is required to ensure that leakage from the primary containment is processed by the Standby Gas Treatment (SGT) System before being released to the environment.

Maintaining SCIVs OPERABLE with isolation times within limits ensures that fission products will remain trapped inside secondary containment so that they can be treated by the SGT System prior to discharge to the environment.

SCIVs satisfy Criterion 3 of the NRC Policy Statement (Ref. 3).

LCO

SCIVs that form a part of the secondary containment boundary are required to be OPERABLE. Depending on the configuration of the secondary containment only specific SCIVs are required. The SCIV safety function is related to control of offsite radiation releases resulting from DBAs.

The automatic isolation valves are considered OPERABLE when their isolation times are within limits and the valves actuate on an automatic isolation signal. The valves covered by this LCO, along with their associated stroke times, are listed in Table B 3.6.4.2-1.

The normally closed isolation valves or blind flanges are considered OPERABLE when manual valves are closed or open in accordance with appropriate administrative controls, automatic SCIVs are deactivated and secured in their closed position, or blind flanges are in place. These passive isolation valves or devices are listed in Table B3.6.4.2-2. Penetrations closed with sealants are considered part of the secondary containment boundary and are not considered penetration flow paths.

Certain plant piping systems (e.g., Service Water, RHR Service Water, Emergency Service Water, Feedwater, etc.) penetrate the secondary containment boundary. The intact piping within secondary containment provides a passive barrier which maintains secondary containment requirements. When the SDHR and temporary chiller system piping is connected and full of water, the piping forms the secondary containment boundary and the passive devices in TS Bases Table B3.6.4.2-2 are no longer required for these systems since the piping forms the barrier. During certain plant evolutions, piping systems may be drained and breached within secondary containment. During the pipe breach, system isolation valves can be used to provide secondary containment isolation. The isolation valve alignment will be controlled when the piping system is breached.

(continued)

BASES (continued)

APPLICABILITY

In MODES 1, 2, and 3, a DBA could lead to a fission product release to the primary containment that leaks to the secondary containment. Therefore, the OPERABILITY of SCIVs is required.

In MODES 4 and 5, the probability and consequences of these events are reduced due to pressure and temperature limitations in these MODES. Therefore, maintaining SCIVs OPERABLE is not required in MODE 4 or 5, except for other situations under which significant radioactive releases can be postulated, such as during operations with a potential for draining the reactor vessel (OPDRVs), during CORE ALTERATIONS, or during movement of irradiated fuel assemblies in the secondary containment. Moving irradiated fuel assemblies in the secondary containment may also occur in MODES 1, 2, and 3.

ACTIONS

The ACTIONS are modified by three Notes. The first Note allows penetration flow paths to be unisolated intermittently under administrative controls. These controls consist of stationing a dedicated operator, who is in continuous communication with the control room, at the controls of the isolation device. In this way, the penetration can be rapidly isolated when a need for secondary containment isolation is indicated.

The second Note provides clarification that for the purpose of this LCO separate Condition entry is allowed for each penetration flow path. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable SCIV. Complying with the Required Actions may allow for continued operation, and subsequent inoperable SCIVs are governed by subsequent Condition entry and application of associated Required Actions.

The third Note ensures appropriate remedial actions are taken, if necessary, if the affected system(s) are rendered inoperable by an inoperable SCIV.

A.1 and A.2

In the event that there are one or more required penetration flow paths with one required SCIV inoperable, the affected penetration flow path(s) must be isolated. 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 SCIV, a closed manual valve, and a blind flange. For penetrations isolated in

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

accordance with Required Action A.1, the device used to isolate the penetration should be the closest available device to secondary containment. The Required Action must be completed within the 8 hour Completion Time. The specified time period is reasonable considering the time required to isolate the penetration, and the probability of a DBA, which requires the SCIVs to close, occurring during this short time is very low.

For affected penetrations that have been isolated in accordance with Required Action A.1, the affected penetration must be verified to be isolated on a periodic basis. This is necessary to ensure that secondary containment penetrations required to be isolated following an accident, but no longer capable of being automatically isolated, will be in the isolation position should an event occur. The Completion Time of once per 31 days is appropriate because the valves are operated under administrative controls and the probability of their misalignment is low. This Required Action does not require any testing or device manipulation. Rather, it involves verification that the affected penetration remains isolated.

Condition A is modified by a Note indicating that this Condition is only applicable to those penetration flow paths with two SCIVs. For penetration flow paths with one SCIV, Condition C provides the appropriate Required Actions.

Required Action A.2 is modified by a Note that applies to devices located in high radiation areas and allows them to be verified closed by use of administrative controls. Allowing verification by administrative controls is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment, once they have been verified to be in the proper position, is low.

B.1

With two SCIVs in one or more penetration flow paths inoperable, the affected penetration flow path must be isolated within 4 hours. The method of isolation must

(continued)

BASES

ACTIONS

B.1 (continued)

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 4 hour Completion Time is reasonable considering the time required to isolate the penetration and the probability of a DBA, which requires the SCIVs to close, occurring during this short time, is very low.

The Condition has been modified by a Note stating that Condition B is only applicable to penetration flow paths with two isolation valves. For penetration flow paths with one SCIV, Condition C provides the appropriate Required Actions.

C.1 and C.2

With one or more required penetration flow paths with one required SCIV inoperable, the inoperable valve must be restored to OPERABLE status or the affected penetration flow path must be isolated. 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. A check valve may not be used to isolate the affected penetration. Required Action C.1 must be completed within the 4 hour Completion Time. The Completion Time of 4 hours is reasonable considering the relative stability of the system (hence, reliability) to act as a penetration isolation boundary and the relative importance of supporting secondary containment OPERABILITY during MODES 1, 2, and 3.

In the event the affected penetration flow path is isolated in accordance with Required Action C.1, the affected penetration must be verified to be isolated on a periodic basis. This is necessary to ensure that secondary containment penetrations required to be isolated following an accident are isolated.

The Completion Time of once per 31 days for verifying each affected penetration is isolated is appropriate because the

(continued)

BASES

ACTIONS

C.1 and C.2 (continued)

valves are operated under administrative controls and the probability of their misalignment is low.

Condition C is modified by a Note indicating that this Condition is only applicable to penetration flow paths with only one SCIV. For penetration flow paths with two SCIVs, Conditions A and B provide the appropriate Required Actions.

Required Action C.2 is modified by a Note that applies to valves and blind flanges located in high radiation areas and allows them to be verified by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is low.

D.1 and D.2

If any Required Action and associated Completion Time cannot be met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

E.1, E.2, and E.3

If any Required Action and associated Completion Time are not met, the plant must be placed in a condition in which the LCO does not apply. If applicable, CORE ALTERATIONS and the movement of irradiated fuel assemblies in the secondary containment must be immediately suspended. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, actions must be immediately initiated to suspend OPDRVs in order to minimize the probability of a vessel draindown and the subsequent potential for fission product release. Actions must continue until OPDRVs are suspended.

(continued)

BASES

ACTIONS

E.1, E.2, and E.3 (continued)

Required Action E.1 has been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving fuel while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.2.1

This SR verifies that each secondary containment manual isolation valve and blind flange that is required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside of the secondary containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification (typically visual) that those required SCIVs in secondary containment that are capable of being mispositioned are in the correct position.
The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

Two Notes have been added to this SR. The first Note applies to valves and blind flanges located in high radiation areas and allows them to be verified by use of administrative controls. Allowing verification by administrative controls is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, and 3 for ALARA reasons. Therefore, the probability of misalignment of these SCIVs, once they have been verified to be in the proper position, is low.

A second Note has been included to clarify that SCIVs that are open under administrative controls are not required to meet the SR during the time the SCIVs are open.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.4.2.2

SCIVs with maximum isolation times specified in Table B 3.6.2.4-1 are tested to verify that the isolation time is within limits to demonstrate OPERABILITY. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. Automatic SCIVs without maximum isolation times specified in Table B 3.6.4.2-1 are tested under the requirements of SR 3.6.4.2.3. The isolation time test ensures that the SCIV will isolate in a time period less than or equal to that assumed in the safety analyses.

SR 3.6.4.2.3

Verifying that each automatic required SCIV closes on a secondary containment isolation signal is required to prevent leakage of radioactive material from secondary containment following a DBA or other accidents. This SR ensures that each automatic SCIV will actuate to the isolation position on a secondary containment isolation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.2.5 overlaps this SR to provide complete testing of the safety function. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

REFERENCES

1. FSAR, Section 6.2.
2. FSAR, Section 15.
3. Final Policy Statement on Technical Specifications Improvements, July 22, 1993 (58 FR 39132).

Table B 3.6.4.2-1
Secondary Containment Ventilation System
Automatic Isolation Dampers
(Page 1 of 1)

Reactor Building Zone	Valve Number	Valve Description	Type of Valve	Maximum Isolation Time (Seconds)
I	HD-17586 A&B	Supply System Dampers	Automatic Isolation Damper	10.0
I	HD-17524 A&B	Filtered Exhaust System Dampers	Automatic Isolation Damper	10.0
I	HD-17576A&B	Unfiltered Exhaust System Dampers	Automatic Isolation Damper	10.0
II	HD-27586 A&B	Supply System Dampers	Automatic Isolation Damper	10.0
II	HD-27524 A&B	Filtered Exhaust System Dampers	Automatic Isolation Damper	10.0
II	HD-27576 A&B	Unfiltered Exhaust System Dampers	Automatic Isolation Damper	10.0
III	HD-17564 A&B	Supply System Dampers	Automatic Isolation Damper	14.0
III	HD-17514 A&B	Filtered Exhaust System Dampers	Automatic Isolation Damper	6.5
III	HD-17502 A&B	Unfiltered Exhaust System Dampers	Automatic Isolation Damper	6.0
III	HD-27564 A&B	Supply System Dampers	Automatic Isolation Damper	14.0
III	HD-27514 A&B	Filtered Exhaust System Dampers	Automatic Isolation Damper	6.5
III	HD-27502 A&B	Unfiltered Exhaust System Dampers	Automatic Isolation Damper	6.0
N/A	HD-17534A	Zone 3 Airlock I-606	Automatic Isolation Damper	N/A
N/A	HD-17534B	Zone 3 Airlock I-611	Automatic Isolation Damper	N/A
N/A	HD-17534D	Zone 3 Airlock I-803	Automatic Isolation Damper	N/A
N/A	HD-17534E	Zone 3 Airlock I-805	Automatic Isolation Damper	N/A
N/A	HD-17534F	Zone 3 Airlock I-617	Automatic Isolation Damper	N/A
N/A	HD-17534H	Zone 3 Airlock I-618	Automatic Isolation Damper	N/A
N/A	HD-27534A	Zone 3 Airlock II-606	Automatic Isolation Damper	N/A
N/A	HD-27534D	Zone 3 Airlock II-803	Automatic Isolation Damper	N/A
N/A	HD-27534E	Zone 3 Airlock II-805	Automatic Isolation Damper	N/A
N/A	HD-27534G	Zone 3 Airlock C-806	Automatic Isolation Damper	N/A
N/A	HD-27534H	Zone 3 Airlock II-618	Automatic Isolation Damper	N/A
N/A	HD-27534I	Zone 3 Airlock II-609	Automatic Isolation Damper	N/A

Table B 3.6.4.2-2
Secondary Containment Ventilation System
Passive Isolation Valves or Devices
(Page 1 of 4)

Device Number	Device Description	Area/Elev.	Required Position / Notes
X-29-2-44	SDHR System to Fuel Pool Cooling	Yard/670	Blind Flanged / Note 1
X-29-2-45	SDHR System to Fuel Pool Cooling	Yard/670	Blind Flanged / Note 1
110176	SDHR Supply Drain Vlv	29/670	Closed Manual Iso Valve/ Note 1
110186	SDHR Discharge Drain Vlv	29/670	Closed Manual Iso Valve / Note 1
110180	SDHR Supply Vent Vlv	29/749	Closed Manual Iso Valve / Note 1
110181	SDHR Discharge Fill Vlv	27/749	Closed Manual Iso Valve / Note 1
110182	SDHR Discharge Vent Vlv	27/749	Closed Manual Iso Valve / Note 1
110187	SDHR Supply Fill Vlv	29/749	Closed Manual Iso Valve / Note 1
210186	SDHR Supply Drain Vlv	33/749	Closed Manual Iso Valve / Note 1
210187	SDHR Supply Vent Vlv	33/749	Closed Manual Iso Valve / Note 1
210191	SDHR Discharge Vent Vlv	30/749	Closed Manual Iso Valve / Note 1
210192	SDHR Discharge Drain Vlv	30/749	Closed Manual Iso Valve / Note 1
210193	SDHR Discharge Vent Vlv	33/749	Closed Manual Iso Valve / Note 1
X-29-2-46	Temporary Chiller to RBCW	Yard/670	Blind Flanged / Note 2
X-29-2-47	Temporary Chiller to RBCW	Yard/670	Blind Flanged / Note 2
X-29-5-95	Temporary Chiller to Unit 1 RBCW	29/749	Blind Flanged / Note 2
X-29-5-96	Temporary Chiller to Unit 1 RBCW	29/749	Blind Flanged / Note 2
X-29-5-91	Temporary Chiller to Unit 2 RBCW	33/749	Blind Flanged / Note 2
X-29-5-92	Temporary Chiller to Unit 2 RBCW	33/749	Blind Flanged / Note 2
187388	RBCW Temp Chiller Discharge Iso Vlv	29/670	Closed Manual Iso Valve / Note 2
187389	RBCW Temp Chiller Supply Iso Vlv	29/670	Closed Manual Iso Valve / Note 2
187390	RBCW Temp Chiller Supply Drain Vlv	29/670	Closed Manual Iso Valve / Note 2
187391	RBCW Temp Chiller Discharge Drain Vlv	29/670	Closed Manual Iso Valve / Note 2
X-28-2-3000	Utility Penetration to Unit 1 East Stairwell	Yard/670	Blind Flanged / Note 3
X-29-2-48	Utility Penetration to Unit 1 RR Bay	Yard/670	Capped / Note 5
X-33-2-3000	Utility Penetration to Unit 2 East Stairwell	Yard/670	Blind Flanged / Note 4
X-28-2-3000	Utility Penetration to Unit 1 East Stairwell	28/670	Blind Flanged / Note 3
X-29-2-48	Utility Penetration to Unit 1 RR Bay	29/670	Capped / Note 5
X-33-2-3000	Utility Penetration to Unit 2 East Stairwell	33/670	Blind Flanged / Note 4
X-29-3-54	Utility Penetration to Unit 1 RBCCW Hx Area	27/683	Blind Flanged / Note 6
X-29-3-55	Utility Penetration to Unit 1 RBCCW Hx Area	27/683	Blind Flanged / Note 6
X-29-5-97	Utility Penetration from Unit 1 RR Bay to Unit 2 Elev. 749	33/749	Capped
X-27-6-92	Instrument Tubing Stubs	27/779'	Capped
X-29-7-4	1" Spare Conduit Threaded Plug	29/818'	Installed
X-30-6-72	Instrument Tubing Stubs	30/779'	Capped
X-30-6-1002	Stairwell #214 Rupture Disc	30/779'	Installed Intact
X-30-6-1003	Airlock II-609 Rupture Disc	30/779'	Installed Intact

Table B 3.6.4.2-2
Secondary Containment Ventilation System
Passive Isolation Valves or Devices
(Page 2 of 4)

Device Number	Device Description	Area/Elev.	Required Position / Notes
X-25-6-1008	Airlock I-606 Rupture Disc	25/779'	Installed Intact
X-29-4-D1-B	Penetration at Door 4330	29/719'	Blind Flange Installed
X-29-4-D1-A	Penetration at Door 4330	29/719'	Blind Flange Installed
X-29-4-D1-B	Penetration at Door 404	33/719'	Blind Flange Installed
X-29-4-D1-A	Penetration at Door 404	33/719'	Blind Flange Installed
HD17534C	Airlock I-707 Blind Flange	28/799'	Blind Flange Installed
HD27534C	Airlock II-707 Blind Flange	33/799'	Blind Flange Installed
XD-17513	Isolation damper for Railroad Bay Zone III HVAC Supply	29/799'	Position is dependent on Railroad Bay alignment
XD-17514	Isolation damper for Railroad Bay Zone III HVAC Exhaust	29/719'	Position is dependent on Railroad Bay alignment
XD-12301	PASS Air Flow Damper	11/729'	Closed Damper
XD-22301	PASS Air Flow Damper	22/729'	Closed Damper
161827	HPCI Blowout Steam Vent Drain Valve	25/645'	Closed Manual Iso Valve / Note 3
161828	RCIC Blowout Steam Vent Drain Valve	28/645'	Closed Manual Iso Valve / Note 3
161829	'A' RHR Blowout Steam Vent Drain Valve	29/645'	Closed Manual Iso Valve / Note 3
161830	'B' RHR Blowout Steam Vent Drain Valve	28/645'	Closed Manual Iso Valve / Note 3
261820	RCIC Blowout Steam Vent Drain Valve	33/645'	Closed Manual Iso Valve / Note 4
261821	'A' RHR Blowout Steam Vent Drain Valve	34/645'	Closed Manual Iso Valve / Note 4
261822	'B' RHR Blowout Steam Vent Drain Valve	33/645'	Closed Manual Iso Valve / Note 4
1LRWI810U	Zone III Floor Drain	29-818	Plugged / Note 7
1LRWI810V	Zone III Floor Drain	29-818	Plugged / Note 7
1LRWI810W	Zone III Floor Drain	29-818	Plugged / Note 7
1LRWI810X	Zone III Floor Drain	29-818	Plugged / Note 7
1LRWI810Y	Zone III Floor Drain	29-818	Plugged / Note 7
1LRWI810Z	Zone III Floor Drain	29-818	Plugged / Note 7
1LRWI810FF	Zone III Floor Drain	29-818	Plugged / Note 7
1LRWI810GG	Zone III Floor Drain	29-818	Plugged / Note 7
1LRWI810HH	Zone III Floor Drain	29-818	Plugged / Note 7
1LRWI810JJ	Zone III Floor Drain	29-818	Plugged / Note 7
1LRWI810KK	Zone III Floor Drain	29-818	Plugged / Note 7
1LRWI615A	Zone I, Zone III, or No Zone Floor Drain	29-779	Plugged / Note 7
1LRWI100A	Zone I, Zone III, or No Zone Floor Drain	29-670	Plugged / Note 7
1LRWI100B	Zone I, Zone III, or No Zone Floor Drain	29-670	Plugged / Note 7
1LRWI100C	Zone I, Zone III, or No Zone Floor Drain	29-670	Plugged / Note 7
1LRWI100D	Zone I, Zone III, or No Zone Floor Drain	29-670	Plugged / Note 7
1LRWI100E	Zone I, Zone III, or No Zone Floor Drain	29-670	Plugged / Note 7
1LRWI100F	Zone I, Zone III, or No Zone Floor Drain	29-670	Plugged / Note 7
1LRWI100G	Zone I, Zone III, or No Zone Floor Drain	29-670	Plugged / Note 7

Table B 3.6.4.2-2
Secondary Containment Ventilation System
Passive Isolation Valves or Devices
(Page 3 of 4)

Device Number	Device Description	Area/Elev.	Required Position / Notes
2LRWI810L	Zone III Floor Drain	34-818	Plugged / Note 7
2LRWI810M	Zone III Floor Drain	34-818	Plugged / Note 7
2LRWI810N	Zone III Floor Drain	34-818	Plugged / Note 7
2LRWI810R	Zone III Floor Drain	34-818	Plugged / Note 7
2LRWI810S	Zone III Floor Drain	34-818	Plugged / Note 7
2LRWI703A	Zone II Floor Drain	34-799	Plugged / Note 7
2LRWI615A	Zone II Floor Drain	34-779	Plugged / Note 7
2LRWI100A	Zone II Floor Drain	34-670	Plugged / Note 7
2LRWI100B	Zone II Floor Drain	34-670	Plugged / Note 7
2LRWI100C	Zone II Floor Drain	34-670	Plugged / Note 7
2LRWI100D	Zone II Floor Drain	34-670	Plugged / Note 7
2LRWI100E	Zone II Floor Drain	34-670	Plugged / Note 7
2LRWI100F	Zone II Floor Drain	34-670	Plugged / Note 7
2LRWI100G	Zone II Floor Drain	34-670	Plugged / Note 7
257328 OR 257336	HCVS Rupture Disc Burst Connection Isolation Valves	21/686'	Closed Manual Iso Valve / Note 4

Table B 3.6.4.2-2
Secondary Containment Ventilation System
Passive Isolation Valves or Devices
(Page 4 of 4)

Note 1: The two blind flanges on the SDHR penetrations (blind flanges for device number X-29-2-44 and X-29-2-45) and all the closed manual valves for the SDHR system (110176, 110186, 110180, 110181, 110182, 110187, 210186, 210187, 210191, 210192, 210193) can each be considered as a separate secondary containment isolation device for the SDHR penetrations. If one or both of the blind flanges is removed and all the above identified manual valves for the SDHR system are closed, the appropriate LCO should be entered for one inoperable SCIV in a penetration flow path with two SCIVs. With the blind flange removed, the manual valves could be opened intermittently under administrative controls per the Technical Specification Note. When both SDHR blind flanges are installed, opening of the manual valves for the SDHR system will be controlled to prevent cross connecting ventilation zones. When the manual valves for the SDHR system are open in this condition, the appropriate LCO should be entered for one inoperable SCIV in a penetration flow path with two SCIVs. When the SDHR system piping is connected and full of water, the piping forms the secondary containment boundary and the above listed SCIVs in Table B3.6.4.2-2 are no longer required for this system since the piping forms the barrier.

Note 2: Due to the multiple alignments of the RBCW temporary chiller, different devices will perform the SCIV function depending on the RBCW configuration. There are three devices/equipment that can perform the SCIV function for the RBCW temporary chiller supply penetration. The first SCIV for the RBCW temporary chiller supply penetration is the installed blind flange on penetration X-29-2-47. The second SCIV for the RBCW temporary chiller supply penetration is isolation valve 187389. The third SCIV for the temporary RBCW chiller supply penetration is closed drain valve 187390 and an installed blind flange on penetrations X-29-5-92 and X-29-5-96. Since there are effectively three SCIVs, any two can be used to satisfy the SCIV requirements for the penetration. Removal of one of the two required SCIVs requires entry into the appropriate LCO for one inoperable SCIV in a penetration flow path with two SCIVs. Opening of drain valve 187390 and operation of blank flanges X-29-5-96 and X-29-5-92 will be controlled to prevent cross connecting ventilation zones. These three SCIVs prevent air leakage. The isolation of the penetration per the Technical Specification requirement is to assure that one of the above SCIVs is closed so that there is no air leakage.

There are three devices/equipment that can perform the SCIV function for the RBCW temporary chiller return penetration. The first SCIV for the RBCW temporary chiller return penetration is the installed blind flange on penetration X-29-2-46. The second SCIV for the RBCW temporary chiller return penetration is isolation valve 187388. The third SCIV for the temporary RBCW chiller return penetration is closed drain valve 187391 and an installed blind flange on penetrations X-29-5-91 and X-29-5-95. Since there are effectively three SCIVs, any two can be used to define the SCIV for the penetration. Removal of one of the two required SCIVs requires entry into the appropriate LCO for one inoperable SCIV in a penetration flow path with two SCIVs. Opening of drain valve 187391 and operation of blank flanges X-29-5-91 and X-29-5-95 will be controlled to prevent cross connecting ventilation zones. These three SCIVs prevent air leakage. The isolation of the penetration per the Technical Specification requirement is to assure that one of the above SCIVs is closed so that there is no air leakage.

When the RBCW temporary chiller piping is connected and full of water, the piping inside secondary containment forms the secondary containment boundary and the above listed SCIVs in Table B3.6.4.2-2 are no longer required for this system.

Note 3: These penetrations connect Secondary Containment Zone I to a No-Zone. When Secondary Containment Zone I is isolated from the recirculation plenum, the above listed SCIVs in Table B3.6.4.2-2 are no longer required.

Note 4: These penetrations connect Secondary Containment Zone II to a No-Zone. When Secondary Containment Zone II is isolated from the recirculation plenum, the above listed SCIVs in Table B3.6.4.2-2 are no longer required.

Note 5: These penetrations connect the Railroad Bay to a No-Zone. When the Railroad Bay is a No-Zone, the above listed SCIVs in Table B3.6.4.2-2 are no longer required.

Note 6: These penetrations connect Secondary Containment Zone I to the Railroad Bay. The above listed SCIVs in Table B3.6.4.2-2 are not required if the Railroad Bay is a No-Zone and Zone I is isolated from the recirculation plenum OR if the Railroad Bay is aligned to Zone I.

Note 7: Due to a drain header containing multiple floor drains in different ventilation zones, drain plugs were installed in all of the drain header floor drains. To provide the passive Secondary Containment boundary only drain plugs in one ventilation zone are required to be installed.