United States Nuclear Regulatory Commission
Attachment II to Serial: RNP-RA/97-0081
(16 pages)

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING THE TECHNICAL SPECIFICATIONS CHANGE REQUEST TO CONVERT TO THE IMPROVED STANDARD TECHNICAL SPECIFICATIONS

SECTION 3.6, "CONTAINMENT SYSTEMS"

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.1-1	A 3	CTS 4.4.4.1 CTS 4.4.4.2 ITS SR 3.6.1.2	CTS 4.4.4.1 and 4.4.4.2 Require performance of specified containment tendon surveillances and structural test, respectively. ITS SR 3.6.1.2 requires verification of containment structural integrity in accordance with the Containment Tendon Surveillance Program. The mark-ups of CTS 4.4.4.1 and 4.4.4.2 (CTS page 4.4-5 through 4.4-12) are not provided. Thus a determination of whether the addition of ITS SR 3.6.1.2 is an administrative, more restrictive, or less restrictive change cannot be made.	Provide CTS pages 4.4-5 through 4.4-12 appropriately marked-up and any additional justifications need to support this change.	The marked-up pages for CTS pages 4.4-5 through 4.4-8 are included in the package for ITS Chapter 5.0, since the information contained is associated with ITS 5.5.6. CTS pages 4.4-9 through 4.4.12 are bases pages only and are not converted to ITS. A copy of CTS mark-up pages 4.4-5 through 4.4-12 is included in the Supplement 2 package to assist the review. The CTS required containment structural integrity tests have been completed and were submitted to the NRC by letter dated October 7, 1992. A single containment tendon surveillance remains to be completed in accordance with the tendon surveillance program.
3.6.1-2	A 4	CTS 4.4.2.b	CTS 4.4.2.b requires leak testing of containment isolation valves pressurized by the Penetration Pressurization System in accordance with the Containment Leakage Rate Testing Program. ITS SR 3.6.1.1 requires performance of containment visual examination and leakage rate testing in accordance with the Containment Leakage Rate Testing Program. The requirement for leak testing isolation valves pressurized by the Penetration Pressurization System is not retained in the ITS. See Item No. 3.6.1-7. Robinson is only authorized to use Appendix J Option B for Type A tests. Type B and C tests which this surveillance addresses must stay in the ITS.	This item to be resolved as part of the resolution of Item Number 3.6.1-7.	NUREG SR 3.6.1.1 is modified to exclude Type A testing requirements which are required to be performed in accordance with 10 CFR 50, Appendix J, Option B. A new SR 3.6.1.3 is added to the ISTS to provide an SR for the Type A testing. As a result ITS SR 3.6.1.1 requires leakage rate testing for Type B and C tests be performed in accordance with 10 CFR 50, Appendix J, Option A and ITS SR 3.6.1.3 requires leakage rate testing be performed in accordance with the Containment Leakage Rate Testing Program. DOC A4 is modified to reflect these changes in Supplement 2.

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.1-3	A 22	CTS 1.7.b	CTS 1.7.b requires the equipment hatch to be closed and sealed. The licensee states that this requirement is not retained in the ITS, since it is encompassed within the definition of OPERABLE for the containment. This is true; however, the definition of Containment OPERABILITY has been relocated to the Bases Section B 3.6.1 "Background Section." This change is a less restrictive (LA) change.	Provide additional discussion and justification for this less restrictive change.	It is believed the reviewer's reference to the definition for Containment OPERABILITY is referring to the CTS 1.7 definition for CONTAINMENT INTEGRITY. New DOC LA6 is provided in Supplement 2 to indicate that CTS 1.7.b is relocated in a general manner (i.e., non-verbatim) to the Bases for ITS 3.6.1. The CTS requirement that doors for the equipment hatch be sealed is not relocated verbatim.

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.1-4	A 22	CTS 1.7.e SR 3.6.1.1	CTS 1.7.e requires the containment uncontrolled leakage satisfy specified leakage limits. The licensee states that this requirement is not retained in the ITS, since it is encompassed within the definition of OPERABLE for the containment. This justification is in error. ITS SR 3.6.1.1 specifies the leakage limits for containment. Therefore, CTS 1.7.e is encompassed by this SR and is retained in the ITS.	Justification needs to be corrected to reflect this aspect.	DOC A22 is revised in Supplement 2 to state that CTS 1.7.e is encompassed within SR 3.6.1.1.
3.6.1-5	L 13 JFD 3 Bases JFD 26	CTS 3.6.1 LCO 3.6.1, ACTION A	A condition which permits the containment to be inoperable for up to 4 hours due to inoperable containment isolation valves is added to Condition A to ITS 3.6.1. The licensee states that this condition is necessary to establish consistency with the four hours permitted for an inoperable containment isolation valve. This ACTION statement is unnecessary and generic. ITS 3.6.3 specifies the action to be taken for inoperable containment isolation valves and ACTIONS Note 4 refers to ITS 3.6.1 ACTIONS only in the event that the inoperable valve results in containment leakage being exceeding.	Delete new ACTION A and associated Bases. Delete or revise justification L 13 as necessary.	In accordance with the NRC comment, the subject Action A is eliminated. Subsequent Actions are appropriately renumbered. Associated Bases are revised accordingly. DOC L13 and JFD 3 are eliminated. Bases JFD 26 is eliminated. These changes to the submittal are incorporated into Supplement 2.

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.1-6	R 1	CTS 3.3.5	CTS 3.3.5 precludes reactor criticality unless the Post Accident Containment Venting System valves are OPERABLE. This requirement is not retained in the ITS. The discussion of the relocation does not identify to what licensee controlled document the requirement is relocated.	Provide additional discussion stating where the CTS requirement is relocated and how the requirement is maintained and controlled.	This information is relocated to the Technical Requirements Manual (TRM). At the time of implementation the TRM will be incorporated by reference into the UFSAR.
3.6.1-7	JFD 1 Bases JFD 4	STS SR 3.6.6.1	The STS requires the visual examinations and leakage rate testing be performed in accordance with 10 CFR 50, Appendix J as modified by approved exemptions. The ITS modifies this requirement to "in accordance with the Containment Leakage Rate Testing Program." A staff SE issued 5/28/96 converts the CTS from 10 CFR 50 Appendix J Option A to 10 CFR 50 Appendix J, Option B for Type A tests only. Changes to the STS with regard to Option A versus Option B are covered by a letter from Christopher Grimes to Mr. David J. Modeen, NEI dated 11/2/95 and TSTF 52. The ITS is not in conformance with the letter or TSTF 52 as supplemented by staff comments, particularly when only a portion of Option B is being implemented.	Licensee to update submittal with regards to the 11/2/95 letter and updated TSTF 52 when OG provides revision to account for partial implementation of Option B or provide additional justification for deviations.	It is believed that this comment is associated with STS SR 3.6.1.1 instead of STS SR 3.6.6.1 as indicated. ITS SR 3.6.1.1 is modified to require testing Type B and C valves in accordance with 10 CFR 50, Appendix J, Option A, as modified by approved exemptions. ITS SR 3.6.1.3 as added which requires Type A testing be in accordance with the Containment Leakage Rate Testing Program. These changes to the submittal are incorporated into Supplement 2.

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.2-1	A 5	CTS 1.7.c CTS 3.6.2	CTS 1.7.c requires at least one door in the personnel air lock is properly closed and sealed. The licensee states that the ITS provides a separate specification for air locks. This is true; however, CTS 1.7 has been relocated to the Bases Section B3.6.1 "Background". This change is a less restrictive (LA) change.	Provide additional discussion and justification for this less restrictive change.	New DOC LA6 is provided in Supplement 2 to indicate that CTS 1.7.b is relocated in a general manner (i.e., non-verbatim) to the Bases for ITS 3.6.1. The CTS requirement that doors for the airlock be sealed is not relocated verbatim.
3.6.2-2	A 6	CTS 3.0	The justification contains some errors or discrepancies. Reference is made to Note 2 in the first paragraph, and states that it provides permission for entry and exit to containment. Note 2 does not allow this. Note1 does. Also, no mention in the justification is made that the second door in the air lock provides for leak tightness in the event of an inoperable door.	The errors and discrepancies should be corrected.	The incorrect reference to Note 2 is corrected in Supplement 2. Justification for an inoperable door was not provided in DOC A6 since this DOC is not associated with a change to permit one inoperable airlock door. DOC A6 is enhanced to provide a justification for opening the airlock door to permit access to repair the inoperable door.

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.2-3	A 7 JFD 1 Bases JFD 4	CTS 4.4.1 ITS SR 3.6.2.1	CTS 4.4.1 requires the personnel air lock leak rate test every six months. ITS SR 3.6.2.1 requires air lock leak rate testing in accordance with the Containment Leakage Rate Test Program. See Item Number 3.6.1-7.	This item to be resolved as part of the resolution of Item Number 3.6.1-7.	SR 3.6.2.1 is modified in Supplement 2 to reflect the airlock is tested in accordance with 10 CFR 50, Appendix J, Option A.
3.6.2-4	JFD 15 Bases JFD 20	STS SR 3.6.2.2	STS SR 3.6.2.2 requires verifying only one door in the air lock will open at a time at six month intervals. The interval is modified in the ITS from 6 months to 24 months. This modification is in accordance with TSTF 17; however, the Bases changes are not in accordance with TSTF 17.	Licensee to update submittal to be in accordance with TSTF 17 or provide additional justification for the deviations.	The bases are modified in Supplement 2 to incorporate the information from TSTF 17 revision 1 that was recently approved by NRC.

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.3-1	A 8	CTS 1.7.d	CTS 1.7.d requires all automatic containment isolation valves... "are OPERABLE or are secured closed except as stated in Specification 3.6.3". ITS 3.6.3 requires all containment isolation valves be OPERABLE. The justification states that the isolation valves are included in CTS definition 1.7. The ITS provides a separate specification for isolation valves. Therefore, this change involves an ITS presentation change only, and is administrative. This is not entirely correct. CTS 1.7.d is relocated to the Bases for LCO 3.6.1. Therefore, the change is a less restrictive (LA) change.	Provide additional discussion and justification for this less restrictive change.	New DOC LA5 and CTS mark-up is provided in Supplement 2 to indicate that CTS 1.7.d is relocated in a general manner (i.e., non-verbatim) to the Bases for ITS 3.6.1. The CTS requirement that all automatic trip valves required to be closed during accident conditions are operable or are secured closed is not relocated verbatim.
3.6.3-2	LA3	CTS 1.7.d	CTS 1.7.d requires manual valves qualifying as automatic isolation valves be secured closed. This requirement is moved to licensee controlled documents. However, the discussion does not identify to what controlled document the requirement it relocated. In addition, CTS 1.7 is also relocated to the Bases.	Provide additional discussion stating all the documents to where the requirement is relocated and how the requirement is controlled.	New DOC LA3 and CTS mark-up is provided in Supplement 2 to indicate that CTS 1.7.d is relocated in a general manner (i.e., non-verbatim) to the Bases for ITS 3.6.1. The CTS requirement that manual valves qualifying as automatic trip valves be secured closed is not relocated verbatim.

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.3-3	L 2	CTS None	No comparable CTS requirement exists for ITS 3.6.3 ACTION Note 1 which permits an inoperable penetration flow path be unisolated intermittently under administrative control. The less restrictive justification states "Permitting an INOPERABLE penetration to be unisolated intermittently...may be required to prevent a unit shutdown." The ACTION Note does not allow a flowpath unisolated intermittently in order to relax the Required Actions associated with a Condition resulting from a system made INOPERABLE by a closed containment isolation valve. The discussion does not state why or how the Note is applied such that a shutdown is averted. There is inadequate justification for this Less Restrictive change.	Provide discussion and justification for the less restrictive change.	CP&L intends to apply Note 1 to the Actions to ITS 3.6.3 in a manner consistent with the Notes and the associated Bases. It is not intended that Note 1 will be used to restart a Completion Time clock for a system declared inoperable is a result of inoperable containment isolation valve. A modified DOC L2 is incorporated into Supplement 2.
3.6.3-4	LA 4	CTS 3.6.4.3	CTS 3.6.4.3 requires the 42 inch purge supply and exhaust valves tested prior to use if not tested within the previous quarter. Additionally, CTS 3.6.4.3 specifies that the 42 inch valves are not to be cycled quarterly only for testing. This requirement is relocated to controlled documents, however, the justification does not specify which controlled document.	Provide additional discussion specifying the controlled document to which this requirement is relocated and how this document is controlled.	This information is relocated to the Technical Requirements Manual (TRM). At the time of implementation the TRM will be incorporated by reference into the UFSAR.
3.6.3-5	JFD 5 Bases JFD 20	ITS 3.6.3.1	A Note has been added to ITS SR 3.6.3.1 which states that the 42 inch and 6 inch valves may not be open simultaneously. There should be a corresponding ACTION Statement to reflect this condition.	Provide the corresponding ACTION and appropriate justification.	The default shutdown Action D.1 is modified in Supplement 2 to include this Condition. A change to the associated Bases is also included.

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.3-6	JFD 17 Base JFD 20	ITS SR 3.6.3.4	Changes are made to ITS SR 3.6.3.4 and associated Bases as a result of TSTF 46. The changes are not in accordance with TSTF 46.	Change the SR and associated bases to conform to the approved TSTF 46 or provide justification for the deviations.	Changes are made in Supplement 2 to incorporate TSTF 46, Rev.1 recently approved by the NRC.
3.6.3-7	JFD 24	STS SR 3.6.3.10	STS SR 3.6.3.10 requires each containment purge valve verified blocked to restrict the valve from opening greater than 50%. This requirement is not included in the ITS. The justification for removal of this requirement states the purge valves have been modified to restrict movement to 70 degrees. This is not adequate justification for removing this SR, since changes made to ACTION Note 1 (deletion of purge valves) and to the Bases provide the justification for the retention of this SR.	Modify ITS, associated Bases, and justification to retain this SR.	ISTS SR 3.6.3.10 added to ITS as SR 3.6.3.6 in Supplement 2. DOC M13 and JFD 24 is modified appropriately.
3.6.3-8	Bases JFD 19	Bases LCO	The licensee has substantially modified the paragraph on normally closed isolation valves, to allow normally closed automatic valves to be open if capable of closing automatically within the required time. This statement violates Action Note 1.	Return paragraph wording to STS wording or provide adequate justification and ITS wording to correct this major deviation.	The Bases statement regarding normally closed isolation devices is restored to ISTS. The text regarding listing of isolation devices is deleted since no such list exists in the HBRSEP, Unit No. 2 current licensing basis. JFD 19 is modified accordingly. These changes to the submittal are incorporated into Supplement 2.

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.3-9	Bases JFD 22	RA B.1	The licensee modified the Bases discussion for RA B.1 to state that check valves are not used to isolate penetrations. Require Action B.1 is the default condition for Condition A when both valves in a penetration are inoperable. Condition A allows check valve isolation with flow secured. Therefore, statement not needed.	Delete statement.	The statement is deleted in Supplement 2.

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.3-10	Bases JFD 23	RA B.1 RA C.1	The licensee provided clarifying words for the verification of isolation valve closure. A closed valve is considered operable from the perspective of containment isolation/integrity. Therefore, the clarifying words are unnecessary.	Delete the additional words and reinstate the STS words.	The additional text is deleted in Supplement 2 and the ISTS text is restored.
3.6.3-11	Bases JFD 24	Bases RA C.1 and C.2	The licensee added words to RA C.1 and C.2 for isolation devises outside containment and justification for the Completion Time of Prior to entering Mode 4 from 5 and 92 days. JFD 24 does not have anything to do with this specification 3.6.3. It refers to specification 3.6.6.	Provide the appropriate justifications for these changes.	The ITS Bases mark-up has been corrected to indicate JFD20 in Supplement 2.
3.6.3-12	NONE	Bases RA C.1 and C.2, and References	The licensee modified LCO RA C.1 and C.2 Completion Time in accordance with TSTF 30. The Bases has not been modified in accordance with TSTF 30.	Modify the Bases in accordance with TSTF 30 and provide adequate justification.	TSTF-30, R1 recently approved by the NRC is incorporated into Supplement 2.
3.6.3-13	NONE	Base SR 3.6.3.1 and SR 3.6.3.2	Changes are made to LCO SR 3.6.3.2 and SR 3.6.3.3 as a result of TSTF 45. The corresponding changes have not been made in the Bases section in accordance with TSTF 45.	Make the appropriate changes in accordance with the TSTF 45 or provide justification for the deviation.	The Bases are modified to reflect recently approved TSTF-45, Rev. 1 in Supplement 2.

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.4-1	M22	CTS 3.6.2 STS 3.6.4	STS 3.6.4 requires containment pressure maintained between [-0.3 and +1.5 psig]. CTS 3.6.2 requires containment pressure maintained between +1.0 psig and -1.0 psig. ITS 3.6.4 changes both of these requirements specifying Containment Pressure shall be maintained between -0.8 and +1.0. There is inadequate justification for the changed CTS requirement, which also is an STS deviation for which there is no discussion or justification.	Provide adequate justification for the more restrictive change. Provide justification for the STS deviation based on current licensing basis, system design, or operation constraints.	The ISTS values are bracketed indicating that the values are plant specific. JFD-26 is added for inclusion of the plant specific value. Although these values may be beyond the scope of review of the NRC Technical Specifications Branch, the change is within the scope of conversion to ITS, since the values are more restrictive than CTS limits, the NUREG has bracketed values, and the specific values provided are consistent with current analysis. A copy of the unit specific analysis is provided for technical NRC review by April 30, 1997.
3.6.4-2	NONE	Bases RA A.1	The licensee makes a change that refers back to LCO 3.6.1 Action B.1. The change in LCO 3.6.1 which necessitates this change is disapproved. See Item No. 3.6.1-5.	Delete change.	The change is deleted in Supplement 2.

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.6-1	M 19	CTS 3.0	No comparable CTS requirements exist for ITS 3.6.6 Condition F which requires entry into ITS 3.0.3 if two containment spray trains or any combination of 3 trains or more are INOPERABLE. Thus, CTS 3.0 applies which requires the plant be in Hot Shutdown in 8 hours and Cold Shutdown in an additional 30 hours (38 hours total). ITS 3.0.3 allows the operator 1 hour to take ACTION and then requires the plant be in Cold Shutdown within 37 hours (38 hours total). This requirement is an administrative change rather than a more restrictive change.	Provide discussion and justification for this administrative change.	Consistent with the Completion Time convention described in ITS 1.3, the Completion Times for LCOs are referenced from the time of discovery of the situation. The 37 hours specified in LCO 3.0.3 to be in MODE 5 do include the one hour to initiate the shutdown. Therefore the CTS allows 38 hours and the ITS allows 37 hours, and the change is more restrictive.
3.6.6-2	LA 2	CTS 4.5.1.3	CTS 4.5.1.3 requires Containment Spray tests performed with the isolation valves in the spray supply lines and spray additive tanks blocked closed. The details regarding testing of the Containment Spray System are not retained in the ITS. The justification does not state the plant controlled document these requirements have been moved to.	Provide additional discussion stating what plant controlled document these requirements are moved to and how this document is controlled.	This information is relocated to the Technical Requirements Manual (TRM). At the time of implementation the TRM will be incorporated by reference into the UFSAR.
3.6.6-3	Bases JFD 39	Applicable Safety Analysis	The licensee modified the discussion on total response time for containment spray based on the assumption that times given in the Bases are actual system response times. The Bases (STS) statements are actually the analytical or assumed time. Thus, the STS statement is correct.	Return to STS wording or provide adequate justification to show this is not true for Robinson.	The 60 second response time is the analytical value used in the analysis, but it is not based on an analysis using empirical data such as DG start time, block loading and spray line filling. The 60 seconds is considered to conservatively bound these events, but it is misleading to leave the ISTS text unmodified. JFD 39 is modified to add this clarification in Supplement 2.
3.6.6-4	Bases JFD 40	Applicable Safety Analysis	The licensee deleted the words "...required to perform the accident analyses" in the sentence on containment cooling system capacity on the basis of clarifying the statement. The change does provide added clarification, but deletes important information.	Return wording to STS wording.	Additional justification for the modification to the bases is provided in revised JFD 40 to Supplement 2.

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.7-1	A 20	CTS 4.5.2.2	CTS 4.5.2.2 verifies the position of the Containment Spray and Cooling Systems and Spray Additive System valves. The licensee has deleted the words "...during power operation". The justification for the containment spray and cooling system is classified as M33 while the same change for the spray additive system is A20. This change is more restrictive, not administrative.	Provide adequate justification to justify this more restrictive change.	DOC M33 is modified to include the spray additive system. The CTS mark-up is revised accordingly. These changes to the submittal are incorporated into Supplement 2. DOC A20 was not changed.
3.6.7-2	A 27	CTS 3.3.1.1.b	CTS Table 4.1.2 item 5 requires sampling of the NaOH concentration. The justification refers to CTS 3.3.1.1.b is not provided in the ITS 3.6 markup. It is provided in the ITS 3.5 markup, but CTS 3.3.1.1.b deals with accumulators not spray additive system.	Provide the current reference, appropriate marked up pages and adequate justification to justify this administrative change.	The reference to CTS 3.3.1.1.b is corrected to CTS 3.3.2.1.a in Supplement 2.
3.6.7-3	M 21	CTS 3.3.2.1.a ITS SR 3.6.7.2	The licensee states that including SR 3.6.7.2 is more restrictive than the CTS. However, CTS 3.3.2.1.a is equivalent to ITS SR 3.6.7.2. At most the addition is less restrictive based on ITS SR 3.6.7.2's surveillance frequency of 184 days. The CTS has no frequency specified; thus one can assume that the volume is checked at least once a shift.	Provide additional justification to justify this less restrictive JFD.	It is not correct to assume a frequency of once per shift when there is no surveillance requirement associated with the assumed frequency. CTS 3.3.2.1.a includes the requirement on the minimum volume in the Spray Additive tank, however a surveillance comparable to ITS SR 3.6.7.2 does not exist. DOC M21 describes SR 3.6.7.2 as an added SR and therefore the description of the change as a more restrictive requirement is correct
3.6.7-4	LA 2	CTS 4.5.1.3	See Item No. 3.6.6-7	See Item No. 3.6.6-7	There is no item No. 3.6.6-7. It is believed the correct Item No. is 3.6.6-2 since it also involves DOC LA2. This information is relocated to the Technical Requirements Manual (TRM). At the time of implementation the TRM will be incorporated by reference into the UFSAR.

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.7-5	L 9 L 10 JFD 7 Bases JFD 20	CTS 3.3.2.2.c CTS 3.3.2 CTS 3.0 STS 3.6.7 Associated Bases	The licensee has modified CTS 3.3.2.2.c and STS Condition A to state "Spray Additive System inoperable AND at least 100% of the Spray Additive System flow equivalent to a single OPERABLE Spray additive System train available to an OPERABLE containment spray train." Condition B has been added to account for all other inoperable conditions. This change is not reflected in the Robinson CTS. The Bases write-up reflects current WOG design. Therefore, the change is deemed to be generic and beyond the scope of review for a conversion.	Delete requested change.	The change is consistent with the CLB for HBRSEP, Unit No. 2. The CTS does not include a provision to permit the Spray Additive System to be inoperable (loss of safety function of the Spray Additive System) as permitted by ITS 3.6.7 Action A. CTS does permit one Containment Spray System flow path to be inoperable, which also renders the associated Spray Additive System flow path inoperable. In this circumstance, the remaining Containment Spray System flow path and its associated Spray Additive System flow path are OPERABLE. This circumstance is equivalent to ITS 3.6.7 Action A. This is not a generic change since the partial inoperability of the Spray Additive System is within the CLB for HBRSEP, Unit No. 2 while complete loss of the Spray Additive System is not within the CLB. Additional information to the Bases for ITS 3.6.7 Background, LCO and Action A is added in Supplement 2 to clarify this change.
3.6.7-6	Bases None	Bases LCO	The LCO description inserts 8.5 for STS number [7.2] for spray solution pH. There is no JFD associated with this change. In addition, the 11.0 maximum pH has not been changed. Other sections of this Bases uses the maximum number of 10.0.	Correct this discrepancy or provide adequate justification for the different numbers.	The values for pH in the LCO portion of the Bases are pH values considered conducive to iodine removal and are based on Standard Review Plan 6.5.2. The HBRSEP, Unit No. 2 design provides for spray solution pH which is within the values conducive to iodine removal. JFD28 is provided which explains the relationship of these pH values. The ISTS Bases mark-up is revised accordingly. These changes to the submittal are incorporated into Supplement 2.

Comment #	DOC or JFD	CTS/STS LCO	Description of Issue	Comments	HBRSEP, Unit No. 2 Response
3.6.8-1	A 25 M 23	CTS 4.4.2.c	The licensee makes changes to CTS 4.4.2.c to change the surveillance from a demonstration of sealing capability to performance of a leak test for the Isolation Seal Water System. The changes are labeled A25, and M23. The DOCs state A25 is not used, and M23 stated the change is administrative rather than more restrictive.	Provide a justification for the administrative change. Also, provide additional justification to show how the performance of a leakage test is more restrictive than the CLB leakage test. Also describe what is meant by "valves selected by the IVSW system" in M23.	SR 3.6.8.6 is modified to address another issue in ITS 3.6.3. The mark-up is revised accordingly and revised DOC M23 is provided. The reference to A25 is eliminated. These changes to the submittal are incorporated into Supplement 2.

United States Nuclear Regulatory Commission
Attachment III to Serial: RNP-RA/97-0081
(250 pages)

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SUPPLEMENT 2

SUPPLEMENT 2
CONVERSION PACKAGE SECTION 3.6
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 14 to Serial RNP-RA/96-0141.

Remove Page	Insert Page
a. Part 1, "Markup of Current Technical Specifications (CTS)"	
1-4 (ITS 3.6.1), 3.6-1 (ITS 3.6.1)	1.4 (ITS 3.6.1), 3.6.1 (ITS 3.6.1)
4.4-1 (ITS 3.6.1), 1-4 (ITS 3.6.2)	4.4-1 (ITS 3.6.1), 1-4 (ITS 3.6.2)
4.4-1 (ITS 3.6.2), 1-4 (ITS 3.6.3)	4.4-1 (ITS 3.6.2), 1-4 (ITS 3.6.3)
3.6-3 (ITS 3.6.3), 4.1-12 (ITS 3.6.3)	3.6-3 (ITS 3.6.3), 4.1-12 (ITS 3.6.3)
4.4-4 (ITS 3.6.3), 4.5-3 (ITS 3.6.7)	4.4-4 (ITS 3.6.3), 4.5-3 (ITS 3.6.7)
4.4-4 (ITS 3.6.8)	4.4-4 (ITS 3.6.8)
-	4.4-5 (ITS 5.5), 4.4-6 (ITS 5.5)
-	4.4-7 (ITS 5.5), 4.4-8 (ITS 5.6)
-	4.4-9 (Relocated Specifications)
-	4.4-10 (Relocated Specifications)
-	4.4-11 (Relocated Specifications)
-	4.4-12 (Relocated Specifications)
b. Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
1 through 19	1 through 25
c. Part 3, "No Significant Hazards Consideration (NSHC), And Basis for Categorical Exclusion From 10 CFR 51.22"	
16,17 and 18	16, 17 and 18
d. Part 4, Markup of NUREG-1431, Revision 1, `Standard Technical Specifications-Westinghouse Plants, ·(ISTS)"	
3.6-1	3.6-1
Inert 3.6.1-1 (No Page Number)	3.6.1a
3.6-2	3.6-2
Insert 3.6.1-2 (No Page Number)	3.6-2a
3.6-7, 3.6-11, 3.6-13, 3.6-14	3.6-7, 3.6-11, 3.6-13, 3.6-14
3.6-16, 3.6-42	3.6-16, 3.6-42
e. Part 5, "Justification of Differences (JFDs) to ISTS"	
1 through 4	1 through 4

SUPPLEMENT 2
CONVERSION PACKAGE SECTION 3.6
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 14 to Serial RNP-RA/96-0141.

	Remove Page	Insert Page
f.	Part 6, "Markup of ISTS Bases"	
	B 3.6-6, B 3.6-8	B 3.6-6. B3.6-8
	Insert B 3.6.1-1 (No Page Number)	B 3.6-8b
	B 3.6-9, B 3.6-9a	B 3.6-9, B 3.6-9a
	B3.6-10	B 3.6-10
	-	B 3.6-10a
	B 3.6-27, B 3.6-27a, B 3.6-28	B 3.6-27, B 3.6-27a, B 3.6-28
	B 3.6-28a, B 3.6-30, B 3.6-30a	B 3.6-28a, B 3.6-30, B 3.6-30a
	B 3.6-32,	B 3.6-32
	Insert B 3.6.3-7 (No Page Number)	B 3.6-32a
	Insert B 3.6.3-7a (No Page Number	B 3.6-33a
	B 3.6-34	B 3.6-34
	B 3.6-35, B 3.6-35a, B 3.6-36	B 3.6-35, B 3.6-35a, B 3.6-36
	Insert B 3.6.3-11 (No Page Number)	B 3.6-36a
	B 3.6-38, B 3.6-39, B 3.6-40	B 3.6-38, B 3.6-39, B 3.6-40
	-	B 3.6-40a
	B 3.6-41	B 3.6-41
	-	B 3.6.41a
	B 3.6-42, B 3.6-43, B 3.6-44, B 3.6-47	B 3.6-42, B 3.6-43, B 3.6-44, B 3.6-47
	B 3.6-109	B 3.6-109
	-	B 3.6-109a
	B 3.6-111	B 3.6-111
	-	B 3.6-111a
	B 3.6-112	B 3.6-112
	Insert B 3.6.7-1 (No Page Number)	B 3.6-112a
	B 3.6-XX, B 3.6-XX	B 3.6-XX (Sheet 1), B 3.6-XX (Sheet 2)
	B 3.6-XX, B 3.6-XX	B 3.6-XX (Sheet 3), B 3.6-XX (Sheet 3)
	B 3.6-XX	B 3.6-XX (Sheet 5)
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	1 through 4	1 through 4

SUPPLEMENT 2
CONVERSION PACKAGE SECTION 3.6
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 14 to Serial RNP-RA/96-0141.

	Remove Page	Insert Page
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS	
	3.6.-1, 3.6-2, 3.6-6, 3.6-9, 3.6-10, 3.6-11	3.6-1, 3.6-2, 3.6-6, 3.6-9, 3.6-10, 3.6-11
	-	3.6-11a
	3.6-19, 3.6-20	3.6-19, 3.6-20
i.	Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"	
	B 3.6-1, B 3.6-2, B 3.6-3, B 3.6-4, B 3.6-5, B 3.6-11, B 3.6-12, B 3.6-14, B 3.6-16, B 3.6-17, B 3.6-18, B 3.6-19, B 3.6-20, B 3.6-21, B 3.6-22, B 3.6-23, B 3.6-24, B 3.6-27, B 3.6-42, B 3.6-43, B 3.6-44, B 3.6-45, B 3.6-46, B 3.6-50	B 3.6-1, B 3.6-2, B 3.6-3, B 3.6-4 B 3.6-5, B 3.6-11, B 3.6-12, B 3.6-14 B 3.6-16 B 3.6-17, B 3.6-18, B 3.6-19, B 3.6-20, B 3.6-21, B 3.6-22, B 3.6-23 B 3.6-24, B 3.6-27, B 3.6-42, B 3.6-43 B 3.6-44, B 3.6-45 B 3.6-46, B 3.6-50
j	Part 10, "ISTS Generic Changes"	
	Cover Page	Cover Page
	-	TSTF-17 (16 pages)
	-	TSTF-30 (32 pages)
	-	TSTF-45 (26 pages)
	-	TSTF-46 (20 pages)

Specification 3.6.1

ITS

a. All non-automatic containment isolation valves not required for normal operation are closed and blind flanges are properly installed where required. — see 3.6.3

b. The equipment door is properly closed and sealed. — LA 6

c. At least one door in the personnel air lock is properly closed and sealed. — see 3.6.2

d. All automatic containment isolation trip valves required to be closed during accident conditions are operable or are secured closed except as stated in Specification 3.6.3. Manual valves qualifying as automatic containment isolation valves are secured closed. — see 3.6.3

[SR 3.6.1.1] e. The uncontrolled containment leakage satisfies Specification 4.4. — A22

1.8 QUADRANT POWER TILT

The quadrant power tilt is defined as the ratio of maximum to average of the upper excore detector currents or the lower excore detector currents, whichever is greater. If one excore is out of service, the three in-service units are used in computing the average. — see 3.6.1

1.9 DELETED

1.10 STAGGERED TEST BASIS

A Staggered Test Basis shall consist of:

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

ITS

Specification 3.6.1

A1

3.6 CONTAINMENT SYSTEM

Applicability

Applies to the integrity of reactor containment.

Objective

To define the operating status of the reactor containment for plant operation.

Specification

3.6.1 Containment Integrity

OPERABLE

[LCO 3.6.1] [App.]

a. The containment integrity (as defined in 1.7) shall not be violated unless the reactor is in the cold shutdown condition IN MODES 1, 2, 3 & 4

A2

b. The containment integrity shall not be violated when the reactor vessel head is removed unless a shutdown margin of at least 6% Δk/k is constantly maintained.

See 3.9.3

c. Positive reactivity changes shall not be made by rod drive motion when the containment integrity is not intact except during any one of the following evolutions:

L1

1. rod drop timing test
2. rod drive mechanism timing test
3. control rod exercise test
4. shutdown banks fully withdrawn and control banks withdrawn to ≤ 5 steps.

Add RA A.1
RA B.1
RA B.2

M1

Amendment No. 87, 140
Supplement 2

Specification 3.6.1

ITS

A1

4.4 CONTAINMENT TESTS

Applicability

Applies to containment leakage and structural integrity.

Objective

To verify that potential leakage from the containment and that pre-stressing tendon loads are maintained within acceptable values.

Specification

4.4.1 Operational Leakage Rate Testing

[SR 3.6.1.3] Required visual examinations and leakage rate testing shall be performed in accordance with the Containment Leakage Rate Testing Program, except for testing of the containment personnel air lock. The containment personnel air lock shall be tested every six months.

A5

For Type A tests

Sec 3.6.2

Add SR 3.6.1.1 — A5

Add SR 3.6.1.2 — A3

Amendment No. 107, 169
Supplement 2

Specification 3.6.2

a. All non-automatic containment isolation valves not required for normal operation are closed and blind flanges are properly installed where required. — See 3.6.3

b. The equipment door is properly closed and sealed. — See 3.6.1

c. At least one door in the personnel air lock is properly closed and sealed. — LAG

d. All automatic containment isolation trip valves required to be closed during accident conditions are operable or are secured closed except as stated in Specification 3.6.3. Manual valves qualifying as automatic containment isolation valves are secured closed. — See 3.6.3

e. The uncontrolled containment leakage satisfies Specification 4.4. — See 3.6.1

1.8 QUADRANT POWER TILT

The quadrant power tilt is defined as the ratio of maximum to average of the upper excore detector currents or the lower excore detector currents, whichever is greater. If one excore is out of service, the three in-service units are used in computing the average.

1.9 DELETED — See 1.0

1.10 STAGGERED TEST BASIS

A Staggered Test Basis shall consist of:

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

ITS

Specification 3.6.2

A1

4.4 CONTAINMENT TESTS

Applicability

Applies to containment leakage and structural integrity.

Objective

To verify that potential leakage from the containment and that pre-stressing tendon loads are maintained within acceptable values.

Specification

4.4.1 Operational Leakage Rate Testing

Required visual examinations and leakage rate testing shall be performed in accordance with the Containment Leakage Rate Testing Program ~~except for testing of the containment personnel air lock~~. The containment personnel air lock shall be tested ~~every six months~~ [SR 3.6.2.1].

see 3.6.1

in accordance with 10CFR50, Appendix J, option A, as modified by approved exemptions.

A7

Add SR 3.6.2.2

M3

Add SR 3.6.2.1, Notes 1 + 2

A26

Specification 3.6.3

a. All non-automatic containment isolation valves not required for normal operation are closed and blind flanges are properly installed where required. (LA1)

b. The equipment door is properly closed and sealed. ← See 3.6.1

c. At least one door in the personnel air lock is properly closed and sealed. ← See 3.6.2

d. All automatic containment isolation trip valves required to be closed during accident conditions are operable or are secured closed except as stated in Specification 3.6.3. (LA5) Manual valves qualifying as automatic containment isolation valves are secured closed. (LA3)

e. The uncontrolled containment leakage satisfies Specification 4.4. ← See 3.6.1

1.8 QUADRANT POWER TILT

The quadrant power tilt is defined as the ratio of maximum to average of the upper excore detector currents or the lower excore detector currents, whichever is greater. If one excore is out of service, the three in-service units are used in computing the average.

1.9 DELETED

See 1.0

1.10 STAGGERED TEST BASIS

A Staggered Test Basis shall consist of:

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

ITS

Specification 3.6.3

3.6.4 Containment Purge and Vent Valves

[SR 3.6.3.1] 3.6.4.1 During periods when Containment integrity is required, the Containment Purge Supply and Exhaust Isolation Valves (42") or the Pressure and Vacuum Relief Valves (6") may be opened only for safety related reasons including operational testing and surveillances.

MODE 1, 2, 3 & 4

[Note SR 3.6.3.1] 3.6.4.2 ~~When the RCS is greater than 200°F,~~ the 42" and 6" valves may not be open simultaneously.

A13

3.6.4.3 ~~The 6" and 42" valves will be tested in accordance with the frequency and operability requirements specified in the Robinson plant IST program except that the 42" valves will be tested prior to use if not tested within the previous quarter. Otherwise the 42" valves will not be cycled quarterly only for testing purposes.~~

LA4

Basis

The Reactor Coolant System must be in the conditions of cold shutdown in order to relax Containment integrity. This ensures the release of radioactive materials from the containment atmosphere will limit the site boundary radiation doses to within the dose guideline values of 10 CFR Part 100 during accident conditions.

The shutdown margins are selected based on the type of activities that are being carried out. The 6% $\Delta k/k$ shutdown margin during refueling precludes criticality, even though fuel is being moved and provides sufficient time for the reactor operator to recognize an inadvertent boron dilution event and take corrective actions to mitigate the effects[13]. When the reactor head is not to be removed, the specified cold shutdown margin of 1% $\Delta k/k$ precludes criticality.

Regarding internal pressure limitations, the containment design pressure of 42 psig would not be exceeded if the internal pressure before a major loss-of-coolant accident were as much as 2 psig.[1] The containment is designed to withstand an internal vacuum of 2.0 psig.[2]

A14

Add to Condition D

M32

"OR 42" penetration (Supply or Exhaust) purge valves open and 6" penetration (pressure or vacuum relief) valves open simultaneously."

Specification 3.6.3
A1

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

-ITS

		Check	Frequency	Maximum Time Between Tests
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA*
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA
5.	Containment Isolation Trip	Functioning	Each refueling shutdown	NA
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA
7.	Service Water System	Functioning	Each refueling shutdown	NA
8.	DELETED			
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days
11.	DELETED			
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days

See 3.1.4
See 3.4.10
See 3.7.1
M11
18 Months
[See 3.6.3.5]
See 3.9.1
See 3.7.7
See 3 4.13
See 3 8.3
See 3.7.1
M12
Verify each automatic containment isolation valve that is not locked, sealed or otherwise secured in position actuates to the isolation position on an actual or simulated actuation signal.

Supplement 2

ITS

Specification 3.6.3

4.4.2 Isolation Valve Tests

[SR 3.6.3.4] a. Isolation valves ~~shall be tested for operability at each refueling~~. Verify isolation time of each automatic (A13) is within limits when tested in accordance with the Inservice Testing Program (A1)

b. Isolation valves which are pressurized by the penetration pressurization system will be leak tested in accordance with the containment leakage rate testing program. — See 3.6.1

c. The isolation seal water system shall be operated to demonstrate the capability for sealing the associated containment isolation valves at each refueling. — See 3.6.8

4.4.3 Post Accident Recirculation Heat Removal System

a. The portion of the Residual Heat Removal System that is downstream of the first isolation valve outside the containment shall be tested either by use in normal operation or hydrostatically tested at 350 psig at the interval specified below.

b. Visual inspection shall be made for excessive leakage from components of the system. Any visual leakage that cannot be stopped at test conditions shall be measured by collection and weighing or by another equivalent method. — See 5.5

c. The acceptance criterion is that maximum allowable leakage from the recirculation heat removal system components (which includes valve stems, flanges and pump seals) shall not exceed two gallons per hour.

d. Repairs shall be made as required to maintain leakage with the acceptance criterion in c. above.

Add SR 3.6.3.2
SR 3.6.3.3
SR 3.6.3.6 — M13

Specification 3.6.7

A1

[SR 3.6.7.1]
4.5.2.2

31 days

M33

At monthly intervals during power operations each valve (manual, power operated, or automatic) in the safety injection (low and high pressure) and containment spray system flow paths that is not locked, sealed or otherwise secured in position shall be verified as correctly positioned.

see 3.5.2

Basis

The Safety Injection System and the Containment Spray System are principal plant safeguards that are normally inoperative during reactor operation. Complete systems tests cannot be performed when the reactor is operating because a safety injection signal causes reactor trip, main feedwater isolation and containment isolation, and a Containment Spray System test requires the system to be temporarily disabled. The method of assuring operability of these systems is therefore to combine systems tests to be performed during annual plant shutdowns, with more frequent component tests, which can be performed during reactor operation.

A14

The systems tests demonstrate proper automatic operation of the Safety Injection and Containment Spray Systems. A test signal is applied to initiate automatic action and verification made that the components receive the safety injection in the proper sequence. The test demonstrates the operation of the valves, pump circuit breakers, and automatic circuitry.[1][2][4]

During reactor operation, the instrumentation which is depended on to initiate safety injection and containment spray is generally checked each shift and the initiating circuits are tested monthly (in accordance with Specification 4.1). The testing of the analog channel inputs is accomplished in the same manner as for the reactor protection system. The engineered safety features logic system is tested by means of test switches to simulate inputs from the analog channels. The test switches interrupt the logic matrix output to the master relay to prevent actuation. Verification that the logic is accomplished is indicated by the matrix test light. Upon completion of the logic checks, verification that the circuit from the logic matrices to the master relay is complete is accomplished by use of an ohmmeter to check continuity. In

A1

4.4.2 Isolation Valve Tests

a. Isolation valves shall be tested for operability at each refueling. — See 3.6.3

b. Isolation valves which are pressurized by the penetration pressurization system will be leak tested in accordance with the containment leakage rate testing program. — See 3.6.1

[SR 3.6.8.6] Verify

c. The isolation seal water system shall be operated to demonstrate the capability for sealing the associated containment isolation valves at each refueling. [18 months] M29

4.4.3 Post Accident Recirculation Heat Removal System

a. The portion of the Residual Heat Removal System that is downstream of the first isolation valve outside the containment shall be tested either by use in normal operation or hydrostatically tested at 350 psig at the interval specified below.

b. Visual inspection shall be made for excessive leakage from components of the system. Any visual leakage that cannot be stopped at test conditions shall be measured by collection and weighing or by another equivalent method.

c. The acceptance criterion is that maximum allowable leakage from the recirculation heat removal system components (which includes valve stems, flanges and pump seals) shall not exceed two gallons per hour.

d. Repairs shall be made as required to maintain leakage with the acceptance criterion in c. above. — See 5.5

Header flow rate is:
a. ≤ 52.00 cc/min for Header A,
b. ≤ 16.50 cc/min for Header B,
c. ≤ 32.50 cc/min for Header C, and
d. ≤ 23.00 cc/min for Header D. — M23

Add SR 3.6.8.1
SR 3.6.8.2
SR 3.6.8.3 — M27

Add SR 3.6.8.3 — A24

ITS

e. If repairs are not completed within 7 days, the reactor shall be shut down and depressurized until repairs are effected and the acceptance criterion in c. above is satisfied.

f. Tests of the recirculation heat removal system shall be conducted on a refueling interval.

g. The emergency core cooling system sump suction line penetration will be leak tested on a refueling interval.

h. The bellows expansion joints and the suction line between the expansion joints and the valve will be visually inspected on a refueling interval.

See 5.5.2

4.4.4 Operational Surveillance Program

4.4.4.1 Inspection of Surveillance Tendons

The first of two surveillance tendons will be removed from its embedded location and inspected after five years of operation and the second tendon will be removed and inspected after 25 years of operation.

See 5.5.6

[5.5.16] 4.4.4.2 Containment Structural Test

a. The containment structure will be pressurized to the design pressure, P, (42 psig) three and 20 years after operation. The test may coincide with the in-service inspection shutdown occurring closest to that interval.

A27

Copy from ITS 5.5

ITS

[5.5.16]

Specification 5.5

(A1)

b. During each test, measurements and observations will be made as listed below to provide a basis for comparison of response recorded at the time of the initial proof test.

(1) Radial displacements of the cylinder will be measured at the same elevations and azimuths selected for the initial proof test.

(2) Vertical displacement of the cylinder at the top relative to the foundation slab will be measured at the same azimuths selected for the initial proof test, to determine the vertical elongation of the side wall.

(A27)

(3) In addition to the displacement data, the containment structure will be visually inspected for cracks and crack patterns at representative locations over the structure where crack pattern, size and spacing were observed and recorded during the initial proof test.

c. Instrumentation will include dial gages and scales. Theodolites or equivalent will be used to read pre-positioned targets. All gages and targets will be installed immediately prior to each test. All measuring devices including theodolites, or equivalent, and dial gages will be such as to provide the same degree of precision as used in the initial proof test.

Copy from ITS 5.5

Specification 5.5 (A1)

ITS

4.4.4.3 Acceptance Criteria

a. The removed tendon will be sent to a commercial laboratory qualified to perform material tests and analyses. The tendon bars will be removed from the sheath and the grout removed. A visual inspection will be performed to detect and record evidence of corrosion. Tensile tests will be performed on selected bars to determine ultimate strengths. The results of these tests will be compared with the original properties of the original bar material to ascertain significant changes that have occurred. A qualified engineering firm will be retained to assess the results of these tests and to report thereon.

See 5.5.6

[5.5.16]

b. Observation of the structural test at design pressure indicating no significant differences in containment growth and crack pattern spacing and width from that during the proof test shall be considered as demonstrating the continual integrity of the structure. It is realized that the deflections, in the prestressed direction particularly, will be small, that the significance of differences in these small deflections will be difficult to evaluate, and therefore that only a gross difference in the structure, such as a large loss of prestress force, would be apparent from the measurements. The difference in measurements, if any, will be examined considering the predictable range of variation of time dependent changes in material properties, the thermal conditions at the time of the test, instrument error and other pertinent factors.

A27

Copy from ITS 5.5

ITS
[5.6.7]

c. Notification of the pending test, either of a sample tendon or the containment structural test, along with detailed acceptance criteria shall be forwarded to the Nuclear Regulatory Commission two months prior to the actual test. Within six months of conducting the test, a report and evaluation shall be submitted to the NRC.

Basis

The containment is designed for an accident pressure of 42 psig.[1] While the reactor is operating, the internal environment of the containment will be air at approximately atmospheric pressure and a maximum temperature of 120°F. Post-accident conditions are documented in the Updated Final Safety Analysis Report.

Prior to initial operation, the containment was strength tested at 48.3 psig and then was leak-tested. The acceptance criterion for this preoperational leakage rate test was established as 0.08 weight percent of the contained air per 24 hours at the design pressure of 42 psig. This acceptable leakage rate was equivalent to a 0.1 weight percent of the contained steam-air atmosphere per 24 hours at 42 psig and 263°F. The acceptance criteria for Integrated Leakage Rate Tests (ILRTs) is now defined in Technical Specifications Section 6.12. These leakage rates are consistent with the construction of the containment.[2] which is equipped with a penetration pressurization system which pressurizes penetrations, double gasketed seals, and some isolation valve spaces. The channels over all of the containment liner welds were independently leak-tested during construction.

(A17)

The original safety analysis has been performed on the basis of a leakage rate of 0.10% per 24 hours at 42 psig and 263°F. With this leakage rate and with minimum containment engineered safety features operating, the public exposure would not exceed 10 CFR 100 guideline values in the event of the design basis accident.[3]

Copy from ITS 5.6

Relocated Specifications

The performance of a periodic integrated leak rate test during plant life provides a current assessment of potential leakage from the containment in case of an accident that would pressurize the interior of the containment.

The specified frequency of periodic integrated leak rate tests is based on the following major considerations. First is the low probability of leaks in the liner, because of (a) the test of the leak tightness of the welds during erection; (b) conformance of the complete containment to a low leakage rate limit at the design pressure of 42 psig during preoperational testing which is consistent with 0.1% leakage at design basis accident (DBA) conditions; and (c) absence of any significant stresses in the liner during reactor operation.

A2

Amendment No. 107, 169

Copy from Relocated Specifications

Relocated Specification

Secondly, the penetration pressurization system is capable of continuously or periodically monitoring leakage from potential leak paths, such as penetrations, double gasketed seals, and spaces between certain containment isolation valves. Total leakage from the system is measured by summing the recorded flows in each of the four penetration headers. The penetration pressurization system is a qualified system for continuous or intermittent pressurization of individual or groups of containment penetrations as allowed in 10 CFR 50, Appendix J, Items III.B.1.(b), III.B.3.(b), and III.C.1.

A flow sensing device is located in each of the headers supplying make-up air to the four pressurized zones. A leakage rate alarm is provided in each of the four indicating channels to alert the operator in the control room. The flow measurement accuracy is within ±1%. A flow of 0.04% of the containment volume per day at 42 psig is approximately 0.58 ft^3/minute (2.34 scfm). The flowmeters are capable of indicating leakage well within these limits.

Containment isolation valves are designed to incorporate positive barriers to prevent or minimize leakage through the valves under design basis accident conditions. Several isolation valves are pressurized by the penetration pressurization system to prevent leakage. The remaining valves either receive Isolation Seal Water System water or are installed in systems that are part of a closed system within the containment or operate at system pressures greater than the design pressure of 42 psig in the post-accident condition. These design features provide positive means to prevent containment leakage through the containment isolation valves.

The limiting leakage rates from the recirculation heat removal system are judgment values based primarily on assuring that the components could operate without mechanical failure for a period on the order of 200 days after a design basis accident. The test pressure, 350 psig, achieved either by normal system operation or hydrostatically testing, gives an adequate margin over the highest pressure within the system after a design basis accident.

A2

Amendment No. 33, 169
Basis Change, PNSC July 25, 1995
Copy from Relocated Specifications

Related Specifications

A recirculation heat removal system leakage of 2 gal/hr will limit off-site exposure due to leakage to insignificant levels relative to those calculated for leakage directly from the containment in the design basis accident.

In case of failure to meet the acceptance criteria for leakage from the recirculation heat removal system or the penetrations, it may be possible to effect repairs within a short time. If so, it is considered unnecessary and unjustified to shut down the reactor.

The emergency core cooling system sump suction line penetration consists of an expansion joint welded to a pipe and sleeve going through the containment wall. Failure of the suction line or penetration would be identified by testing as per 10 CFR 50 Appendix J. The bellows expansion joint is welded to the suction line and guard pipe and meets the requirements of Section III of the ASME Boiler and Pressure Vessel Code.[7]

The surveillance tendons consist of two tendons similar to the service tendons, but shorter in length. Each tendon consists of six-1-3/8" bars in a 6-inch pipe sheath, with anchor plates, prestressing hardware and grout pipe identical except for length to that of the tendons installed in the containment. They are embedded in a section of concrete approximately the same environment as that of the service tendons. When a tendon is removed for inspection it will be sent to a commercial laboratory qualified to perform material tests and analyses. Visual inspection for corrosion and tensile tests will be performed to determine if any significant changes have occurred.[8]

A2

Amendment No. 33
Basis Change November 10, 1995
Copy from Related Specifications

Relocated specifications

The containment structural test pressure will be 42 psig. This pressure is selected for consistency with the initial acceptance test. The initial acceptance test pressure was selected so as to impose, insofar as practical with a static pressure test, maximum stresses on the principal strength elements reasonably consistent with those stresses imposed by the design basis conditions. The initial acceptance test permits verification that the structural response is consistent with the design. The periodic tests thereafter permits verification that the structural response is consistent with the initial response and will thus provide a demonstration of the continued integrity of the structure.

The structural test intervals selected concentrate the test program in the period during the life of the plant where corrosion of the bar tendons, as opposed to the more sensitive wire tendons, would be of greater concern. The two sample tendons provide a check on the possible presence of a corrosive mechanism not yet sufficiently advanced to affect the results of a pressure test. The sample tendons are capable of being removed at any time. The pressure tests may be coordinated with an in-service inspection planned at approximately the same time.

The requirements for structural tests and the acceptance criteria are subject to review and modification based upon the results obtained from the initial pre-service proof test. The results of this test shall be provided to the NRC following completion of the test. The report shall include a discussion of the criteria upon which the adequacy of the containment structure was judged.

A2

References

(1) FSAR Section 5.1.2.3
(2) FSAR Section 5.6.2.2
(3) FSAR Section 14.3.5
(4) Deleted
(5) Deleted
(6) FSAR Section 5.2.2
(7) FSAR Volume 4, Tab VI, Question 6-5
(8) FSAR Volume 4, Question III.E.2

Copy from Relocated Specifications

ADMINISTRATIVE CHANGES

A1 In the conversion of the H.B. Robinson Steam Electric Plant (HBRSEP), Unit No.2 Current Technical Specification (CTS) to the proposed plant specific Improved Technical Specifications (ITS) certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make ITS consistent with the conventions in the - Standard Technical Specifications, Westinghouse Plants NUREG-1431, Rev 1 (i.e., Improved Standard Technical Specifications (ISTS)).

A2 CTS 3.6.1 specifies requirements for containment integrity. The specific terminology states that, ". . . containment integrity (as defined in 1.7) shall not be violated unless the reactor is in the cold shutdown condition." The specific wording for CTS 3.6.1.a provides the plant condition for which containment integrity is not required. ITS LCO 3.6.1 provides an equivalent requirement but it is stated in terms of when the containment is required to be OPERABLE. Therefore, this is an administrative change and is consistent with ISTS.

A3 CTS 4.4.4.1 requires performance of specified tendon surveillances and CTS 4.4.4.2 requires performance of specified structural tests. A requirement for verification of overall containment structural integrity is implied but not specifically delineated in CTS 4.4.4.1 and 4.4.4.2. ITS SR 3.6.1.2 includes a specific surveillance requirement associated with overall Containment Structural Integrity. Therefore, this is an administrative change and is consistent with ISTS.

A4 CTS 4.4.2.b requires leak testing of isolation valves pressurized by the penetration pressurization system in accordance with the Containment Leakage Rate Testing program.

The requirements for leak testing of isolation valves pressurized by the penetration pressurization system is not retained as a separate requirement in the ITS. ITS SR 3.6.1.1 requires performance of containment leakage rate testing for Type B and C tests, except for containment air lock testing, be in accordance with 10 CFR 50, Appendix J, Option A as modified by approved exemptions. ITS 3.6.2 provides requirements for containment air lock testing. CTS 6.12, Containment Leakage Rate Testing Program, requires Type B and C leakage rate testing be performed in accordance with 10 CFR 50, Appendix J, Option A. Although CTS 6.12 does not explicitly provide for approved exemptions to 10 CFR 50, Appendix J, Option A, this requirement is implicit, since an approved exemption effectively modifies the requirements of Appendix J for the applicable facility. Therefore, this is an administrative change and is consistent with ISTS.

A5 CTS 4.4.1 requires visual examinations and leakage rate testing be performed in accordance with the Containment Leakage Rate Testing Program. ITS SR 3.6.1.1 requires leak rate testing for Type B and C tests be performed in accordance with 10 CFR 50, Appendix J, Option A including approved exemptions. SR 3.6.1.1 additionally specifies the leakage rate acceptance criterion is $\leq 1.0\ L_a$. However, during the first unit startup following testing performed in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions, the leakage rate acceptance criteria are $< 0.6\ L_a$ for the Type B and Type C test.

The requirements for Type B and C leak rate testing to meet 10 CFR 50, Appendix J, Option A and the SR 3.6.1.1 explicit requirements regarding the acceptance criteria for the Type B and C tests are current requirements in CTS 6.12, Containment Leakage Rate Testing Program. Therefore, this is an administrative change.

A6 CTS does not explicitly address entry and exit to permit repair of the airlock door. Although not explicitly addressed, opening the OPERABLE door for short periods to permit entry and exit, can be accomplished well within the eight hour limitation specified by CTS 3.0. ITS 3.6.2 Note 1 explicitly permits entry and exit to permit repairs to airlock components. The clarification provided by the applicable ITS bases characterizes such entries as short in duration with the OPERABLE door closed immediately after each entry and exit. Although, ITS 3.6.2, Action Note 1 provides explicit permission for entry and exit, during such times the OPERABLE containment door is opened to permit passage, ITS LCO 3.6.1 is not satisfied. ITS 3.6.1 Required Action (RA) A.1 permits one hour to restore the containment to OPERABLE status. Consequently, with the OPERABLE air lock door opened for a short duration, there is no technical difference in the actions required by both CTS and ITS. It is permissible to enter the air lock through the OPERABLE door, which means there is a short time during which the containment boundary is not intact (during access through the OPERABLE door). The ability to open the OPERABLE door, even if it means the containment boundary is temporarily not intact, is acceptable due to the low probability of an event that could pressurize the containment during the short time in which the OPERABLE door is expected to be open.

CTS 3.6.1 requires Containment Integrity, as defined in 1.7, be satisfied when the reactor is not in Cold Shutdown. CTS 1.7, Containment Integrity, includes a provision that uncontrolled leakage be within limits. Therefore, Containment Air Lock leakage being within limits as an implicit requirement for containment integrity and for containment OPERABILITY. ITS 3.6.2 Action Note 2 explicitly requires entry into Conditions and Required Actions for ITS 3.6.1. Therefore, these are administrative changes and are consistent with ISTS.

A7 CTS 4.4.1 requires containment air lock testing every six months. Although not explicitly mandated in CTS 4.4.1, air lock testing requirements specified in 10 CFR 50, Appendix J, Option A as modified by approved exemptions are applicable. ITS SR 3.6.2.1 requires air lock testing be performed in accordance 10 CFR 50, Appendix J, Option A, as modified by approved exemptions. Therefore, this is an administrative change and is consistent with ISTS.

A8 CTS 3.6.1 specifies requirements for containment integrity. The specific terminology states that, ". . . containment integrity (as defined in 1.7) shall not be violated unless the reactor is in the cold shutdown condition." The isolation valves are included in the CTS definition for Containment Integrity. ITS provides a separate specification for isolation valves. This change involves an ITS "presentation" change only. Technical changes are discussed in other Discussion of Changes (DOC). Therefore, this is an administrative change and is consistent with ISTS.

A9 A item comparable to ITS 3.6.3 Action Note 2 does not exist. ITS 3.6.3 Action Note 2 permits separate Condition entry for each flow path. CTS does not include a generic preclusion for multiple entries into a condition. Consequently, unless specifically restricted by the wording of the individual specifications, multiple entries into a condition are permitted. CTS 3.6.3 which is comparable to ITS 3.6.3 Required Action (RA) A.1 and RA C.1 specifically includes multiple valves and penetrations in its applicability. Therefore, this is an administrative change and is consistent with ISTS.

A10 A note comparable to ITS 3.6.3 Action Note 3 does not exist. ITS 3.6.3 Action Note 3 requires Entry into Applicable Condition and Required Actions for systems made inoperable by containment isolation valves. Although not explicitly stated, this requirement is encompassed by the application of the CTS definition 1.3, OPERABLE - OPERABILITY. Therefore, this is an administrative change and is consistent with ISTS.

A11 A note comparable to ITS 3.6.3 Action Note 4 does not exist. ITS 3.6.3 Action Note 4 requires Entry into Applicable Condition and Required Actions of LCO 3.6.1, Containment, when isolation valve leakage results in exceeding the overall containment leakage rate acceptance criteria. Although not explicitly stated, this requirement is encompassed by the application of the CTS definition 1.7 CONTAINMENT INTEGRITY. Therefore, this is an administrative change and is consistent with ISTS.

A12 CTS 3.6.3 permits 4 hours to restore an inoperable containment isolation valve to OPERABLE status or to complete another specified action. This provision is not explicitly retained in ITS 3.6.3. ITS LCO 3.0.2 permits exiting a Condition and associated Required Actions when the

Condition no longer exists. Therefore, this is an administrative change and is consistent with ISTS.

A13 CTS 3.6.4.3 explicitly requires testing the 6" containment vent valves and the 42" containment purge valves in accordance with the Inservice Testing (IST) program. CTS 4.4.2.a requires operability testing of containment isolation valves every refueling. The CTS requirement for testing isolation valves every refueling is considered to mean at a refueling frequency, not necessarily during a refueling outage. The IST requirements for valve stroke time testing isolation valves of either quarterly or during cold shutdown (if not performed in the previous 92 days) is more restrictive than the CTS requirements for valve testing at a refueling frequency. The ITS requirements CTS 3.6.4.3 and isolation valve testing requirements of 4.4.2.a are retained in the ITS since they are encompassed in ITS SR 3.6.3.4. IST SR 3.6.3.4 does not explicitly delineate testing specific valves but requires testing containment isolation valve in accordance with the IST Program. Since testing of containment isolation valves is currently required by 10 CFR 50.55(a) and American Society of Mechanical Engineers (ASME) Boiler and pressure Vessel Code, Section XI, this is an administrative change and is consistent with ISTS.

A14 The CTS bases are not retained in the ITS, but are replaced in their entirety. The ITS includes significantly expanded and improved bases. The bases do not define or impose any specific requirements but serve to explain, clarify and document the reasons (i.e., bases) for the associated specification. The bases are not part of the Technical Specifications required by 10 CFR 50.36. Therefore, this is an administrative change and is consistent with ISTS.

A15 CTS 3.3.2.1, 3.3.2.2 and 3.3.2.3 collectively impose requirements for Containment Spray and Cooling Systems with the reactor critical and in hot shutdown. These CTS operating conditions encompass ITS MODEs 1, 2, 3 and 4. ITS 3.6.6 specifies requirements for Containment Spray and Cooling Systems in MODEs 1, 2, 3 and 4. Therefore, this is an administrative change and is consistent with ISTS.

A16 CTS 3.3.2.1.d specifies essential features including valves, controls, dampers and piping associated with Containment Cooling and Spray Additive System be OPERABLE. CTS 3.3.2.1.d is not retained in ITS since these requirements are encompassed within the definition of OPERABLE. Therefore, this is an administrative change and is consistent with ISTS.

A17 CTS 3.3.2.1.c requires four fan coolers to be OPERABLE. ITS 3.6.6 specifies Containment Cooling Trains be OPERABLE. Each Containment Cooling Train is comprised of two fan cooler units. Therefore, this is an administrative change and is consistent with ISTS.

A18 A note comparable to ITS 3.6.3 Action Note 5 does not exist. ITS 3.6.3 Action Note 5 requires Entry into Applicable Condition and Required Actions of LCO 3.6.8, Isolation Valve Seal Water (IVSW) System. Although not explicitly stated, this requirement is encompassed by the application of the CTS definition 1.7 CONTAINMENT INTEGRITY. Therefore, this is an administrative change and is consistent with ISTS.

A19 Although not uniquely delineated as a CTS surveillance requirement, CTS 4.0 requires testing ASME Code 1, 2 and 3 pumps in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda. The Containment Spray pumps are included within the scope of this testing requirement. ITS 3.6.6.4 requires verification of the Containment Spray pumps developed head in accordance with the IST program. Therefore, this is an administrative change and is consistent with ISTS.

A20 CTS 3.3.2.1, 3.3.2.2 and 3.3.2.3 collectively impose requirements for the Spray Additive System with the reactor critical and in hot shutdown. These CTS operating conditions encompass ITS MODEs 1, 2, 3 and 4. ITS 3.6.7 specifies requirements for the Spray Additive System in MODEs 1, 2, 3 and 4. Therefore, this is an administrative change and is consistent with ISTS.

A21 Not used.

A22 CTS 1.7.e requires containment uncontrolled leakage to satisfy Specification 4.4. ITS SR 3.6.1.1 provides leakage limits for containment. CTS 1.7.e is therefore encompassed in SR 3.6.1.1. Therefore, this is an administrative change and is consistent with ISTS.

A23 Not used.

A24 Although not uniquely delineated as a CTS surveillance requirement, CTS 4.0 requires testing ASME Code 1, 2 and 3 valves in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda. The IVSW air operated header injection valves are included within the scope of this testing requirement. ITS SR 3.6.8.3 requires testing the air operated header injection valve in accordance with the IST program. Therefore, this is an administrative change and is consistent with ISTS.

A25 Not used.

A26 CTS Notes comparable to the Notes to SR 3.6.2.1 do not exist. Note 1 provides clarification regarding the impact of an inoperable airlock door upon previous leakage test results. Failure of an airlock door leak test does not invalidate the previous successful performance of the overall air lock leakage test and therefore render the overall airlock

inoperable, since either airlock door provides a containment barrier. Note 2 explicitly states what is implicitly required. Therefore, these are administrative changes and are consistent with ISTS.

A27 CTS Table 4.1.2, Item 5 requires sampling of NaOH concentration. CTS 3.3.2.1.a specifies the limit on NaOH concentration. ITS SR 3.6.7.3 requires verification that boron concentration is above the limit. Therefore, this is an administrative change and is consistent with ISTS.

A28 CTS 3.3.6.1 explicitly requires essential features including valves, interlocks, and piping associated with the IVSW system are OPERABLE. These explicit requirements are not retained in the ITS but are encompassed within the definition of OPERABLE. Therefore, this is an administrative change.

A29 An explicit requirement comparable to ITS 3.6.2 RA C.1 does not exist. Under this condition, CTS actions are specified by CTS 3.0 and CTS Definition 1.7. CTS 3.0 requires the unit be placed in Hot Shutdown within 8 hours and Cold Shutdown within an additional 30 hours. The shutdown can be avoided by confirming that containment leakage is within the specified limits. ITS 3.6.2 RA C.1 requires action be initiated immediately to evaluate the containment leakage rate. Therefore, this is an administrative change and is consistent with ISTS.

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 With containment integrity not intact when required, no required action is specified in CTS. Since no action is specified, entry into CTS 3.0 is required. CTS 3.0 requires the unit be placed in Hot Shutdown within 8 hours and in Cold Shutdown within an additional 30 hours. ITS 3.6.1 RA A.1 permits 1 hour to restore the containment to OPERABLE status before mandating unit shutdown. The 1 hour Completion Time provides a period of time to correct the problem commensurate with the importance of maintaining containment during MODES 1, 2, 3, and 4. This time period also ensures that the probability of an accident (requiring containment OPERABILITY) occurring during periods when containment is inoperable is minimal. If the containment is not restored to OPERABLE status within 1 hour, ITS 3.6.1 RA B.1 and RA B.2 requires the unit be placed in MODE 3 within 6 hours and in MODE 5 within 36 hours respectively. ITS MODE 3 is comparable to CTS Hot Shutdown and ITS MODE 5 is comparable to CTS Cold Shutdown. 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. The ITS requirements to be in MODE 3 within 6 hours and MODE 5 within 36 hours are additional restrictions on plant operation and are consistent with ISTS.

M2 The CTS definition for Containment Integrity requires 1 air lock door to be properly closed and sealed. Consequently, when 1 of the two air lock door is not properly closed and sealed, there are no additional CTS requirements. LCO 3.6.2 requires the air lock to be OPERABLE. With 1 of the two air lock doors inoperable, ITS 3.6.2 RA A.1, A.2 and A.3 (including associated Notes) mandate specified actions. The requirements for the second airlock door are necessary to ensure at least one airlock door is OPERABLE at times when the airlock is being used for ingress and egress. This is an additional restriction upon plant operation and is consistent with ISTS.

M3 CTS does not require operability of the air lock interlock. Consequently, CTS requirements comparable to ITS 3.6.2 RA B.1, B.2 and B.3 and associated Notes do not exist. The door interlock feature supports containment OPERABILITY while the air lock is being used for personnel transit in and out of the containment. No CTS requirement comparable to ITS SR 3.6.2.2 exists. Periodic testing of the interlock demonstrates that the interlock will function as designed and that simultaneous opening of the inner and outer doors will not inadvertently occur. This is an additional restriction upon plant operation and is consistent with ISTS. These are additional restrictions upon plant operation and are consistent with ISTS.

M4 With the unit not in cold shutdown, CTS requires containment integrity be maintained. The CTS definition for Containment Integrity requires one air lock door to be properly closed and sealed and containment leakage satisfying CTS 4.4. With the air lock inoperable for reasons other than either one air lock door inoperable or the air lock interlock inoperable, ITS 3.6.2 RA C.2 and C.3 require specified actions. However, the Condition for which these actions are specified is not included in CTS. The CTS requirements for containment integrity are either satisfied and therefore no action is required or the requirement is not satisfied requiring entry into CTS 3.0. An ITS RA resulting from a Condition which is not a degraded CTS condition is an additional restriction upon unit operation. Required Action C.2 requires that one door in the containment air lock must be verified to be closed within the 1 hour Completion Time. This specified time period is consistent with the ACTIONS of LCO 3.6.1, which requires that containment be restored to OPERABLE status within 1 hour. Additionally the RA C.3 24 hour Completion Time for restoring the airlock door to OPERABLE status is considered reasonable, assuming that at least one door is maintained closed in the air lock. This change is consistent with ISTS.

M5 With required actions and associated completion times not met, CTS actions are controlled by 3.0. CTS 3.0 requires the unit be placed in Hot Shutdown within 8 hours and Cold Shutdown within an additional 30 hours. ITS 3.6.2 RA D.1 and D.2 require the unit be placed MODE 3 within 6 hours and MODE 5 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. These changes are more restrictive than CTS and are consistent with ISTS.

M6 If the requirements of CTS 3.6.3.a, b or c are not satisfied, CTS 3.6.3.d requires the plant be placed in Cold Shutdown within 36 hours but does not specify the time required to be in Hot Shutdown. ITS 3.6.3 RA D.1 requires the unit be placed in MODE 3 within 6 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. This is an additional restriction upon unit operation and is consistent with ISTS.

M7 CTS 3.6.3 requires action for inoperable automatic containment isolation valves required to close under accident conditions. Since CTS definition 1.7, CONTAINMENT INTEGRITY, does not include manual isolation valves required for normal operation, an action for these valves is not provided. ITS 3.6.3 Actions A, B, C and D provide Required Actions for inoperable isolation valves without regard to automatic or manual capability. Inclusion of manual isolation valves is reasonable since they do form a portion of the containment boundary. This is a more restrictive change upon plant operation and is consistent with ISTS.

M8 CTS 3.6.3 permits the use of a deactivated automatic valve secured in the isolated position to isolate an inoperable penetration flowpath. Since CTS does not restrict the use of a check valve as an automatic isolation valve, the use of a check valve to isolate an inoperable flow path is permitted. ITS 3.6.3 RA C.1 does not permit the use of a check valve to isolate a penetration flow path with only one isolation valve and a closed system. A check valve may not be used to isolate the affected penetration flow path since it can be adversely affected by a single active failure. This is an additional restriction upon plant operation and is consistent with ISTS.

M9 With one or more inoperable containment isolation valves, CTS 3.6.3 permits 4 hours to isolate the affected penetration(s). ITS 3.6.3 RA B.1 permits 1 hour to isolate the penetration flow path. The 1 hour Completion Time is consistent with the ACTIONS of LCO 3.6.1 and provides a period of time to correct the problem commensurate with the importance of maintaining containment during MODES 1, 2, 3, and 4. This time period also ensures that the probability of an accident (requiring containment OPERABILITY) occurring during periods when containment is inoperable is minimal. This is an additional restriction upon plant operation.

M10 CTS required actions comparable to ITS 3.6.3 RAs A.2, C.2 and associated Notes do not exist. ITS 3.6.3 RAs A.2 and C.2 requires the affected

penetration flow paths be verified to be isolated on a periodic basis. This is necessary to ensure that 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. The Completion Time of "once per 31 days for isolation devices outside containment" is appropriate considering the fact that the devices are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility. The Note to Condition A indicates that this Condition is only applicable to those penetration flow paths with two containment isolation valves. For penetration flow paths with only one containment isolation valve and a closed system, Condition C provides the appropriate actions. Required Action C.2 is modified by a Note that applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. The probability of misalignment of these valves, once they have been verified to be in the proper position, is small. These are additional restrictions upon plant operation.

M11 CTS Table 4.1-3 Item 5 requires testing the Containment Isolation Trip function each refueling shutdown. The time period encompassed by the CTS refueling frequency is not specified and could exceed 22.5 months. Additionally, the CTS does not include a defined condition of refueling shutdown. It can be inferred that the requirement is actually a frequency consistent with that of the scheduled refueling outage and a condition that exists during a refueling outage, such as cold shutdown. There is no reason to require the test be performed during an actual refueling outage, provided the plant is in a condition suitable for performing the test. The impact of this test upon the unit requires that it be performed in Cold Shutdown. Therefore this aspect of this change is considered administrative and is consistent with ISTS. ITS SR 3.6.3.5 requires verification of this function at an explicit 18 month frequency (with a maximum interval of 22.5 months). An 18 month frequency establishes consistency with other SRs with this frequency and does not impose a significant restriction upon unit operation. This is an additional restriction upon plant operation consistent with ISTS.

M12 CTS Table 4.1-3 Item 5 requires a Check that the Containment Isolation Trip features(s) are functioning. No further explicit requirements regarding this testing is provided in CTS. ITS SR 3.6.3.5 explicitly requires verification that, ". . . each automatic isolation valve that

is not locked sealed or otherwise secured in position actuates to the isolated position on an actual or simulated actuation signal." Since the ITS requirements are more prescriptive, this is an additional restriction upon plant operation and is consistent with ISTS. Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures that each automatic containment isolation valve will actuate to its isolation position on a containment isolation signal. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass this Surveillance when performed at the 18 month Frequency. The Frequency was concluded to be acceptable from a reliability standpoint.

M13 CTS surveillance requirements comparable to ITS SR 3.6.3.2, SR 3.6.3.3 and associated Notes and SR 3.6.3.6 do not exist. SR 3.6.3.2 helps to ensure that post accident leakage of radioactive fluids or gases outside of the containment boundary is within design limits. Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day Frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions. SR 3.6.3.3 requires verification that each containment isolation manual valve and blind flange located inside containment and not locked, sealed or otherwise secured and 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 containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate since these containment isolation valves are operated under administrative controls and the probability of their misalignment is low. Verifying that each 42 inch inboard containment purge valve is blocked to restrict opening to $\leq$ 70%, in accordance with SR 3.6.3.6, is required to ensure that the valves can close under DBA conditions within the times assumed in the analyses of References 1 and 2. The 18 month Frequency is appropriate because the blocking devices are typically removed only during a refueling outage. These are additional restrictions upon plant operation and are consistent with the NUREG.

M14 CTS 3.6.2 permits containment pressure to be outside specified limits for up to eight hours prior to requiring the unit be placed in Hot Shutdown. ITS 3.6.4 permits only 1 hour with this condition. When containment pressure is not within the limits of the LCO, it must be restored to within these limits within 1 hour. The Required Action is necessary to return operation to within the bounds of the containment analysis. The 1 hour Completion Time is consistent with the Completion

Time of Required Action B.1 of LCO 3.6.1, "Containment," which requires that containment be restored to OPERABLE status within 1 hour. This is an additional restriction upon plant operation and is consistent with ISTS.

M15 With containment pressure not within specified limits for greater than eight hours, CTS 3.6.2 requires starting to place the unit in Hot Shutdown. CTS 3.6.2 does not impose a time restriction to achieve Hot Shutdown. Additionally, CTS does not mandate the unit be placed in Cold Shutdown. ITS 3.6.4 RA B.1 requires the unit be placed in MODE 3 within 6 hours and ITS 3.6.4 RA B.2 requires the unit be placed in MODE 5 within an additional 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. These are additional restrictions upon plant operation and are consistent with ISTS.

M16 CTS 3.6.2 does not explicitly specify an applicability. However an Applicability equivalent to ITS MODES 1 and 2 is implied by the requirement to place the unit in Hot Shutdown if the requirements are not met. ITS 3.6.4 imposes an Applicability of MODES 1, 2, 3, and 4. In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. Since maintaining containment pressure within limits is essential to ensure initial conditions assumed in the accident analyses are maintained, the LCO is applicable in MODES 1, 2, 3 and 4. This is an additional restriction upon plant operation and is consistent with ISTS.

M17 A CTS surveillance requirement comparable to ITS SR 3.6.4.1 does not exist. Verifying that containment pressure is within limits ensures that unit operation remains within the limits assumed in the containment analysis. The 12 hour Frequency of this SR considers operating experience related to trending of containment pressure variations during the applicable MODES. Furthermore, the 12 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal containment pressure condition. Including ITS SR 3.6.4.1, is an additional restriction upon plant operation and is consistent with ISTS.

M18 A CTS specification comparable to ITS 3.6.5 does not exist. Containment average air temperature is an initial condition used in the DBA analyses that establishes the containment environmental qualification operating envelope for both pressure and temperature. The limit for containment average air temperature ensures that operation is maintained within the assumptions used in the DBA analyses for containment. The restriction imposed by ITS 3.6.5 is an additional restriction upon plant operation and is consistent with ISTS.

M19 With two Containment Spray trains or any combination of three or more trains inoperable, CTS does not specify a specific action. In this condition, action is mandated by CTS 3.0. CTS 3.0 requires the unit be placed in Hot Shutdown within 8 hours and Cold Shutdown within an additional 30 hours. In this condition ITS 3.6.6 RA F.1 requires immediate entry into LCO 3.0.3. LCO 3.0.3 requires the unit be placed in MODE 3 within 7 hours and MODE 5 within an additional 30 hours. The Completion times establish consistency with other similar shutdown requirements and the slight reduction in time does not impose a significant impact on plant operation. This is an additional restriction upon plant operation and is consistent with ISTS.

M20 CTS Surveillance requirements comparable to ITS SR 3.6.6.2, SR 3.6.6.3 and SR 3.6.6.7 do not exist. SR 3.6.6.2 requires operating each containment cooling train fan unit for ≥ 15 minutes ensures that all trains are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. The 31 day Frequency considers the known reliability of the fan units and controls, the two train redundancy available, and the low probability of significant degradation of the containment cooling train occurring between surveillances. SR 3.6.6.3 requires verifying that each containment cooling SW cooling flow rate to each cooling unit is ≥ 750 gpm provides assurance that the design flow rate assumed in the safety analyses will be achieved. The Frequency was developed considering the known reliability of the Cooling Water System, the two train redundancy available, and the low probability of a significant degradation of flow occurring between surveillances, and it is acceptable based upon operating experience. SR 3.6.6.7 requires verification that each containment cooling train actuates upon receipt of an actual or simulated safety injection signal. The 18 month Frequency is based on engineering judgment and has been shown to be acceptable through operating experience. These are additional restrictions upon plant operation and are consistent with ISTS.

M21 A CTS surveillance requirement to verify the spray additive tank volume requirements of CTS 3.3.2.1.a are met, comparable to ITS SR 3.6.7.2, does not exist. To provide effective iodine removal, the containment spray must be an alkaline solution. Since the Refueling Water Storage Tank (RWST) contents are normally acidic, the volume of the spray additive tank must provide a sufficient volume of spray additive to adjust pH for all water injected. This SR is performed to verify the availability of sufficient NaOH solution in the Spray Additive System. The 184 day Frequency was developed based on the low probability of an undetected change in tank volume occurring during the SR interval (the tank is isolated during normal unit operations). Tank level is also indicated and alarmed in the control room, so that there is high confidence that a substantial change in level would be detected.

Therefore, including ITS SR 3.6.7.2 is an additional restriction upon plant operation and is consistent with ISTS.

M22 CTS 3.6.2 requires the containment initial pressure to be maintained ≥ -1.0 psig. ITS LCO 3.6.4 requires the containment internal pressure to be maintained ≥ -0.8 psig. This is necessary to maintain operation within the assumptions of the safety analysis. This is a more restrictive requirement upon unit operation and is consistent with ISTS.

M23 CTS 4.4.2.c requires operation of the IVSW System to demonstrate the capability for sealing the associated containment isolation valves. The CTS does not include explicit quantitative limits for IVSW header flows. ITS SR 3.6.8.6 requires verifying each IVSW header's flow rate is a within the specified limit. The addition of the IVSW header flow rate limits is a more restrictive change upon unit operation.

M24 CTS 3.3.6 requires the Isolation Valve Seal Water (IVSW) system to be OPERABLE when the reactor is critical. ITS 3.6.8 requires the IVSW system to be OPERABLE in MODES 1, 2, 3 and 4. In MODES 1, 2, 3 and 4, a DBA could cause a release of radioactive material to containment. Therefore, the IVSW System is required to be OPERABLE in MODES 1, 2, 3 and 4 to prevent leakage from containment. This change is an additional restriction on plant operation and is consistent with comparable requirements in ISTS.

M25 CTS 3.3.6 requires the Isolation Valve Seal Water (IVSW) system to be OPERABLE when the reactor is critical. With IVSW inoperable for greater than 24 hours, CTS 3.3.6 requires the unit be placed in Hot Shutdown. Although CTS 3.3.6 refers to placing the unit in Cold Shutdown, upon placing the unit in Hot Shutdown the specification is no longer applicable. With the Required Action and associated Completion Times not met, ITS 3.6.8 RA B.2 requires placing the unit in MODE 5 within 36 hours. If the Required Actions and associated Completion Times are not met, the plant must be brought to a MODE in which the LCO does not apply. 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. This change is an additional restriction on plant operation and is consistent with comparable requirements in ISTS.

M26 CTS Table 4.1-3, Item 15 requires a check that IVSW is functioning. ITS SR 3.6.8.3 requires verification that each automatic valve in the IVSW system actuates to the correct position on an actual or simulated actuation signal. This SR verifies the stroke time of each automatic air operated header injection solenoid valve is within limits. The frequency is specified by the Inservice Testing Program, and previous operating experience has shown that these valves usually pass the required test when performed. Since the requirements in ITS are more

prescriptive, this change is a more restrictive requirement on unit operation.

M27 CTS surveillance requirements comparable to ITS SR 3.6.8.1, SR 3.6.8.2 and SR 3.6.8.5 do not exist. SR 3.6.8.1 verifies the IVSW tank has the necessary pressure to provide motive force to the seal water. Verification of the IVSW tank pressure on a Frequency of once per 12 hours is acceptable. This Frequency is sufficient to ensure availability of IVSW. Operating experience has shown this Frequency to be appropriate for early detection and correction of off normal trends. SR 3.6.8.2 verifies the IVSW tank has an initial volume of water necessary to provide seal water to the containment isolation valves served by the IVSW System. An initial volume $\geq$ 85 gallons ensures the IVSW System contains the proper inventory to maintain the required seal. Verification of IVSW tank level on a Frequency of once per 31 days is acceptable since tank level is monitored by installed instrumentation and will alarm in the control room prior to level decreasing to 85 gallons. SR 3.6.8.5 ensures the capability of the dedicated nitrogen bottles to pressurize the IVSW system independent of the Plant Nitrogen System. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. These are additional restrictions upon plant operation.

M28 Not used.

M29 CTS 4.4.2.c and Table 4.1-3, Item 15 require testing the IVSW system at a refueling frequency. CTS does not explicitly define the refueling interval. ITS SR 3.6.8.4 and SR 3.6.8.5 require the testing be performed at an 18 month interval. The 18 month frequency establishes consistency with other similar requirements and does not impose a significant restriction upon unit operation. These are additional restrictions upon plant operation.

M30 CTS 4.5.1.3 requires performance of system tests for the Containment Spray System and requires operation of the system be initiated by tripping the normal actuation instrumentation. ITS SR 3.6.6.5 explicitly requires verification that each pump starts and SR 3.6.6.6 explicitly requires verification that, ". . . each automatic containment spray valve in the flow path that is not locked sealed or otherwise secured in position actuates to the correct position on an actual or simulated actuation signal." Requiring starting of each pump and verification of each valve's actuation assures a high degree of reliability of the containment spray system and does not impose a significant restriction upon plant operation. Since the ITS requirements are more prescriptive, this is an additional restriction upon plant operation and is consistent with ISTS.

M31 CTS 4.5.1.3 requires testing of the Containment Spray System at a refueling frequency. The time period encompassed by the CTS refueling frequency is not specified. ITS SR 3.6.6.5 and SR 3.6.6.6 requires verification of this function at an explicit 18 month frequency. The 18 month frequency establishes consistency with other similar requirements and does not impose a significant restriction upon unit operation. This is an additional restriction upon plant operation and is consistent with ISTS.

M32 The CTS is revised to add a condition in which both the 42" penetration purge valves and the 6" pressure or vacuum relief valves are open. In this condition in ITS 3.6.3, the reactor would be required achieve hot shutdown within 8 hours and cold shutdown within an additional 30 hours. In ITS LCO 3.6.3, Condition D, the unit would be required to exit applicability for LCO 3.6.3 within 36 hours. Since this condition is more limiting than the CTS Section 3.0, this change is more restrictive. This change is acceptable since the Completion Times of Condition D are consistent with ISTS, and 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.

M33 CTS 4.5.2.2 requires verification of the position of the valves in the flow path of the Containment Spray and Spray Additive System during power operation. The CTS power operating condition involves operation at greater than 2% rated thermal power. ITS SR 3.6.6.1 and SR 3.6.7.1 require a comparable verification consistent with the applicability of the overall specifications (i.e., MODES 1, 2, 3, and 4). Consistent with the construction of NUREG-1431, SRs are generally required to be performed consistent with the applicability of the overall specification. Performing these SRs in MODES 2, 3 and 4 does not impose a significant restriction upon plant operation. Requiring performance of the SR in MODES 2, 3 and 4 is an additional restriction upon plant operation and is consistent with ISTS.

M34 CTS 4.5.1.3 requires a Containment Spray System test be performed at a refueling interval. CTS 4.5.1.5 states that the test is satisfactory if visual observations indicate components have operated satisfactorily. ITS SR 3.6.6.5 and ITS SR 3.6.7.4 require verification that each valve in the flow path that is not sealed or otherwise secured in position actuates to the correct position on an actual or simulated actuation signal. ITS SR 3.6.6.6 requires verification that each containment spray pump starts on an actual or simulated actuation signal. Since the ITS requirements are more prescriptive than the CTS requirements, these are additional restrictions upon plant operation and are consistent with ISTS. Requiring verification of the start of each pump and verification of each valve's actuation assures a high degree of reliability of the containment spray system and does not impose a significant restriction upon plant operation. Additionally requiring verification at an

explicit 18 month frequency is an additional restriction upon plant operation and is consistent with ISTS. The 18 month frequency establishes consistency with other similar requirements and does not impose a significant restriction upon unit operation.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 CTS 1.7.a includes details specifying non-automatic isolation valves be closed and blind flanges be properly installed. These details are relocated to the ITS Bases.

The details associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the requirement for OPERABILITY of the Containment Isolation Valves. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and utility resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA2 CTS 4.5.1.3 requires Containment Spray tests be performed with the isolation valves in the spray supply lines and spray additive tanks blocked closed. These details regarding testing of the Containment Spray System are not retained in the ITS and are relocated to plant controlled documents.

The details associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the requirement for OPERABILITY of the Containment Spray System. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and utility resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA3 CTS 1.7.d includes a requirement that manual valves qualifying as automatic isolation valves are secured closed. The Updated Final Safety Analysis Report (UFSAR), Section 6.2.4.2, "System Design," states that manual isolation valves that are locked closed or otherwise closed under administrative control during power operation qualify as automatic trip valves. This requirement is relocated, in a general manner (i.e., non verbatim), to the Bases for ITS 3.6.1. The Background description in the Bases states that "manual valves, de-activated automatic valves

secured in their closed position (including check valves with flow through the valve secured), blind flanges, and closed systems are considered passive devices." As such, a manual valves secured in the closed position then qualifies as one of the required containment isolation barriers.

This information associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the requirement for OPERABILITY of the Containment. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and utility resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of this information is acceptable.

LA4 CTS 3.6.4.3 requires that the 42 inch purge supply and exhaust valves be tested prior to use (in accordance with the IST program) if not tested within the previous quarter. Additionally, CTS 3.6.4.3 specifies that the 42 inch valves are not to cycled quarterly only for testing. This detail is relocated to licensee controlled documents.

This detail associated with the involved Specifications is not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the requirement for OPERABILITY of the Containment Isolation Valves. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and utility resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA5 CTS 1.7.d includes details specifying that all automatic trip valves required to be closed during accident conditions are operable or are secured closed. This requirement is relocated, in a general manner (i.e., non verbatim), to the Bases for ITS 3.6.1. The Background description in the Bases states that, ". . . containment isolation valves form part of the containment pressure boundary and provide a means for fluid penetrations not serving accident consequence limiting systems to be provided with two isolation barriers that are closed on a containment isolation signal." The Background description in the Bases also states that ". . . de-activated automatic valves secured in their closed position (including check valves with flow through the valve secured) . . . are considered passive devices." As such, an automatic isolation valve that is OPERABLE or secured in the closed position then qualifies as one of the required containment isolation barriers.

The details associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the requirement for OPERABILITY of the Containment Isolation Valves. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and utility resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA6 For Containment Integrity to be met, CTS 1.7.b requires the equipment door be properly closed and sealed. Additionally, CTS 1.7.c requires at least one door in the personnel air lock be properly closed and sealed. These requirements are relocated, in a general manner (i.e., non verbatim), to the Bases for ITS 3.6.1. The LCO description in the Bases states that the containment configuration, including the equipment hatch, ". . . will limit leakage to those leakage rates assumed in the accident analyses," which can only occur when the containment equipment door is properly closed and sealed.

This information associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the requirement for OPERABILITY of the Containment. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and utility resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of this information is acceptable.

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CTS 3.6.1.c and d specify unique requirements regarding reactivity controls which are applicable when containment integrity is not intact. These unique requirements and applicability are not retained in the ITS. ITS 3.1, Reactivity Control Systems, provides appropriate reactivity control requirements for specified MODEs (MODE 2 with $K_{eff} < 1.0$ as well as MODEs 3 - 5). ITS 3.9, Refueling Operations, provides appropriate reactivity controls for MODE 6.

CTS 3.6.1.c limits positive reactivity changes by rod drive motion when containment integrity is not intact except during specified evolutions. During the specified evolutions Shutdown Margin (SDM) is limited to $\geq 1\%$ $\Delta k/k$. CTS 3.6.1.d limits positive reactivity changes made by boron dilution when containment integrity is not intact. These limitations are not retained in ITS. Independent of containment status, ITS 3.1.1

directly limits SDM and ITS 3.9.1 directly limits SDM by imposing a limit on boron concentration. Limiting positive reactivity changes which do not challenge the required SDM is unnecessary, since the specified SDMs are the minimum values assumed in the applicable safety analysis. Provided the required SDM and boron concentrations are maintained, additional limitations on positive reactivity changes when the containment is not intact are not necessary. This less restrictive change eliminates unnecessary restrictions on plant operation and is consistent with ISTS.

L2 A note comparable to ITS 3.6.3 Action Note 1 does not exist. ITS 3.6.3 Action Note 1 permits an inoperable penetration flow path to be unisolated intermittently under administrative control. This is a less restrictive requirement upon plant operation and is consistent with ISTS. As stated in the Bases, these administrative controls consist of stationing a dedicated operator at the valve controls, who is in continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for containment isolation is indicated.

Permitting an inoperable penetration to be unisolated intermittently under administrative control may be required in order to meet other Surveillance Requirements, and the Note is not intended to allow circumvention of the Completion Times. As stated in ITS Section 1.3, "Completion Times," the ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the unit is not within the LCO Applicability. An example of when the capabilities afforded by this Note may be utilized is temporarily unisolating a sample flow path to acquire a required sample.

L3 CTS 3.6.3 does not restrict the use of a check valve as an automatic isolation valve. ITS 3.6.3 RA B.1 does not permit the use of a check valve to isolate a penetration flow path with only one isolation valve and a closed system. Therefore, this aspect of this change is an additional restriction upon plant operation and is consistent with ISTS. CTS 3.6.3 RA C.1 permits 72 hours to isolate penetration flow paths associated with a closed system. Permitting up to 72 hours to isolate the flowpath for such configurations is a less restrictive requirement on plant operation. The specified time period is reasonable considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of maintaining containment integrity during MODES 1, 2, 3, and 4.

L4 With an inoperable Containment Cooling Fan Unit or flow path, CTS 3.3.2.2 requires restoring the Containment Cooling Unit or flow path to OPERABLE status within 24 hours or the unit be placed in Hot Shutdown using normal operating procedures and if the components are not restored

within an additional 48 hours the unit must be placed in Cold Shutdown using normal operating procedures.

With a Containment Cooling Train (1 or 2 Containment Cooling Fan Units) associated with the same train inoperable, ITS 3.6.6 RA C.1 RA E.1 and RA E.2 require restoring the Containment Cooling train to OPERABLE status within 7 days (and 10 days from discovery of failure to meet the LCO) or placing the unit in MODE 3 within an additional 6 hours and MODE 5 within another 36 hours. These are less restrictive requirements upon plant operation and are consistent with ISTS.

The 7 day Completion Time takes into account the redundant heat removal capability afforded by the Containment Spray System, reasonable time for repairs, and low probability of a DBA occurring during this period. The 10 day portion of the Completion Time for Required Action A.1 is based upon engineering judgment. It takes into account the low probability of coincident entry into two Conditions in this Specification coupled with the low probability of an accident occurring during this time.

L5 With an inoperable Containment Spray pump or flow path, CTS 3.3.2.2 and 3.3.2.3 requires restoring the Containment Spray pump or flow path to OPERABLE status within 24 hours or the unit be placed in Hot Shutdown within using normal operating procedures. If the components are not restored within an additional 48 hours, the unit must be placed in Cold Shutdown using normal operating procedures. If the condition occurs when in Hot Shutdown, CTS 3.3.2.3 permits up to 72 hours to be in Cold Shutdown.

Additionally, CTS 3.3.2.2.b permits one Containment Spray pump to be inoperable for a up to 24 hours. This specification is not separately retained in ITS. CTS 3.3.2.2.c permits a Containment Spray flow path to be inoperable for up to 24 hours. Both CTS 3.3.2.2.b and 3.3.2.2.c are encompassed in ITS 3.6.6 RA A.1 which permit an inoperable Containment Spray Train. With either a pump or flow path inoperable, the train is inoperable. Therefore, this aspect of this change is administrative and is consistent with ISTS.

With one Containment Spray Train inoperable, ITS 3.6.6 RA A.1 RA B.1 and RA B.2 require restoring the Containment Spray train to OPERABLE status within 72 hours (and 10 days from discovery of failure to meet the LCO) or placing the unit in MODE 3 within an additional 6 hours and MODE 5 within another 84 hours. Permitting up to 72 hours to be in MODE 3 and 156 hours (72 + 84) to be in MODE 5 are less restrictive requirements upon plant operation and are consistent with ISTS. In this Condition, the remaining OPERABLE spray and cooling trains are adequate to perform the iodine removal and containment cooling functions. The 72 hour Completion Time takes into account the redundant iodine and heat removal

capability afforded by the Containment Spray System, reasonable time for repairs, and low probability of a DBA occurring during this period.

L6 CTS 3.3.2.2.a permits a Containment Cooler or flow path to be inoperable provided both Containment Spray pumps are OPERABLE. This restriction regarding OPERABILITY of the two Containment Spray pumps is not retained in ITS. CTS 3.3.2.2.b permits a Containment Spray pump to be inoperable provided the four Containment Coolers are OPERABLE. This restriction regarding OPERABILITY of the four Containment Coolers is not retained in ITS. ITS 3.6.6 RA A.1 and R.A C.1 permit a Containment Spray train and a Containment Cooling train (1 or 2 Containment Fan Cooling Units associated with thee same train) to be inoperable simultaneously. These are less restrictive requirements upon plant operation and are consistent with ISTS.

The combination of ITS Condition A and Condition C is bounded by failure of a single Emergency Diesel Generator. A failure of a single Emergency Diesel Generator, results in loss of one Containment Spray Train and one Containment Cooling Train. ITS Condition A and Condition C are both predicated upon a short term relaxation of the single failure criteria (i.e., for the duration of the Completion Time of the applicable RA, no additional single failure is assumed). One Containment Spray Train in combination with one train of Containment Cooling provides sufficient heat removal capacity to maintain containment peak pressure and temperature below the design limits. Additionally, the iodine removal capability remains consistent with the assumptions of the accident analysis. The individual Completion Times were developed taking into account the redundant heat removal capabilities afforded by combinations of the Containment Spray System and Containment Cooling System and the low probability of DBA occurring during this period.

L7 With two Containment Cooling Trains (3 or 4 Containment Fan Cooling Units) inoperable, no specific action is specified. Therefore action is mandated by CTS 3.0. CTS 3.0 requires placing the unit in Hot Shutdown within eight hours and Cold Shutdown within an additional 30 hours. ITS 3.6.6 RA D.1 permits two Containment Cooling trains to be inoperable for up to 72 hours. Permitting two Containment Coolers to be inoperable for up to 72 hours is a less restrictive requirement on plant operation and is consistent with ISTS.

The remaining components in this degraded condition provide iodine removal capabilities and are capable of providing at least 100% of the heat removal needs after an accident. The 72 hour Completion Time was developed taking into account the redundant heat removal capabilities afforded by the Containment Spray System, the iodine removal function of the Containment Spray System, and the low probability of DBA occurring during this period.

L8 CTS 4.5.1.6 requires verification of proper operation of essential features including valves, dampers and piping at a monthly frequency. This surveillance requirement is not retained in the ITS as a unique SR, however the containment cooling features tested by this surveillance are encompassed within other ITS SRs. Fan operation and cooling water flow rate through the coolers is verified at a monthly (31 day) frequency by ITS SR 3.6.6.2 and SR 3.6.6.3 respectively. Proper operation of the service water valves is verified on a quarterly frequency in accordance with the Inservice Testing Program. Overall cooling train operation including proper damper operation is verified at an 18 month frequency by SR 3.6.6.7.

Reducing the frequency for the verification of OPERABILITY of the valves and dampers is a less restrictive requirement upon plant operation and is consistent with ISTS. The quarterly frequency for the valve tests is based on engineering judgment and has been shown to be acceptable through industry operating experience. Industry operating experience has shown that these components usually pass the Surveillances when performed at the quarterly Frequency. The 18 month Frequency for the overall verification of cooling train OPERABILITY including proper damper operation is based on engineering judgment and has been shown to be acceptable through industry operating experience. Industry operating experience has shown that these components usually pass the Surveillances when performed at the 18 month Frequency. Therefore, the Frequencies are concluded to be acceptable from a reliability standpoint.

L9 With a single Spray Additive System flowpath inoperable, CTS 3.3.2.2.c requires the flowpath be restored to OPERABLE status within 24 hours or the unit be placed in Hot Shutdown using normal operating procedures. If the components are not restored within an additional 48 hours, the unit must be placed in Cold Shutdown using normal operating procedures. ITS 3.6.7 RA A.1 requires restoring the inoperable Spray Additive Train within 72 hours provided at least 100% of the flow equivalent to a single OPERABLE Spray Additive System Train available to an OPERABLE Containment Spray Train is still available. If the Required Action and associated Completion Time is not met, ITS 3.6.7 RA C.1 and C.2 require the unit to be placed in MODE 3 within 6 hours and MODE 5 within an additional 78 hours. Therefore, these are less restrictive requirements upon plant operation and are consistent with ISTS.

The 72 hour Completion Time to restore the Spray Additive System train to OPERABILITY takes into account the redundant flow path capabilities and the low probability of the worst case DBA occurring during this period. In this Condition the iodine removal capability remains consistent with the assumptions of the accident analysis. The Completion Time of 6 hours to achieve MODE 3 is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an

orderly manner and without challenging plant systems. The extended interval to reach MODE 5 allows 48 hours for restoration of the Spray Additive System in MODE 3 and 36 hours to reach MODE 5. This is reasonable when considering the reduced pressure and temperature conditions in MODE 3 for the release of radioactive material from the Reactor Coolant System. Requiring the plant to be in MODE 5 within 85 hours is a less restrictive requirement upon plant operation and is more restrictive than ISTS. Permitting time to restore the Spray Additive System to OPERABLE status is preferable to mandating a unit shutdown with the increased risk of shutdown transients.

L10 With the Spray Additive System inoperable, CTS does not provide specific actions. In this situation the actions are mandated by CTS 3.0. CTS 3.0 requires the unit be placed in hot shutdown within 8 hours and cold shutdown within an additional 30 hours. With the Spray Additive System inoperable for reasons other than Condition A, ITS 3.6.7 RA B.1 requires the Spray Additive System be restored to OPERABILITY within 1 hour. With Required Action and associated Completion Time not met, ITS 3.6.7 RA C.1 and C.2 require the unit be placed in MODE 3 within 6 hours and MODE 5 within 84 hours respectively. The extended interval to reach MODE 5 allows 48 hours for restoration of the Spray Additive System in MODE 3 and 36 hours to reach MODE 5. This is reasonable when considering the reduced pressure and temperature conditions in MODE 3 for the release of radioactive material from the Reactor Coolant System. Requiring the plant to be in MODE 5 within 85 hours is a less restrictive requirement upon plant operation and is more restrictive than ISTS. Permitting time to restore the Spray Additive System to OPERABLE status is preferable to mandating a unit shutdown with the increased risk of shutdown transients.

L11 CTS Table 4.1.2, Item 5 requires sampling the Spray Additive tank for NaOH concentration on a monthly frequency with a maximum time between tests of 45 days. ITS 3.6.7.3 has a frequency of 184 days. Therefore, this is a less restrictive requirement upon plant operation and is consistent with ISTS.

The 184 day Frequency is sufficient to ensure that the concentration level of NaOH in the spray additive tank remains within the established limits. This is based on the low likelihood of an uncontrolled change in concentration (the tank is normally isolated) and the probability that any substantial variance in tank volume will be detected. There has not been a recent (i.e., past five years) failure of this surveillance, and therefore the relaxed surveillance Frequency is supported by operating experience.

L12 With one of the redundant actuation valves associated with the automatic IVSW headers inoperable, CTS 3.3.6.2 requires the redundant valve be promptly determined to be OPERABLE and the inoperable valve be restored

to OPERABLE status or the unit be placed in Hot Shutdown within 24 hours, followed by Cold Shutdown within an additional 48 hours. ITS 3.6.8, RA A.1 permits the entire IVSW system to be inoperable for up to 72 hours. Since the entire IVSW System is permitted to be inoperable, promptly determining the remaining valve is OPERABLE is unnecessary. If the Required Action and associated Completion Time are not met, ITS 3.6.8, RA B.1 requires the unit be placed in MODE 3 within an additional 6 hours and in MODE 5 within an additional 30 hours. Permitting the entire IVSW system to be inoperable for up to 72 hours and providing another 6 hours to achieve MODE 3 is a less restrictive requirement upon unit operation.

With the IVSW system inoperable, leakage through penetration pathways supplied by IVSW is limited to leakage through the isolation valves. During the 72 hours that IVSW is permitted to be inoperable, it is reasonable to assume no additional failure prevents closure of required isolation valves. Leakage of these IVSW supplied penetration pathways as well as non-IVSW supplied penetration pathways is demonstrated to be less than 0.60 L_a during performance of the Type A leak rate test. Since IVSW is not in service during performance of the Type A leak rate test, the leak rate determined during this test is indicative of the containment's leakage without IVSW. Under 10 CFR 50, Appendix J Option B, the Type A leak rate test must be performed at least every 10 years. Limiting containment leakage to 0.60 L_a during performance of these tests provides a 40% margin to the containment analyzed limit. This containment leakage would have to increase by 66.66% {(0.6 + (0.6 x 0.66)) = 1.0 L_a} over the 10 year period for leakage to exceed the containment analyzed limit.

TECHNICAL CHANGES - RELOCATED SPECIFICATIONS

R1 CTS 3.3.5 is not retained in the ITS because it has been reviewed against, and determined not to satisfy, the screening criteria for Technical Specifications provided in 10 CFR 50.36. The screening criteria were established to ensure that the Technical Specifications are reserved for those conditions or limitations on plant operation considered necessary to limit the possibility of an abnormal situation or event that could result in an immediate threat to the health and safety of the public. The rationale for relocation of each of these Specifications is provided in the report, *"Application of Screening Criteria to the H. B. Robinson Steam Electric Plant Unit No. 2 Technical Specifications."* This Limiting Conditions for Operation, is relocated to licensee controlled documents.

Relocation of specific requirements for systems or variables contained in this Specifications to licensee documents will have no impact on the operability or maintenance of the system. CP&L will initially continue

to meet the requirements contained in the relocated Specifications. CP&L is allowed to make changes to these requirements in accordance with the provisions of 10 CFR 50.59. Such changes can be made without prior NRC approval, if the change does not involve an unreviewed safety question, as defined in 10 CFR 50.59. These controls are considered adequate for assuring that structures, systems, and components in the relocated Specifications are maintained operable, and variables are maintained within limits. This change is consistent with the NRC Final Policy Statement on Technical Specification Improvements.

plant operation, or methods of operation. The change will not allow continuous unit operation if the containment is not OPERABLE. The proposed change does not introduce a new mode of operation or changes in the method of normal plant operation. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

3. Does this change involve a significant reduction in a margin of safety?

With the IVSW System OPERABLE, there is no containment leakage through an IVSW supplied penetration. IVSW pressurizes each supplied penetration flowpath to $\geq 1.1 \times L_a$, which ensures that IVSW supplied penetration pathway leakage is into (versus out of) the containment. With the IVSW system inoperable, containment leakage is still limited by the OPERABLE containment isolation valves. Since the containment leakage may be greater than with IVSW in service, the margin of safety is reduced. The overall containment leakage should still be less than L_a based on demonstration during the last Type A leak rate test, that containment leakage (without IVSW in service) is $\leq 0.60\ L_a$. The reduction in the margin of safety is partially offset by a reduction in the risk for shutdown transients associated with averted plant shutdowns. Therefore, the margin of safety is not significantly reduced.

RELOCATED CHANGES
("R" Labeled Comments/Discussions)

Relocating Requirements which do not meet the Technical Specification criteria to documents with an established control program allows the Technical Specifications to be reserved only for those conditions or limitations upon reactor operation which are necessary to adequately limit the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety, thereby focusing the scope of Technical Specifications.

Therefore, requirements which do not meet the Technical Specification criteria in the NRC Final Policy Statement on Technical Specification Improvement for Nuclear Power Reactors (58FR 39132, dated 7/22/93) have been relocated to licensee controlled documents. This policy statement addresses the scope and purpose of Technical Specifications. In doing so, it establishes a specific set of objective criteria for determining which regulatory requirements and operating restrictions should be included in Technical Specifications. These criteria are as follows:

Criterion 1: Installed instrumentation that is used to detect and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary;

Criterion 2: A process variable that is an initial condition of a design basis accident (DBA) or transient analyses that either assumes the failure of or presents a challenge to the integrity of a fission product barrier;

Criterion 3: A structure, system or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission barrier;

Criterion 4: A structure, system or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety.

The application of these criteria is provided in the "Application of Screening Criteria to the HBRSEP Unit No. 2 Technical Specifications." Requirements which met the criteria have been included in the proposed improved Technical Specifications. Carolina Power & Light (CP&L) proposes to remove the requirements which do not meet the criteria from the Technical Specifications and relocate the requirements to a suitable owner controlled document. The requirements in the relocated Specifications are not affected by this Technical Specification change. CP&L will initially continue to perform the required operation and maintenance to assure that the requirements are satisfied. Relocating specific requirements for systems or variables has no impact on the system's operability or the variable's maintenance, as applicable.

Licensee controlled programs will be utilized as the control mechanism for the relocated Specifications as they will be placed in plant procedures or other licensee controlled documents. CP&L is allowed to make changes to these requirements, without prior NRC approval, if the change does not involve an unreviewed safety question. These controls are considered adequate for assuring structures, systems and components in the relocated Specifications are maintained operable and variables in the relocated Specifications are maintained within limits.

Carolina Power & Light Company has evaluated each of the proposed Technical Specification changes identified as "Relocated" and has concluded that they do not involve a significant hazards consideration. Our conclusion is in accordance with the criteria set forth in 10 CFR 50.92. The bases for the conclusion that proposed changes do not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   The proposed change relocates requirements and surveillances for structures, systems, components or variables which did not meet the criteria for inclusion in Technical Specifications as identified in the "Application of Selection Criteria to the HBRSEP Unit No. 2 Technical Specifications." The affected structures, systems, components or variables are not assumed to be initiators of analyzed events and are not assumed to mitigate accident or transient events. The requirements and surveillances for these affected structures, systems, components or variables will be relocated from the Technical Specifications to an appropriate administratively controlled document under licensee

control. Therefore, this change does not involve an increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change does not necessitate a physical alteration of the plant (no new or different type of equipment will be installed) or change in parameters governing normal plant operation. The proposed change will not impose any different requirements and adequate control of information will be maintained. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

The proposed change will not reduce a margin of safety because it has no impact on any safety analysis assumptions. In addition, the affected requirement will be relocated to an owner controlled document for which future changes will be evaluated pursuant to the requirements of licensee controlled programs. Therefore, this change does not involve a reduction in a margin of safety.

CTS

3.6 CONTAINMENT SYSTEMS

3.6.1 Containment (Atmospheric, Subatmospheric, Ice Condenser, and Dual)

[3.6.1.a] LCO 3.6.1 Containment shall be OPERABLE.

[3.6.1.a] APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
[M1]	A. Containment inoperable.	A.1 Restore containment to OPERABLE status.	1 hour
[M1]	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

Insert B 3.6.1-1 (Deleted)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.1.1	Perform required visual examinations and leakage rate testing except for containment air lock testing, in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions. The leakage rate acceptance criterion is $\leq 1.0\ L_a$. However, during the first unit startup following testing performed in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions, the leakage rate acceptance criteria are $< 0.6\ L_a$ for the Type B and Type C tests, and $< 0.75\ L_a$ for the Type A test.	-----NOTE----- SR 3.0.2 is not applicable ---------- In accordance with 10 CFR 50, Appendix J, as modified by approved exemptions
SR 3.6.1.2	Verify containment structural integrity in accordance with the Containment Tendon Surveillance Program.	In accordance with the Containment Tendon Surveillance Program

INSERT 3.6.1-2

Insert 3.6.1-2

SR 3.6.1.3 Perform required visual examinations and Type A leakage rate testing in accordance with the Containment Leakage Rate Testing Program.	In accordance with the Containment Leakage Rate Testing Program

CTS

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
[4.4.1] SR 3.6.2.1 ----------NOTES---------- 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria of SR 3.6.1.1 in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions. ---------- Perform required air lock leakage rate testing in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions. Option A The acceptance criteria for air lock testing are: a. Overall air lock leakage rate is ≤ [0.05 L_a] when tested at ≥ P_a. b. For each door, leakage rate is ≤ [.01 L_a] when tested at ≥ [psig]	Option A 28 -----NOTE------ SR 3.0.2 is not applicable ---------- In accordance with 10 CFR 50, Appendix J, as modified by approved exemptions Option A 28
[M6] SR 3.6.2.2 ----------NOTE---------- Only required to be performed upon entry or exit through the containment air lock. ---------- Verify only one door in the air lock can be opened at a time.	15 184 days 24 Months 15

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. (continued)	E.2 --------NOTE-------- Isolation devices in high radiation areas may be verified by use of administrative means. ---------- Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment
	AND E.3 Perform SR 3.6.3.7 for the resilient seal purge valves closed to comply with Required Action E.1	Once per [92] days
[M 6] Required Action and associated Completion Time not met.	A.1 Be in MODE 3 AND A.2 Be in MODE 5	6 hours 36 hours

[3.6.3.a]

[M32] OR

42 inch penetration (Supply or Exhaust) purge valves open and 6 inch penetration (pressure or vacuum relief) valves open simultaneously.

29

27

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
[M13] SR 3.6.3.[1] (3) ----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. ---------- Verify each containment isolation manual valve and blind flange that is located inside containment and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls. (and not locked, sealed or otherwise secured) (16)	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days
[4.4.2.9] SR 3.6.3.[1] (4) Verify the isolation time of each power operated and each automatic containment isolation valve is within limits. (Power operated) TSTF-46, R1	In accordance with the Inservice Testing Program or 92 days
SR 3.6.3.6 Cycle each weight or spring loaded check valve testable during operation through one complete cycle of full travel, and verify each check valve remains closed when the differential pressure in the direction of flow is ≤ [1.2] psid and opens when the differential pressure in the direction of flow is ≥ [1.2] psid and < [5.0] psid.	92 days (22)

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.7	Perform leakage rate testing for containment purge valves with resilient seals.	184 days AND Within 92 days after opening the valve
SR 3.6.3.8	Verify each automatic containment isolation valve that is not locked, sealed or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	~~18~~ months
SR 3.6.3.9	Cycle each weight or spring loaded check valve not testable during operation through one complete cycle of full travel, and verify each check valve remains closed when the differential pressure in the direction of flow is ≤ [1.2] psid and opens when the differential pressure in the direction of flow is ≥ [1.2] psid and < [5.0] psid.	18 months
SR 3.6.3.10	Verify each [12] inch containment purge valve is blocked to restrict the valve from opening > [50%].	~~18~~ months

(continued)

Supplement 2

CTS

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure (Atmospheric, Dual, and Ice Condenser)

[3.6.2] LCO 3.6.4 Containment pressure shall be ≥ (-0.8) psig and ≤ (+1.5) psig.

1.0

-0.8

2.6

[M16] APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
[3.6.2]	A. Containment pressure not within limits.	A.1 Restore containment pressure to within limits.	1 hour
[3.6.2]	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
		AND	
[3.6.2]		B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
[M17]	SR 3.6.4.1 Verify containment pressure is within limits.	12 hours

Supplement 2

CTS

INSERT 3.6.8-1

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
[M27]	SR 3.6.8.1	Verify IVSW tank pressure is ≥ 44 psig.	12 hours
[M27]	SR 3.6.8.2	Verify the IVSW tank volume is ≥ 85 gallons.	31 days
[A24]	SR 3.6.8.3	Verify the opening time of each air operated header injection valve is within limits.	In accordance with the Inservice Testing Program
[T4.1-3 Item 15]	SR 3.6.8.4	Verify each automatic valve in the IVSW System actuates to the correct position on an actual or simulated actuation signal.	18 months
[M27]	SR 3.6.8.5	Verify the IVSW dedicated nitrogen bottles will pressurize the IVSW tank to ≥ 44 psig.	18 months
[4.4.2c]	SR 3.6.8.6	Verify IVSW seal header flow rate is: a. ≤ 52.00 cc/minute for header A, b. ≤ 16.50 cc/minute for Header B, c ≤ 32.50 cc/minute for Header C, and d. ≤ 23.00 cc/minute for header D.	18 months

1 ITS SR 3.6.1.3 is created to adopt 10 CFR 50, Appendix J, Option B for containment visual examinations and Type A leakage rate testing. SR 3.6.1.1 is modified to limit its applicability to Type B and C leakage rate testing. This is necessary since HBRSEP adopted Appendix J, Option B for Type A testing only. Appendix J, Option A is still applicable to Type B and C testing. Additionally, NUREG SR 3.6.1.1 is modified to eliminate the reference to visual examinations. Appendix J visual examination requirements are associated with Type A leakage rate testing and are encompassed within ITS SR 3.6.1.3.

2 The HBRSEP design provides for one containment airlock.

3 Not Used.

4 The HBRSEP design includes closed systems with isolation valves inside the containment. The completion time for ITS 3.6.3 Required Action (RA) C.2 is modified to provide an appropriate completion time for the verification of isolation for valves inside the containment.

5 Consistent with the current licensing basis, the 42 inch purge supply and exhaust valves and the 6 inch pressure and vacuum relief valves may be opened for safety related reasons including operational testing and surveillances. The 42 inch and 6 inch valves may not be opened simultaneously

6 SR 3.6.6.3 is modified to reflect that the containment cooling flow rate limit is applied separately to each cooling unit.

7 A 72 hour completion time is not justified for an inoperable Spray Additive System at HBRSEP. The specification is modified to provide a 72 hour completion time for an inoperable train of the Spray Additive System. A new Condition was developed for the situation with the Spray Additive System inoperable. The Required Action for this new Condition requires restoring the Spray Additive System to OPERABLE status within 1 hour.

8 SR 3.6.7.2 is modified to eliminate the spray additive tank volume upper limit consistent with the current licensing basis.

9 SR 3.6.7.3 is modified to eliminate the spray additive tank NaOH concentration upper limit consistent with the current licensing basis.

10 The HBRSEP design does not have the capability to verify the flow (rate) from the spray additive tank. As such, this SR is not part of the CLB.

11 The HBRSEP design does not provide permanently installed Hydrogen Recombiners. Therefore, 3.6.8 is used for the Isolation Valve Seal

Water (IVSW) System. At HBRSEP the IVSW system is a containment system. An appropriate specification for IVSW is provided as ITS 3.6.8, Isolation Valve Seal Water System.

12 The HBRSEP design does not include a hydrogen mixing system.

13 The HBRSEP design does not include an iodine cleanup system.

14 Consistent with the current licensing basis, ISTS Specification 3.6.12, Vacuum Relief valves is not adopted. No credit is taken in the HBRSEP accident analysis for operation of the vacuum relief valves.

15 Testing of the airlock interlock is accomplished through having one door not completely engaged in the closed position, while attempting to open the second door. Failure of this surveillance effectively results in loss of containment integrity. Procedures and training serve to preclude challenges to this interlock during ingress or egress. This surveillance is contrary to processes and training of conservative operation when the interlock function is required. The door interlock mechanism cannot be easily bypassed. Failure rate of the interlock is low based on the design of the interlock.

Modifying the surveillance interval to 24 months (30 months with the allowance provided by SR 3.0.2) corresponds to the overall airlock leakage test frequency under 10 CFR 50, Appendix J, Option B. This permits the interlock to be tested in a MODE where the interlock is not required. With this change in frequency the need for the SR Note is eliminated. Testing can be performed during a plant shutdown and will not be required until the following plant shutdown.

16 The change eliminates the need to perform the SR on valves that are locked, sealed or otherwise secured in the required position. This change establishes consistency with comparable SRs for valves required to be in the correct position prior to an accident in the ECCS, AFW and SW.

17 Not used.

18 The HBRSEP design utilizes at least two barriers against the release of radioactive materials following an accident. CTS 3.6.3 does not provide for use of the closed system to isolate a failed containment isolation valve even thought the closed system is subject to Type A containment leakage test, is missile protected, and seismic category 1 piping. A closed system also typically has flow through it during normal operation such that any loss of integrity can be continually observed through leakage detection systems and system walkdowns. As such the use of a closed system is no different from isolating a failed containment isolation valve by use of a single valve, as specified in ISTS 3.6.3

RA A.1. Therefore, ISTS LCO 3.6.3, RA C.1 is modified to allow 72 hours to isolate a failed valve associated with a closed system. This 72 hour period provides time to perform repairs when relying on an intact closed system. A completion time of 72 hours is considered appropriate given that certain valves may be located inside containment, the reliability of the closed system, and that 72 hours is typically provided for losing on train of redundancy throughout the ISTS. If a closed system and associated containment isolation valve are both inoperable, the plant is in LCO 3.0.3 since there is no specific Condition specified.

19 A Note is added to 3.6.3 Actions to highlight the need to enter Conditions and Required Actions of LCO 3.6.8 when required IVSW is isolated from a penetration flowpath.

20 Consistent with the current licensing basis, the leakage testing requirements associated with ISTS SR 3.6.3.7. are not applicable to the HBRSEP purge valves. The HBRSEP design does not provide any reduction in offsite dose due to the presence of a shield building. Therefore, there is no applicable limit comparable to shield building leakage. ISTS 3.6.3 Condition E is not applicable. Refer to JFD 23 for additional information regarding the ISTS SR 3.6.3.7 testing.

21 ISTS 3.6.3 Condition E is not applicable to HBRSEP since the leakage testing requirements associated with ISTS SR 3.6.3.7. are not applicable to the HBRSEP purge valves. Refer to JFD 23 for additional information regarding the ISTS SR 3.6.3.7 testing.

22 SR 3.6.3.6 is applicable to subatmospheric containments. The HBRSEP design does not utilize a subatmospheric containment.

23 Consistent with the current licensing basis, ISTS SR 3.6.3.7 is not adopted. By letter dated, July 3, 1986, the NRC issued Amendment No. 99 to the Technical Specifications which added operational limitations and surveillance requirements for the containment purge and vent systems. These requirements were added to resolve NUREG-0737, Item II.E.4.2 and Multi-Plant Action B-20 issues relating to the purge and vent valves. To address the NRC concern regarding periodic surveillance of the resilient seats in the purge and vent valves, we stated by letter dated June 18, 1986, that the on-line leakage detection provided by the Penetration Pressurization System (PPS) would adequately monitor leakage through the purge and vent valves. The NRC found in a Safety Evaluation Report (SER) dated December 5, 1983 that continuous monitoring would be an acceptable alternative method for detecting seal deterioration.

In Refueling Outage 17, a plant modification will be implemented to transition from continuous monitoring of containment leakage utilizing the PPS to performance of penetration and containment isolation valve leakage testing on a periodic basis in accordance with 10 CFR 50,

Appendix J. To address the NRC concern regarding periodic surveillance of the resilient seals on the containment purge and vent valves, the resilient seals on the containment purge and vent valves will be replaced this refueling outage, and will be replaced every other refueling outage henceforth. An evaluation has been performed of the seal material which found that the seal material life expectancy exceeds the proposed replacement frequency. An evaluation has been performed in accordance with 10 CFR 50.59, and the evaluation has found that this modification does not pose an unreviewed safety question.

24 The HBRSEP design provides position limits on the inboard 42 inch purge valves only.

25 There is no basis to exclude the 42 inch purge supply and exhaust valves from being open or open under administrative control. Consistent with the current licensing basis, these valves may be opened for specified purposes provided they are not opened concurrently with the 6 inch pressure and vacuum relief valves.

26 Brackets are removed and plant specific values are incorporated.

27 Condition D is augmented to address the Current Licensing Basis prohibition against the simultaneous operation of containment purge and either pressure or vacuum relief penetrations.

28 SR 3.6.2.1 and Note 2 to SR 3.6.2.1 are modified to add a reference to Option A to reflect the CLB for containment airlock testing. The specific airlock leakage acceptance criteria are not adopted because no such requirement currently exists. The airlock's contribution to Type B and C containment leakage is limited such that the Type B and C containment leakage cannot exceed the applicable Type B and C containment leakage limits.

B 3.6 CONTAINMENT SYSTEMS

B 3.6.1 Containment (Atmospheric)

BASES

BACKGROUND

The containment consists of the concrete reactor building, its steel liner, and the penetrations through this structure. The structure is designed to contain radioactive material that may be released from the reactor core following a Design Basis Accident (DBA). Additionally, this structure provides shielding from the fission products that may be present in the containment atmosphere following accident conditions.

The containment is a reinforced concrete structure with a cylindrical wall, a flat foundation mat, and a shallow dome roof. The inside surface of the containment is lined with a carbon steel liner to ensure a high degree of leak tightness during operating and accident conditions.

For containments with ungrouted tendons, the cylinder wall is prestressed with a post tensioning system in the vertical and horizontal directions, and the dome roof is prestressed utilizing a three way post tensioning system.

The concrete reactor building is required for structural integrity of the containment under DBA conditions. The steel liner and its penetrations establish the leakage limiting boundary of the containment. Maintaining the containment OPERABLE limits the leakage of fission product radioactivity from the containment to the environment. SR 3.6.1.1 leakage rate requirements comply with 10 CFR 50, Appendix J, (Ref. 1), as modified by approved exemptions.

The isolation devices for the penetrations in the containment boundary are a part of the containment leak tight barrier. To maintain this leak tight barrier:

a. All penetrations required to be closed during accident conditions are either:

   1. capable of being closed by an OPERABLE automatic containment isolation system, or

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

The containment satisfies Criterion 3 of the NRC Policy Statement.

LCO

Containment OPERABILITY is maintained by limiting leakage to $\leq 1.0\ L_a$, except prior to the first startup after performing a required 10 CFR 50, Appendix J, leakage test. At this time, the combined Type B and C leakage must be $< 0.6\ L_a$, and the overall Type A leakage must be $< 0.75\ L_a$.

Compliance with this LCO will ensure a containment configuration, including equipment hatches, that is structurally sound and that will limit leakage to those leakage rates assumed in the safety analysis.

Individual leakage rates specified for the containment air lock (LCO 3.6.2) [and purge valves with resilient seals (LCO 3.6.3)] are not specifically part of the acceptance criteria of 10 CFR 50, Appendix J. Therefore, leakage rates exceeding these individual limits only result in the containment being inoperable when the leakage results in exceeding the acceptance criteria of Appendix J.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material into containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, containment is not required to be OPERABLE in MODE 5 to prevent leakage of radioactive material from containment. The requirements for containment during MODE 6 are addressed in LCO 3.9.4, "Containment Penetrations."

ACTIONS

A.1

In the event containment is inoperable, containment must be restored to OPERABLE status within 1 hour. The 1 hour Completion Time provides a period of time to correct the problem commensurate with the importance of maintaining containment during MODES 1, 2, 3, and 4. This time period

(continued)

Insert B3.6.1-1 has been deleted.

BASES

ACTIONS

A.1 (continued)

also ensures that the probability of an accident (requiring containment OPERABILITY) occurring during periods when containment is inoperable is minimal.

B.1 and B.2

If 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 6 hours and to MODE 5 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.

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1

Maintaining the containment OPERABLE requires compliance with the visual examinations and leakage rate test requirements of 10 CFR 50, Appendix J (Ref. 1), as modified by approved exemptions. Failure to meet air lock [and purge valve with resilient seal] leakage limits specified in LCO 3.6.2 [and LCO 3.6.3] does not invalidate the acceptability of these overall leakage determinations unless their contribution to overall Type A, B, and C leakage causes that to exceed limits. As left leakage prior to the first startup after performing a required 10 CFR 50, Appendix J, leakage test is required to be $\leq 0.6\ L_a$ for combined Type B and C leakage and $\leq 0.75\ L_a$ for overall Type A leakage. At all other times between required leakage rate tests, the acceptance criteria is based on an overall Type A leakage limit of $\leq 1.0\ L_a$. At $\leq 1.0\ L_a$ the offsite dose consequences are bounded by the assumptions of the safety analysis. SR Frequencies are as required by Appendix J, as modified by approved exemptions. Thus, SR 3.0.2 (which allows Frequency extensions) does not apply. These periodic testing requirements verify that the containment leakage rate does not exceed the leakage rate assumed in the safety analysis.

(continued)

Insert B3.6.1-2

Air lock leakage is not acceptable if its

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.2

For ungrouted, post tensioned tendons, this SR ensures that the structural integrity of the containment will be maintained in accordance with the provisions of the Containment Tendon Surveillance Program. Testing and Frequency are consistent with the recommendations of Regulatory Guide 1.35 (Ref. 4).

REFERENCES

1. 10 CFR 50, Appendix J.
2. FSAR, Chapter [15]
3. FSAR, Section [6.2]
4. Regulatory Guide 1.35, Revision [1]

Insert B 3.6.1-3

Insert B3.6.1-3

SR 3.6.1.3

Maintaining the containment OPERABLE requires compliance with the visual examinations and leakage rate test requirements of the Containment Leakage Rate Testing Program applicable to Type A leakage rate tests. Air lock leakage is not acceptable if its contribution to overall Type A leakage causes overall Type A leakage to exceed limits. As left leakage after performing a required 10 CFR 50, Appendix J, leakage test is required to be $< 0.75\ L_a$ for overall Type A leakage. At $\leq 1.0\ L_a$ the offsite dose consequences are bounded by the assumptions of the safety analysis. SR Frequencies are as required by the Containment Leakage Rate Testing Program. This periodic testing requirement verifies that the containment leakage rate does not exceed the leakage rate assumed in the safety analysis.

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.6.2.1

Maintaining containment air lock OPERABLE requires compliance with the leakage rate test requirements of 10 CFR 50, Appendix J (Ref. 1), as modified by approved exemptions. This SR reflects the leakage rate testing requirements with regard to air lock leakage (Type B leakage tests). The acceptance criteria were established during initial air lock and containment OPERABILITY testing. The periodic testing requirements verify that the air lock leakage does not exceed the allowed fraction of the overall containment leakage rate. The Frequency is required by Appendix J (Ref. 1), as modified by approved exemptions. Thus, SR 3.0.2 (which allows Frequency extensions) does not apply.

The SR has been modified by two Notes. Note 1 states that an inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. This is considered reasonable since either air lock door is capable of providing a fission product barrier in the event of a DBA. Note 2 has been added to this SR requiring the results to be evaluated against the acceptance criteria of SR 3.6.1.1. This ensures that air lock leakage is properly accounted for in determining the overall containment leakage rate.

SR 3.6.2.2

The air lock interlock is designed to prevent simultaneous opening of both doors in a single air lock. Since both the inner and outer doors of an air lock are designed to withstand the maximum expected post accident containment pressure, closure of either door will support containment OPERABILITY. Thus, the door interlock feature supports containment OPERABILITY while the air lock is being used for personnel transit in and out of the containment. Periodic testing of this interlock demonstrates that the interlock will function as designed and that simultaneous opening of the inner and outer doors will not inadvertently occur. Due to the purely mechanical nature of this interlock, and given that the interlock mechanism is only challenged when the containment air lock door is opened, this test is only required to be performed upon entering or exiting a containment air lock but is not required more frequently.

(continued)

Insert B3.6.2-2

used for entry and exit (procedures require strict adherence to single door opening),

Insert 3.6.2-3

every 24 months. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage, and the potential for loss of containment OPERABILITY if the surveillance were performed with the reactor at power. The 24 month Frequency for the interlock is justified based on generic operating experience.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.2.2 (continued)

~~than every 184 days~~. The ~~184 day~~ Frequency is based on engineering judgment and is considered adequate in view of ~~other indications of door and interlock mechanism status~~ ~~available~~ to operations personnel.

REFERENCES

1. ~~10 CFR 50, Appendix J~~
2. FSAR, ~~Section 6.2~~

Insert B 3.6.2-4

TSTF-17 R1

Paragraph 6.9.2

The Containment Leakage RATE Testing Program

Supplement 2

Insert B3.6.2-4

given that the interlock is not challenged during the use of the interlock.

Insert B3.6.3-1 (22)

BASES

BACKGROUND (continued) time limits assumed in the safety analyses. Therefore, the OPERABILITY requirements provide assurance that the containment function assumed in the safety analyses will be maintained.

Containment

(11) Personnel exposure to airborne radioactive contaminants

Insert B3.6.3-2 (12)

Shutdown Purge System ([42] inch purge valves)

The Shutdown Purge System operates to supply outside air into the containment for ventilation and cooling or heating and may also be used to reduce the concentration of noble gases within containment prior to and during personnel access. The supply and exhaust lines each contain two isolation valves. Because of their large size, the [42] inch purge valves in some units are not qualified for automatic closure from their open position under DBA conditions. Therefore, the [42] inch purge valves are normally maintained closed in MODES 1, 2, 3, and 4 to ensure the containment boundary is maintained.

(12) Insert B3.6.3-3

Minipurge System ([8] inch purge valves)

The Minipurge System operates to:

a. Reduce the concentration of noble gases within containment prior to and during personnel access, and

b. Equalize internal and external pressures.

Insert B3.6.3-4 (13)

Since the valves used in the Minipurge System are designed to meet the requirements for automatic containment isolation valves, these valves may be opened as needed in MODES 1, 2, 3, and 4.

APPLICABLE SAFETY ANALYSES The containment isolation valve LCO was derived from the assumptions related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during major accidents. As part of the containment boundary, containment isolation valve OPERABILITY supports leak tightness of the containment. Therefore, the safety analyses of any event requiring isolation of containment is applicable to this LCO.

(continued)

Insert B3.6.3-1

The Isolation Valve Seal Water System (IVSW) assures the effectiveness of certain containment isolation valves during any condition which requires containment isolation, by providing a water seal at the valves. The requirements for the IVSW system are specified in LCO 3.6.8, "IVSW System."

Insert B3.6.3-2

Inboard purge supply and exhaust valves are restricted from exceeding 70 degrees open. This restriction assures proper valve closure under dynamic conditions and consequently limits offsite dose consequences resulting from a DBA which occurs when the valves are open.

Insert B3.6.3-3

They may be opened during plant operation when needed for safety related reasons (both equipment and personnel) to support plant operations and maintenance activities within the containment.

Insert B3.6.3-4

Containment Pressure and Vacuum Relief Valves

The containment pressure and vacuum relief valves are provided to control variations in containment pressure with respect to atmospheric pressure which may result from air temperature changes, barometric pressure changes or air in-leakage. These valves are normally maintained closed, however they may be opened as needed in MODES 1, 2, 3 and 4 to equalize internal and external pressure, provided that they are not open simultaneously with the containment purge valves.

BASES (continued)

LCO

Containment isolation valves form a part of the containment boundary. The containment isolation valves' safety function is related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during a DBA.

The automatic power operated isolation valves are required to have isolation times within limits and to actuate on an automatic isolation signal. The 42 inch purge valves must be maintained sealed closed or have blocks installed to prevent full opening. Blocked purge valves also actuate on an automatic signal. The valves covered by this LCO are listed along with their associated stroke times in the In-Service Testing Program.

The normally closed isolation valves are considered OPERABLE when manual valves are closed, automatic valves are de-activated and secured in their closed position, blind flanges are in place, and closed systems are intact. These passive isolation valves/devices are those listed in Reference 1.

Purge valves with resilient seals [and secondary containment bypass valves] must meet additional leakage rate requirements. The other containment isolation valve leakage rates are addressed by LCO 3.6.1, "Containment," as Type C testing.

This LCO provides assurance that the containment isolation valves and purge valves will perform their designed safety functions to minimize the loss of reactor coolant inventory and establish the containment boundary during accidents.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, the containment isolation valves are not required to be OPERABLE in MODE 5. The requirements for containment isolation valves during MODE 6 are addressed in LCO 3.9.4, "Containment Penetrations."

(continued)

Insert B 3.6.3-7 (Deleted)

Insert B3.6.3-7b

For some penetration flowpaths supplied by IVSW, an inoperable isolation valve may prevent the IVSW system from providing a water seal. Although not directly comparable to leak rate testing performed in accordance with 10 CFR 50, Appendix J, the hydrostatic testing of the IVSW headers specified in SR 3.6.8.6 provides a means of verifying that leakage through the IVSW supplied isolation valves is limited. The four hour Completion Time to isolate the penetration is acceptable based upon consideration of the time required to isolate the flowpath, the limited leakage potential for the isolation valve and the low probability of an event requiring containment isolation during the specified time period to isolate the flowpath.

BASES

ACTIONS

A.1 and A.2 (continued)

failure. Isolation barriers that meet this criterion are a closed and de-activated automatic containment isolation valve, a closed manual valve, a blind flange, and a check valve with flow through the valve secured. For a penetration flow path isolated in accordance with Required Action A.1, the device used to isolate the penetration should be the closest available one to containment. Required Action A.1 must be completed within 4 hours. The 4 hour Completion Time is reasonable, considering the time required to isolate the penetration and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4.

22

Insert B3.6.3-7b

For affected penetration flow paths that cannot be restored to OPERABLE status within the 4 hour Completion Time and that have been isolated in accordance with Required Action A.1, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that 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, through a system walkdown, that those isolation devices outside containment and capable of being mispositioned are in the correct position. The Completion Time of "once per 31 days for isolation devices outside containment" is appropriate considering the fact that the devices are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

Condition A has been modified by a Note indicating that this Condition is only applicable to those penetration flow paths with two containment isolation valves. For penetration flow paths with only one containment isolation valve and a closed system, Condition C provides the appropriate actions.

(continued)

Supplement 2

BASES

ACTIONS

A.1 and A.2 (continued)

Required Action A.2 is modified by a Note that applies to isolation devices located in high radiation areas and allows these devices to be verified closed 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 devices once they have been verified to be in the proper position, is small.

B.1

With two containment isolation valves in one or more penetration flow paths inoperable, the affected penetration flow path must be isolated within 1 hour. 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 ACTIONS of LCO 3.6.1. In the event the affected penetration is isolated in accordance with Required Action B.1, the affected penetration must be verified to be isolated on a periodic basis per Required Action A.2, which remains in effect. This periodic verification is necessary to assure leak tightness of containment and that penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying each affected penetration flow path is isolated is appropriate considering the fact that the valves are operated under administrative control and the probability of their misalignment is low.

for isolation devices outside containment" (20)

Condition B is modified by a Note indicating this Condition is only applicable to penetration flow paths with two containment isolation valves. Condition A of this LCO addresses the condition of one containment isolation valve inoperable in this type of penetration flow path.

(continued)

Insert B3.6.3-8

Not used.

Insert B3.6.3-9

Not used.

Insert B3.6.3-10

Not used.

BASES

ACTIONS (continued)

C.1 and C.2

With one or more penetration flow paths with one containment isolation valve inoperable, the inoperable valve flow path 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 flow path. Required Action C.1 must be completed within the 4 hour Completion Time. The specified time period is reasonable considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary, and the relative importance of maintaining containment integrity during MODES 1, 2, 3, and 4. In the event the affected penetration flow path is isolated in accordance with Required Action C.1, the affected penetration flow path must be verified to be isolated on a periodic basis. This periodic verification is necessary to assure leak tightness of containment and that containment penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying that each affected penetration flow path is isolated is appropriate because the 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 those penetration flow paths with only one containment isolation valve and a closed system. This Note is necessary since this Condition is written to specifically address those penetration flow paths in a closed system.

Required Action C.2 is modified by a Note that applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed 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 small.

(continued)

Supplement 2

Insert B3.6.3-11

The device used to isolate the flow path should be the one closest available to containment.

Insert B3.6.3-12

Not used.

Insert B3.6.3-13

For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

Insert B3.6.3-14

In some instances penetration flow paths connected to closed systems contain more than one containment isolation valve. The inoperability of one of these valves does not render the containment penetration flow path inoperable if the remaining containment isolation valve(s) is operable and the closed system is intact.

BASES

ACTIONS

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

automatically isolated will be in the isolation position should an event occur. This Required Action does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those isolation devices outside containment capable of being mispositioned are in the correct position. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

For the containment purge valve with resilient seal that is isolated in accordance with Required Action E.1, SR 3.6.3.7 must be performed at least once every [92] days. This assures that degradation of the resilient seal is detected and confirms that the leakage rate of the containment purge valve does not increase during the time the penetration is isolated. The normal Frequency for SR 3.6.3.7, 184 days, is based on an NRC initiative, Generic Issue B-20 (Ref. 3). Since more reliance is placed on a single valve while in this Condition, it is prudent to perform the SR more often. Therefore, a Frequency of once per [92] days was chosen and has been shown to be acceptable based on operating experience.

and F.2

If the Required Actions and associated Completion Times are not 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 6 hours and to MODE 5 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.

or if the 42 inch penetration (Supply Or Exhaust) purge valves are open and the 6 inch penetration (pressure or vacuum relief) valves are open simultaneously

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1

Each [42] inch containment purge valve is required to be verified sealed closed at 31 day intervals. This Surveillance is designed to ensure that a gross breach of containment is not caused by an inadvertent or spurious opening of a containment purge valve. Detailed analysis of the purge valves failed to conclusively demonstrate their ability to close during a LOCA in time to limit offsite doses. Therefore, these valves are required to be in the sealed closed position during MODES 1, 2, 3, and 4. A containment purge valve that is sealed closed must have motive power to the valve operator removed. This can be accomplished by de-energizing the source of electric power or by removing the air supply to the valve operator. In this application, the term "sealed" has no connotation of leak tightness. The Frequency is a result of an NRC initiative, Generic Issue B-24 (Ref. 4), related to containment purge valve use during plant operations. In the event purge valve leakage requires entry into Condition E, the Surveillance permits opening one purge valve in a penetration flow path to perform repairs.

SR 3.6.3.2

This SR ensures that the [42 inch] [supply & exhaust] [and 6 inch pressure and vacuum relief valves] purge valves are closed as required or, if open, open for an allowable reason. If a purge valve is open in violation of this SR, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits. The SR is not required to be met when the [42 inch] purge valves are open for the reasons stated. The valves may be opened for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. The [42 inch] purge valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day Frequency is consistent with other containment isolation valve requirements discussed in SR 3.6.3.3.

Since it is not operationally necessary, it is desirable to preclude the 42 inch valves & 6 inch valves from being open at the same time. A Note to this SR restricts the 6 inch & 42 inch valves from being open simultaneously.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.6

This SR requires verification that each containment isolation manual valve and blind flange located outside containment and 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 containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those containment isolation valves outside containment and capable of being mispositioned are in the correct position. Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day Frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions. The SR specifies that containment isolation valves that are open under administrative controls are not required to meet the SR during the time the valves are open.

The Note applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3 and 4 for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in the proper position, is small.

SR 3.6.3.7

This SR requires verification that each containment isolation manual valve and blind flange located inside containment and 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 containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate since these containment isolation valves are operated under

(continued)

Insert B 3.6.3-15

This SR does not apply to valves that are locked sealed or otherwised secured in the closed position, since these were verified to be in the correct position upon locking, sealing or securing.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.6 (continued)

administrative controls and the probability of their misalignment is low. The SR specifies that containment isolation valves that are open under administrative controls are not required to meet the SR during the time they are open. Insert B.3.6.3-16

This Note allows valves and blind flanges located in high radiation areas to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3, and 4, for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in their proper position, is small.

SR 3.6.3.6

Verifying that the isolation time of each power operated and automatic containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analyses. The isolation time and Frequency of this SR are in accordance with the Inservice Testing Program or 92 days.

SR 3.6.3.6

In subatmospheric containments, the check valves that serve a containment isolation function are weight or spring loaded to provide positive closure in the direction of flow. This ensures that these check valves will remain closed when the inside containment atmosphere returns to subatmospheric conditions following a DBA. SR 3.6.3.6 requires verification of the operation of the check valves that are testable during unit operation. The Frequency of 92 days is consistent with the Inservice Testing Program requirement for valve testing on a 92 day Frequency.

(continued)

Insert B 3.6.3-16

This SR does not apply to valves that are locked sealed or otherwised secured in the closed position, since these were verified to be in the correct position upon locking, sealing or securing.

Supplement 2

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.7

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, is required to ensure OPERABILITY. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of 184 days was established as part of the NRC resolution of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration" (Ref. 3).

Additionally, this SR must be performed within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (beyond that occurring to a valve that has not been opened). Thus, decreasing the interval (from 184 days) is a prudent measure after a valve has been opened.

SR 3.6.3.8

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures that each automatic containment isolation valve will actuate to its isolation position on a containment isolation signal. This surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The ~~18~~ month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass this Surveillance when performed at the ~~18~~ month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.9

In subatmospheric containments, the check valves that serve a containment isolation function are weight or spring loaded to provide positive closure in the direction of flow. This ensures that these check valves will remain closed when the inside containment atmosphere returns to subatmospheric conditions following a DBA. SR 3.6.3.9 verifies the operation of the check valves that are not testable during unit operation. The Frequency of 18 months is based on such factors as the inaccessibility of these valves, the fact that the unit must be shut down to perform the tests, and the successful results of the tests on an 18 month basis during past unit operation.

SR 3.6.3.10

Reviewer's Note: This SR is only required for those units with resilient seal purge valves allowed to be open during [MODE 1, 2, 3, or 4] and having blocking devices on the valves that are not permanently installed.

Verifying that each 42 inch containment purge valve is blocked to restrict opening to ≤ 50% is required to ensure that the valves can close under DBA conditions within the times assumed in the analyses of References 1 and 2. If a LOCA occurs, the purge valves must close to maintain containment leakage within the values assumed in the accident analysis. At other times when purge valves are required to be capable of closing (e.g., during movement of irradiated fuel assemblies), pressurization concerns are not present, thus the purge valves can be fully open. The 18 month Frequency is appropriate because the blocking devices are typically removed only during a refueling outage.

SR 3.6.3.11

This SR ensures that the combined leakage rate of all shield building bypass leakage paths is less than or equal to the specified leakage rate. This provides assurance that the assumptions in the safety analysis are met. The leakage rate of each bypass leakage path is assumed to be the

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.11 (continued)

maximum pathway leakage (leakage through the worse of the two isolation valves) unless the penetration is isolated by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. In this case, the leakage rate of the isolated bypass leakage path is assumed to be the actual pathway leakage through the isolation device. If both isolation valves in the penetration are closed, the actual leakage rate is the lesser leakage rate of the two valves. This method of quantifying maximum pathway leakage is only to be used for this SR (i.e., Appendix J maximum pathway leakage limits are to be quantified in accordance with Appendix J). The Frequency is required by 10 CFR 50, Appendix J, as modified by approved exemptions (and therefore, the Frequency extensions of SR 3.0.2 may not be applied), since the testing is an Appendix J, Type C test. This SR simply imposes additional acceptance criteria.

[By pass leakage is considered part of L_a. [Reviewer's Note: Unless specifically exempted].]

REFERENCES

1. (Chapter) UFSAR, Section (15).
2. UFSAR, Section (6.2).
3. Generic Issue B-20, "Containment Leakage Due to Seal Deterioration."
4. Generic Issue B-24.

3. Standard Review Plan 6.2.4

TSTF 30, R1

(1)

BASES (continued)

ACTIONS

A.1

When containment pressure is not within the limits of the LCO, it must be restored to within these limits within 1 hour. The Required Action is necessary to return operation to within the bounds of the containment analysis. The 1 hour Completion Time is consistent with the ACTIONS of LCO 3.6.1, "Containment," which requires that containment be restored to OPERABLE status within 1 hour.

B.1 and B.2

If containment pressure cannot be restored to within limits 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 6 hours and to MODE 5 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.

SURVEILLANCE REQUIREMENTS

SR 3.6.4(0).1

Verifying that containment pressure is within limits ensures that unit operation remains within the limits assumed in the containment analysis. The 12 hour Frequency of this SR was developed based on operating experience related to trending of containment pressure variations during the applicable MODES. Furthermore, the 12 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal containment pressure condition.

REFERENCES

1. (U) FSAR, Section ~~6.2~~
2. 10 CFR 50, Appendix K.

B 3.6 CONTAINMENT SYSTEMS

B 3.6.7 Spray Additive System (Atmospheric, Subatmospheric, Ice Condenser, and Dual)

BASES

BACKGROUND

The Spray Additive System is a subsystem of the Containment Spray System that assists in reducing the iodine fission product inventory in the containment atmosphere resulting from a Design Basis Accident (DBA).

Radioiodine in its various forms is the fission product of primary concern in the evaluation of a DBA. It is absorbed by the spray from the containment atmosphere. To enhance the iodine absorption capacity of the spray, the spray solution is adjusted to an alkaline pH that promotes iodine hydrolysis, in which iodine is converted to nonvolatile forms. Because of its stability when exposed to radiation and elevated temperature, sodium hydroxide (NaOH) is the preferred spray additive. The NaOH added to the spray also ensures a pH value of between 8.5 and 11.0 of the solution recirculated from the containment sump. This pH band minimizes the evolution of iodine as well as the occurrence of chloride and caustic stress corrosion on mechanical systems and components.

Eductor Feed System Only

The Spray Additive System consists of one spray additive tank that is shared by the two trains of spray additive equipment. Each train of equipment provides a flow path from the spray additive tank to a containment spray pump and consists of an eductor for each containment spray pump, valves, instrumentation, and connecting piping. Each eductor draws the NaOH spray solution from the common tank using a portion of the borated water discharged by the containment spray pump as the motive flow. The eductor mixes the NaOH solution and the borated water and discharges the mixture into the spray pump suction line. The eductors are designed to ensure that the pH of the spray mixture is between 8.5 and 11.0 during the injection phase.

Insert 3.6.7-0

(continued)

Insert B 3.6.7-0

Each train of the Spray Additive System is not totally independent of the other train. Certain passive components (tank, piping, etc.) as well as redundant active components (valves) are shared by both trains. Depending upon which component is affected, the complete Spray Additive System may be inoperable or only one train may be inoperable.

Supplement 2

BASES

APPLICABLE SAFETY ANALYSES (continued)

The DBA analyses assume that one train of the Containment Spray System/Spray Additive System is inoperable and that the entire spray additive tank volume is added to the remaining Containment Spray System flow path.

The Spray Additive System satisfies Criterion 3 of the NRC Policy Statement.

LCO

The Spray Additive System is necessary to reduce the release of radioactive material to the environment in the event of a DBA. To be considered OPERABLE, the volume and concentration of the spray additive solution must be sufficient to provide NaOH injection into the spray flow until the Containment Spray System suction path is switched from the RWST to the containment sump, and to raise the average spray solution pH to a level conducive to iodine removal, namely, to between 7.2 and 11.0*. This pH range maximizes the effectiveness of the iodine removal mechanism without introducing conditions that may induce caustic stress corrosion cracking of mechanical system components. In addition, it is essential that valves in the Spray Additive System flow paths are properly positioned and that automatic valves are capable of activating to their correct positions.

Insert B3.6.7-00

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment requiring the operation of the Spray Additive System. The Spray Additive System assists in reducing the iodine fission product inventory prior to release to the environment.

In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations in these MODES. Thus, the Spray Additive System is not required to be OPERABLE in MODE 5 or 6.

ACTIONS

A.1 ONE Train

If the Spray Additive System is inoperable, it must be restored to OPERABLE within 72 hours. The pH adjustment of

(continued)

Insert B 3.6.7-0a

For a train of the Spray Additive System to be considered Operable, it must be capable of supplying its train's Spray Additive System flow to its associated Containment Spray System train.

BASES

ACTIONS

A.1 (continued)

Insert B3.6.7-1 (20)

~~the Containment Spray System flow for corrosion protection and iodine removal enhancement is reduced in this condition. The Containment Spray System would still be available and would remove some iodine from the containment atmosphere in the event of a DBA.~~ The 72 hour Completion Time takes into account the redundant flow path capabilities and the low probability of the worst case DBA occurring during this period.

Insert B3.6.7-2 (20)

C

B.1 and B.2

If the Spray Additive System 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 6 hours and to MODE 5 within 84 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems. The extended interval to reach MODE 5 allows 48 hours for restoration of the Spray Additive System in MODE 3 and 36 hours to reach MODE 5. This is reasonable when considering the reduced pressure and temperature conditions in MODE 3 for the release of radioactive material from the Reactor Coolant System.

SURVEILLANCE REQUIREMENTS

SR 3.6.7.1

Verifying the correct alignment of Spray Additive System manual, power operated, and automatic valves in the spray additive flow path provides assurance that the system is able to provide additive to the Containment Spray System in the event of a DBA. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves were verified to be in the correct position prior to locking, sealing, or securing. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those valves outside containment and capable of potentially being mispositioned are in the correct position.

(continued)

Insert B3.6.7-1

With one train of the Containment Spray Additive System inoperable, the remaining train is capable of supplying its flow to the associated Containment Spray System train. This circumstance is bounded by the inoperablility of a Containment Spray Train. In this condition the redundant train of the Spray Additive System in conjunction with the associated Containment Spray Train provides iodine removal capability consistent with the assumptions in the accident analysis.

Insert B3.6.7-2

B.1

If the Spray Additive System is inoperable for reasons other than Condition A, one train must be restored to OPERABLE status within 1 hour. The pH adjustment of the Containment Spray System flow for corrosion protection and iodine removal enhancement is reduced in this condition. The Containment Spray System would still be available and would remove some iodine from the containment atmosphere in the event of a DBA. The 1 hour Completion Time takes into account the time necessary to restore the System to Operable Status, the relative importance of pH adjustment of the Containment Spray System flow for corrosion protection and iodine removal as well as the low probability of the worst case DBA occurring during this period.

B 3.6 CONTAINMENT SYSTEMS

B 3.6.8 Isolation Valve Seal Water (IVSW) System

BASES

BACKGROUND

The Isolation Valve Seal Water (IVSW) System assures the effectiveness of certain containment isolation valves during any condition which requires containment isolation, by providing a water seal at the valves. These valves are located in lines that are connected to the Reactor Coolant System (RCS), or that could be exposed to the containment atmosphere in the event of a loss of coolant accident (LOCA). The system provides a reliable means for injecting seal water between the seats and stem packing of the globe and double disc types of isolation valves, and into the piping between other closed isolation valves. The system provides assurance that, should an accident occur, the containment leak rate is no greater than that assumed in the accident analysis by providing seal water at a pressure $\geq$ 1.1 times the calculated peak containment internal pressure (Pa) related to the design bases accident. The system is designed to maintain this seal for at least 30 days. The possibility of leakage from the containment or RCS past the first isolation point is thereby prevented by assuring that if leakage does exist, it will be from the IVSW System into containment.

The system includes one 175 gallon seal water tank capable of supplying the total requirements of the system. The IVSW tank's required volume is maintained and the tank is pressurized with nitrogen. The normal supply of makeup water to the IVSW tank is the Primary Water System. In the event Primary Water is not available, emergency makeup can be supplied from the Service Water System. The Plant Nitrogen System provides the normal supply of nitrogen to the IVSW tank. An automatic backup supply is provided from two dedicated high pressure nitrogen bottles (Ref. 1).

The system is normally in a static condition with the seal water injection tank filled and pressurized. Indication of IVSW tank level and pressure along with corresponding low level and low pressure alarms are provided in the Control Room. The tank supplies pressurized water to four distribution headers. Header "A" requires manual operation

(continued)

BASES

BACKGROUND (continued)

and serves lines that are normally filled with fluid following a LOCA, and lines that must remain in service for a period of time following the accident. Headers "B", "C", and "D" are automatic headers that are pressurized through one or both of two redundant, fail open, air operated valves arranged in parallel. A loss of power will cause these valves to fail open. System operation is initiated by a Phase A containment isolation signal which accompanies any SI signal.

APPLICABLE SAFETY ANALYSES

The DBA that results in a release of radioactive material within containment is a loss of coolant accident (LOCA). The analyses for the LOCA assumes the isolation of containment is completed and leakage from containment is at a rate equivalent to the design leakage rate. As part of the containment boundary, containment isolation valves function to support the leak tightness of containment. By maintaining this barrier, offsite dose calculations will be less than the 10 CFR 100 guidelines during a DBA (Ref. 2).

The IVSW System actuates on a containment isolation signal and functions to assure the actual leakage is no greater than the design value. IVSW assures the effectiveness of certain isolation valves to limit containment leakage by pressurizing the affected containment penetration flow paths at a pressure $\geq$ 1.1 times Pa. IVSW is designed to maintain this seal for at least 30 days. A single failure analysis shows the failure of any active component will not prevent fulfilling the design function of the system. By meeting these requirements, IVSW is considered a qualified seal system in accordance with 10 CFR 50, Appendix J (Ref. 3).

The Isolation Valve Seal Water System satisfies Criterion 3 of the NRC Policy Statement.

LCO

During the DBA, the IVSW System must function to seal the associated penetration flow paths. OPERABILITY of the IVSW System is based on the its ability to seal selected containment penetration flow paths, at elevated pressure for at least 30 days assuming a single active failure. This requires that the IVSW tank be maintained with an adequate

(continued)

BASES

LCO (continued)

volume of water at sufficient pressure to provide the motive force necessary to move this fluid to the applicable penetration. Piping as well as redundant active components (regulators and valves) necessary to provide a system capable of sustaining a single active failure are required to be OPERABLE. Automatic makeup from the dedicated nitrogen bottles and manual capability for makeup from both the Service Water System and the Primary Water System is required for the IVSW System to be OPERABLE.

APPLICABILITY

In MODES 1, 2, 3 and 4, a DBA could cause a release of radioactive material to containment. Therefore, the IVSW System is required to be OPERABLE in MODES 1, 2, 3 and 4 to prevent leakage from containment. IVSW is not required to be OPERABLE in MODES 5 and 6, since the probability and consequences of these events are reduced due to the pressure and temperature limitations applicable to these MODES.

ACTIONS

A.1

With the IVSW system inoperable, the system must be restored to OPERABLE status within 72 hours. The 72 hour completion time is reasonable considering the time necessary to repair most components and the low probability of an event which would require the IVSW System to function.

Without the benefit of the IVSW System the effectiveness of certain containment isolation valves to limit the containment leakage rate following a DBA is reduced. The containment is designed with an allowable leakage rate not to exceed 0.1% of the containment volume per day. The maximum allowable leakage rate is used to evaluate offsite doses resulting from a DBA. Confirmation that the leakage rate is within limit is demonstrated by the performance of a Type A leakage rate test in accordance with the Containment Leakage Rate Testing Program as required by LCO 3.6.1, "Containment." During the performance of the Type A test no credit is taken for the IVSW system in meeting the containment leakage rate criteria. As such, in the event of a DBA without an OPERABLE IVSW System, both the whole body and thyroid offsite doses would be within the guidelines specified in 10 CFR Part 100.

BASES

ACTIONS (continued)

B.1 and B.2

If the Required Actions and associated Completion Times are not 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 6 hours and to MODE 5 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.

SURVEILLANCE REQUIREMENTS

SR 3.6.8.1

This SR verifies the IVSW tank has the necessary pressure to provide motive force to the seal water. A pressure ≥ 44 psig ensures the containment penetration flowpaths that are sealed by the IVSW System are maintained at a pressure which is at least 1.1 times the calculated peak containment internal pressure (P_a) related to the design bases accident. Verification of the IVSW tank pressure on a Frequency of once per 12 hours is acceptable. This Frequency is sufficient to ensure availability of IVSW. Operating experience has shown this Frequency to be appropriate for early detection and correction of off normal trends.

SR 3.6.8.2

This SR verifies the IVSW tank has an initial volume of water necessary to provide seal water to the containment isolation valves served by the IVSW System. An initial volume ≥ 85 gallons ensures the IVSW System contains the proper inventory to maintain the required seal. Verification of IVSW tank level on a Frequency of once per 31 days is acceptable since tank level is continuously monitored by installed instrumentation and will alarm in the control room prior to level decreasing to 85 gallons.

SR 3.6.8.3

This SR verifies the stroke time of each automatic air operated header injection solenoid valve is within limits. The frequency is specified by the Inservice Testing Program, and previous operating experience has shown that these valves usually pass the required test when performed.

SR 3.6.8.4

This SR ensures that automatic header injection valves

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.8.4 (continued)

actuate to the correct position on a simulated or actual signal. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable.

SR 3.6.8.5

This SR ensures the capability of the dedicated nitrogen bottles to pressurize the IVSW system independent of the Plant Nitrogen System. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

SR 3.6.8.6

Integrity of the IVSW seal boundary is important in providing assurance that the design leakage value required for the system to perform its sealing function is not exceeded. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

REFERENCES

1. UFSAR, Section 6.8.
2. UFSAR, Chapter 15.
3. A. Schwencer (NRC) letter to CP&L dated 4/23/79, Response to 3/15/79 letter regarding the acceptability of the IVSW system.

1 In the conversion of the HBRSEP current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Editorial changes which involve the insertion of plant specific terms or parameters are used to preserve consistency with the CTS and licensing basis.

2 The description regarding the containment tendons is modified to reflect HBRSEP plant specific design.

3 The HBRSEP containment analysis does not provide a unique analysis for a LOCA resulting from a Rod Ejection. The containment response for a Rod Ejection Accident is bounded by the containment response for a LOCA.

4 The information in the Bases to ITS 3.6.1, Background regarding SR 3.6.1.1 and 10 CFR 50 Appendix J is deleted since it is inappropriate for the Bases Background section.

5 The Bases to ITS 3.6.3, Background is modified to provide information regarding the inter-relationship of Isolation Valve Seal Water (IVSW) System and containment isolation valves.

6 The HBRSEP design uses grouted tendons. HBRSEP has not committed to Regulatory Guide 1.35.

7 The HBRSEP design does not include provisions for indicating individual air lock door positions in the control room. A control room annunciator indicates when any airlock door is open.

8 Consistent with the current licensing basis, a specific leakage rate acceptance criteria applicable to the air lock is not adopted.

9 The HBRSEP design provides a single containment airlock.

10 Individual leakage rates for the containment air lock and purge valves are not specified in LCO 3.6.2, LCO 3.6.3 or the Containment Leakage Rate Testing Program.

11 The bases are revised to clarify that operation of the purge system is not limited to reducing the concentration of noble gases.

12 Consistent with the current licensing basis, the 42 inch purge valves are permitted to be open for safety reasons to support plant operations and maintenance activity within containment.

13 The HBRSEP does not include a Mini-purge System. To maintain consistency with the current licensing basis, an appropriate Background

discussion is provided for the Containment Pressure and Vacuum Relief Valves.

14 The HBRSEP design provides a significantly shorter time to complete the isolation of containment. The LOCA analysis does not assume the 60 seconds to complete the isolation of containment

15 The HBRSEP design includes consideration of single active failures.

16 The HBRSEP design for the purge valves provides air-cylinder operators on each valve.

17 The inboard 42 inch purge valves have mechanical stops to limit valve opening.

18 Individual isolation valve stroke times are not listed in the HBRSEP UFSAR.

19 The HBRSEP UFSAR does not include a list of passive isolation valves/devices.

20 The ISTS bases are revised to be consistent with the associated specification.

21 The HBRSEP design does not provide a containment high temperature alarm in the control room.

22 The Bases to Required Action A.1 is modified to include information regarding the acceptability of this Required Action to IVSW supplied penetration flowpaths.

23 Not used.

24 The analysis for inadvertent containment spray results in a containment overpressure equivalent to the design overpressure.

25 Added reiteration that the device used to isolate the flow path should be the one closest to the containment.

26 Not used.

27 Provided clarification that inoperability of one isolation valve in a penetration flow path with two valves and a closed system does not require entry into this Condition.

28 The brackets are removed and values from Standard Review Plan, 6.5.2 are substituted. These values are indicative of spray solution pH values which are conducive to iodine removal. The HBR design provides a spray

solution pH of 8.8 to 10.0 which is within the values conducive to iodine removal as stated in UFSAR Section 6.1.1.2.

29 Clarified to indicate that containment pressure and temperature response are analyzed. Additionally, containment response is analyzed using computer codes not computer transients.

30 The HBRSEP analysis indicates that the limiting DBA with respect to containment pressure and temperature is the steam line break.

31 Provided clarification that containment temperature response is also predicted by the computer codes used to analyze containment response.

32 The HBRSEP analysis indicates that containment air temperature exceeds the design temperature for more than just a few seconds.

33 The HBRSEP analysis indicates containment temperature briefly exceeds the containment design temperature.

34 HBRSEP was designed and licensed to the proposed Appendix A to 10 CFR 50, which was published in the Federal Register on July 11, 1967 (FR 32FR10213). Appendix A to 10 CFR 50 effective in 1971 and subsequently amended, is somewhat different from the proposed 1967 criteria. UFSAR section 3.1 includes an evaluation of HBRSEP with respect to the proposed 1967 criteria. The ISTS statement concerning the GDC criteria is modified in the ITS to reference the current licensing basis description in the UFSAR.

35 The HBRSEP design utilizes a manual realignment of the containment spray pump suction from the RWST to the containment sump.

36 Operation of the four containment cooling units is not always required during normal operation.

37 The HBRSEP design includes single speed containment cooling fans.

38 The HBRSEP analysis indicates the limiting DBA occurs with a single failure of one steam line check valve which bounds the single failure of an E-bus. A single failure of the E-bus can result in a loss of one train of containment cooling and containment spray as stated in the ITS bases.

39 The 60 second response time for the Containment Spray System is a conservative analytical assumption, not the actual system response time. Discreet increments which make up the 60 seconds response time are not explicitly delineated in the HBRSEP analysis. The 60 second response time is the analytical value used in the analysis, but it is not based on an analysis using empirical data such as DG start time, block loading

and spray line filling. The 60 seconds is considered to conservatively bound these events.

40 The unmodified sentence in ISTS is not grammatically correct. The eliminated information is an interjection in the sentence structure that does not appear to be significant with respect to the information provided. Its elimination improves the clarity of the sentence without significantly altering its meaning.

41 Redundant containment cooling is provided by the remaining containment spray train and the containment cooling trains.

42 The remaining containment cooling trains are identified for clarity. The reference to iodine removal capability is not germane to the containment cooling function and inoperability of a containment cooling train.

43 The HBRSEP design for the Containment Spray System does not use check valves inside containment.

44 The containment isolation sump valves are not included in this surveillance requirement since the HBRSEP design utilizes a manual realignment of the containment spray pump suction from the RWST to the containment sump.

45 The HBRSEP design for the eductors provides for a spray mixture ph of $\geq$ 8.8 and $\leq$ 10.0 during the injection phase.

46 HBRSEP analysis assumes adequate coverage of the containment volume by the Containment Spray System.

47 Consistent with the current licensing basis, the NaOH concentration has only a minimum value.

48 Consistent with the current licensing basis, ISTS specification 3.6.8, Hydrogen Recombiners is not adopted in ITS. Appropriate bases for ITS Specification 3.6.8, Isolation Valve Seal Water System is provided.

49 The HBRSEP design does not include a Containment Hydrogen Mixing System.

50 The HBRSEP design does not include an Iodine Cleanup System.

51 Consistent with the current licensing basis, ISTS specification 3.6.12, Vacuum Relief Valves is not adopted in ITS.

3.6 CONTAINMENT SYSTEMS

3.6.1 Containment

LCO 3.6.1 Containment shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment inoperable.	A.1 Restore containment to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.1	Perform required Type B and C leakage rate testing except for containment air lock testing, in accordance with 10 CFR 50, Appendix J, Option A, as modified by approved exemptions. The leakage rate acceptance criterion is $\leq 1.0\ L_a$. However, during the first unit startup following testing performed in accordance with 10 CFR 50, Appendix J, Option A, as modified by approved exemptions, the leakage rate acceptance criterion is $< 0.6\ L_a$ for the Type B and Type C tests.	-----NOTE----- SR 3.0.2 is not applicable ---------- In accordance with 10 CFR 50, Appendix J, Option A, as modified by approved exemptions
SR 3.6.1.2	Verify containment structural integrity in accordance with the Containment Tendon Surveillance Program.	In accordance with the Containment Tendon Surveillance Program
SR 3.6.1.3	Perform required visual examinations and leakage rate testing except for containment air lock testing, in accordance with the Containment Leakage Rate Testing Program.	In accordance with the Containment Leakage Rate Testing Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.1	----------NOTES---------- 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria of SR 3.6.1.1, in accordance with 10 CFR 50, Appendix J, Option A, as modified by approved exemptions. ---------- Perform required air lock leakage rate testing in accordance with 10 CFR 50, Appendix J, Option A, as modified by approved exemptions.	-----NOTE----- SR 3.0.2 is not applicable ---------- In accordance with 10 CFR 50, Appendix J, Option A, as modified by approved exemptions.
SR 3.6.2.2	Verify only one door in the air lock can be opened at a time.	24 months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. --------NOTE-------- Only applicable to penetration flow paths with only one containment isolation valve and a closed system. ---------- One or more Penetration flow paths with one containment isolation valve inoperable.	C.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. AND C.2 --------NOTE-------- Isolation devices in high radiation areas may be verified by use of administrative means. ---------- Verify the affected penetration flow path is isolated.	72 hours Once per 31 days for isolation devices outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met. OR 42 inch penetration (Supply or Exhaust) purge valves open and 6 inch penetration (pressure or vacuum relief) valves open simultaneously.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.1	----------NOTE---------- The 42 inch and 6 inch valves may not be open simultaneously. ---------- Verify each 42 inch purge supply and exhaust valve and each 6 inch pressure and vacuum relief valve is closed, except when the valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.6.3.2	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative controls. ---------- Verify each containment isolation manual valve and blind flange that is located outside containment and not locked, sealed or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	31 days
SR 3.6.3.3	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. ---------- Verify each containment isolation manual valve and blind flange that is located inside containment and not locked, sealed or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days
SR 3.6.3.4	Verify the isolation time of each automatic power operated containment isolation valve is within limits.	In accordance with the Inservice Testing Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.5	Verify each automatic containment isolation valve that is not locked, sealed or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	18 months
SR 3.6.3.6	Verify each 42 inch inboard containment purge valve is blocked to restrict the valve from opening > 70°.	18 months

3.6 CONTAINMENT SYSTEMS

3.6.8 Isolation Valve Seal Water (IVSW) System

LCO 3.6.8 The IVSW System shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. IVSW system inoperable.	A.1 Restore IVSW system to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.8.1	Verify IVSW tank pressure is ≥ 44 psig.	12 hours
SR 3.6.8.2	Verify the IVSW tank volume is ≥ 85 gallons.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.6.8.3	Verify the opening time of each air operated header injection valve is within limits.	In accordance with the Inservice Testing Program
SR 3.6.8.4	Verify each automatic valve in the IVSW System actuates to the correct position on an actual or simulated actuation signal.	18 months
SR 3.6.8.5	Verify the IVSW dedicated nitrogen bottles will pressurize the IVSW tank to ≥ 44 psig.	18 months
SR 3.6.8.6	Verify IVSW seal header flow rate is: a. ≤ 52.00 cc/minute for Header A, b. ≤ 16.50 cc/minute for Header B, c. ≤ 32.50 cc/minute for Header C, and d. ≤ 23.00 cc/minute for Header D.	18 months

B 3.6 CONTAINMENT SYSTEMS

B 3.6.1 Containment

BASES

BACKGROUND

The containment consists of the concrete reactor building, its steel liner, and the penetrations through this structure. The structure is designed to contain radioactive material that may be released from the reactor core following a Design Basis Accident (DBA). Additionally, this structure provides shielding from the fission products that may be present in the containment atmosphere following accident conditions.

The containment is a reinforced concrete structure with a cylindrical wall, a flat foundation mat, and a shallow dome roof. The inside surface of the containment is lined with a stainless steel liner to ensure a high degree of leak tightness during operating and accident conditions.

The cylinder wall is prestressed with a post tensioning system in the vertical direction.

The concrete reactor building is required for structural integrity of the containment under DBA conditions. The steel liner and its penetrations establish the leakage limiting boundary of the containment. Maintaining the containment OPERABLE limits the leakage of fission product radioactivity from the containment to the environment.

The isolation devices for the penetrations in the containment boundary are a part of the containment leak tight barrier. To maintain this leak tight barrier:

a. All penetrations required to be closed during accident conditions are either:

   1. capable of being closed by an OPERABLE automatic containment isolation system, or

   2. closed by manual valves, blind flanges, or de-activated automatic valves secured in their closed positions, except as provided in LCO 3.6.3, "Containment Isolation Valves";

(continued)

BASES

BACKGROUND (continued)

b. The air lock is OPERABLE, except as provided in LCO 3.6.2, "Containment Air Lock";

c. The equipment hatch is closed; and

d. The Isolation Valve Seal Water (IVSW) sytem is OPERABLE, except as provided in LCO 3.6.8.

APPLICABLE SAFETY ANALYSES

The safety design basis for the containment is that the containment must withstand the pressures and temperatures of the limiting DBA without exceeding the design leakage rate.

The DBAs that result in a challenge to containment OPERABILITY from high pressures and temperatures are a loss of coolant accident (LOCA) and a steam line break (Ref. 2). In addition, release of significant fission product radioactivity within containment can occur from a LOCA. In the LOCA analyses, it is assumed that the containment is OPERABLE such that, for the LOCA, the release to the environment is controlled by the rate of containment leakage. The containment was designed with an allowable leakage rate of 0.1% of containment air weight per day (Ref. 2). This leakage rate, used to evaluate offsite doses resulting from accidents, is defined in 10 CFR 50, Appendix J (Ref. 1), as L_a: the maximum allowable containment leakage rate at the calculated peak containment internal pressure (P_a) resulting from the LOCA. The allowable leakage rate represented by L_a forms the basis for the acceptance criteria imposed on all containment leakage rate testing. L_a is assumed to be 0.1% per day in the safety analysis at P_a = 40.0 psig (Ref. 2).

Satisfactory leakage rate test results are a requirement for the establishment of containment OPERABILITY.

The containment satisfies Criterion 3 of the NRC Policy Statement.

(continued)

BASES (continued)

LCO

Containment OPERABILITY is maintained by limiting leakage to ≤ 1.0 L_a, except prior to the first startup after performing a required 10 CFR 50, Appendix J, leakage test. At this time, the combined Type B and C leakage must be < 0.6 L_a and the overall Type A leakage must be < 0.75 L_a.

Compliance with this LCO will ensure a containment configuration, including the equipment hatch, that is structurally sound and that will limit leakage to those leakage rates assumed in the safety analysis.

Individual leakage rates specified for the containment air lock are not specifically part of the acceptance criteria of 10 CFR 50, Appendix J. Therefore, leakage rates exceeding these individual limits only result in the containment being inoperable when the leakage results in exceeding the acceptance criteria of Appendix J.

APPLICABILITY

In MODES 1, 2, 3, and 4, a LOCA could cause a release of radioactive material into containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, containment is not required to be OPERABLE in MODE 5 to prevent leakage of radioactive material from containment. The requirements for containment during MODE 6 are addressed in LCO 3.9.3, "Containment Penetrations."

ACTIONS

A.1

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

(continued)

BASES

ACTIONS (continued)

B.1 and B.2

If 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 6 hours and to MODE 5 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.

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1

Maintaining the containment OPERABLE requires compliance with the leakage rate test requirements of 10 CFR 50, Appendix J (Ref. 1), Option A, as modified by approved exemptions. Air lock leakage is not acceptable if its contribution to overall Type B, and C leakage causes overall Type B and C leakage to exceed limits. As left leakage after performing a required 10 CFR 50, Appendix J, leakage test is required to be $< 0.6\ L_a$ for combined Type B and C leakage. At all other times between required leakage rate tests, the acceptance criteria is based on an overall leakage limit of $\leq 1.0\ L_a$. At $\leq 1.0\ L_a$ the offsite dose consequences are bounded by the assumptions of the safety analysis. SR Frequencies are as required by Appendix J, Option A. Thus, SR 3.0.2 (which allows Frequency extensions) does not apply. These periodic testing requirements verify that the containment leakage rate does not exceed the leakage rate assumed in the safety analysis.

SR 3.6.1.2

This SR ensures that the structural integrity of the containment will be maintained in accordance with the provisions of the Containment Tendon Surveillance Program.

SR 3.6.1.3

Maintaining the containment OPERABLE requires compliance with the visual examinations and leakage rate test

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3 (continued)

requirements of the Containment Leakage Rate Testing Program applicable to Type A leakage rate tests. Air lock leakage is not acceptable if its contribution to overall Type A leakage causes overall Type A leakage to exceed limits. As left leakage after performing a required 10 CFR 50, Appendix J, leakage test is required to be $< 0.75\ L_a$ for overall Type A leakage. At $\leq 1.0\ L_a$ the offsite dose consequences are bounded by the assumptions of the safety analysis. SR Frequencies are as required by the Containment Leakage Rate Testing Program. This periodic testing requirement verifies that the containment leakage rate does not exceed the leakage rate assumed in the safety analysis.

REFERENCES

1. 10 CFR 50, Appendix J.
2. UFSAR, Section 6.2.

BASES

ACTIONS

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

inoperable air lock to OPERABLE status, assuming that at least one door is maintained closed in the air lock.

D.1 and D.2

If the inoperable containment air lock 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 6 hours and to MODE 5 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.

SURVEILLANCE REQUIREMENTS

SR 3.6.2.1

Maintaining the containment air lock OPERABLE requires compliance with the leakage rate test requirements of 10 CFR 50, Appendix J, Option A, as modified by approved exemptions. This SR reflects the leakage rate testing requirements with regard to air lock leakage (Type B leakage tests). The periodic testing requirements verify that the air lock leakage does not exceed the allowed fraction of the overall containment leakage rate. The Frequency is required by 10 CFR 50, Appendix J, Option A, as modified by approved exemptions.

The SR has been modified by two Notes. Note 1 states that an inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. This is considered reasonable since either air lock door is capable of providing a fission product barrier in the event of a DBA. Note 2 has been added to this SR requiring the results to be evaluated against the acceptance criteria of SR 3.6.1.1. This ensures that air lock leakage is properly accounted for in determining the overall containment leakage rate.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.2.2

The air lock interlock is designed to prevent simultaneous opening of both doors in a single air lock. Since both the inner and outer doors of an air lock are designed to withstand the maximum expected post accident containment pressure, closure of either door will support containment OPERABILITY. Thus, the door interlock feature supports containment OPERABILITY while the air lock is being used for personnel transit in and out of the containment. Periodic testing of this interlock demonstrates that the interlock will function as designed and that simultaneous opening of the inner and outer doors will not inadvertently occur. Due to the purely mechanical nature of this interlock, and given that the interlock mechanism is not normally challenged when the containment air lock door is used for entry and exit (procedures require strict adherence to single door opening), this test is only required to be performed every 24 months. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage, and the potential for loss of containment OPERABILITY if the surveillance were performed with the reactor at power. The 24 month Frequency for the interlock is justified based on generic operating experience. The 24 month Frequency is based on engineering judgment and is considered adequate given that the interlock is not challenged during the use of the interlock.

REFERENCES

1. The Containment Leakage Rate Testing Program.
2. UFSAR, Paragraph 6.9.2.

BASES

BACKGROUND (continued)

The OPERABILITY requirements for containment isolation valves help ensure that containment is isolated within the time limits assumed in the safety analyses. Therefore, the OPERABILITY requirements provide assurance that the containment function assumed in the safety analyses will be maintained. The Isolation Valve Seal Water System (IVSW) assures the effectiveness of certain containment isolation valves during any condition which requires containment isolation, by providing a water seal at the valves. The requirements for the IVSW system are specified in LCO 3.6.8, "IVSW System."

Containment Purge System (42 inch purge valves)

The Containment Purge System operates to supply outside air into the containment for ventilation and cooling or heating and may also be used to reduce personnel exposure to airborne radioactive contaminants within containment prior to and during personnel access. The supply and exhaust lines each contain two isolation valves. Inboard purge supply and exhaust valves are restricted from exceeding 70 degrees open. This restriction assures proper valve closure under dynamic conditions and consequently limits offsite dose consequences resulting from a DBA which occurs when the valves are open. The 42 inch purge valves are normally maintained closed in MODES 1, 2, 3, and 4 to ensure the containment boundary is maintained. They may be opened during plant operation when needed for safety related reasons (both equipment and personnel) to support plant operations and maintenance activities within the containment.

Containment Pressure and Vacuum Relief Valves

The containment pressure and vacuum relief valves are provided to control variations in containment pressure with respect to atmospheric pressure which may result from air temperature changes, barometric pressure changes or air in-leakage. These valves are normally maintained closed; however, they may be opened as needed in MODES 1, 2, 3 and 4 to equalize internal and external pressure, provided that they are not open simultaneously with the containment purge valves.

(continued)

BASES (continued)

LCO

Containment isolation valves form a part of the containment boundary. The containment isolation valves' safety function is related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during a DBA.

The automatic power operated isolation valves are required to have isolation times within limits and to actuate on an automatic isolation signal. The inboard 42 inch purge valves must have blocks installed to prevent full opening and actuate closed on an automatic signal. The valves covered by this LCO are listed along with their associated stroke times in the Inservice Testing Program.

The normally closed isolation valves are considered OPERABLE when manual valves are closed, automatic valves are de-activated and secured in their closed position, blind flanges are in place, and closed systems are intact.

This LCO provides assurance that the containment isolation valves and purge valves will perform their designed safety functions to minimize the loss of reactor coolant inventory and establish the containment boundary during accidents.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, the containment isolation valves are not required to be OPERABLE in MODE 5. The requirements for containment isolation valves during MODE 6 are addressed in LCO 3.9.4, "Containment Penetrations."

ACTIONS

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

(continued)

BASES

ACTIONS (continued)

A second Note has been added to provide clarification that, for 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 containment isolation valve. Complying with the Required Actions may allow for continued operation, and subsequent inoperable containment isolation valves are governed by subsequent Condition entry and application of associated Required Actions.

The ACTIONS are further modified by a third Note, which ensures appropriate remedial actions are taken, if necessary, if the affected systems are rendered inoperable by an inoperable containment isolation valve.

In the event the isolation valve leakage results in exceeding the overall containment leakage rate, Note 4 directs entry into the applicable Conditions and Required Actions of LCO 3.6.1. In the event required IVSW supply is isolated to a penetration flowpath, Note 5 directs entry into applicable Conditions and Required Actions of LCO 3.6.8.

A.1 and A.2

In the event one containment isolation valve in one or more penetration flow paths is inoperable, 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 containment isolation valve, a closed manual valve, a blind flange, and a check valve with flow through the valve secured. For a penetration flow path isolated in accordance with Required Action A.1, the device used to isolate the penetration should be the closest available one to containment. Required Action A.1 must be completed within 4 hours. The 4 hour Completion Time is reasonable, considering the time required to isolate the penetration and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4. For some penetration flowpaths supplied by IVSW, an inoperable isolation valve may prevent

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

the IVSW system from providing a water seal. Although not directly comparable to leak rate testing performed in accordance with 10 CFR 50, Appendix J, the hydrostatic testing of the IVSW headers specified in SR 3.6.8.6 provides a means of verifying that leakage through the IVSW supplied isolation valves is limited. The four hour Completion Time to isolate the penetration is acceptable based upon consideration of the time required to isolate the flowpath, the limited leakage potential for the isolation valve and the low probability of an event requiring containment isolation during the specified time period to isolate the flowpath.

For affected penetration flow paths that cannot be restored to OPERABLE status within the 4 hour Completion Time and that have been isolated in accordance with Required Action A.1, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that 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, through a system walkdown, that those isolation devices outside containment and capable of being mispositioned are in the correct position. The Completion Time of "once per 31 days for isolation devices outside containment" is appropriate considering the fact that the devices are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

Condition A has been modified by a Note indicating that this Condition is only applicable to those penetration flow paths with two containment isolation valves. For penetration flow paths with only one containment isolation valve and a closed system, Condition C provides the appropriate actions.

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

Required Action A.2 is modified by a Note that applies to isolation devices located in high radiation areas and allows these devices to be verified closed 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 devices once they have been verified to be in the proper position, is small.

B.1

With two containment isolation valves inoperable in one or more penetration flow paths with two isolation valves, the affected penetration flow path must be isolated within 1 hour. 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 ACTIONS of LCO 3.6.1. In the event the affected penetration is isolated in accordance with Required Action B.1, the affected penetration must be verified to be isolated on a periodic basis per Required Action A.2, which remains in effect. This periodic verification is necessary to assure leak tightness of containment and that penetrations requiring isolation following an accident are isolated. The Completion Time of "once per 31 days for isolation devices outside containment" for verifying each affected penetration flow path is isolated is appropriate considering the fact that the valves are operated under administrative control and the probability of their misalignment is low.

Condition B is modified by a Note indicating this Condition is only applicable to penetration flow paths with two containment isolation valves. Condition A of this LCO addresses the condition of one containment isolation valve inoperable in this type of penetration flow path.

(continued)

BASES

ACTIONS (continued)

C.1 and C.2

With one or more penetration flow paths with one containment isolation valve inoperable, the inoperable valve flow path 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. The device used to isolate the flow path should be the one closest available to containment. A check valve may not be used to isolate the affected penetration flow path. Required Action C.1 must be completed within the 72 hour Completion Time. The specified time period is reasonable considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of maintaining containment integrity during MODES 1, 2, 3, and 4. In the event the affected penetration flow path is isolated in accordance with Required Action C.1, the affected penetration flow path must be verified to be isolated on a periodic basis. This periodic verification is necessary to assure leak tightness of containment and that containment penetrations requiring isolation following an accident are isolated. The Completion Time of "once per 31 days for isolation devices outside containment" for verifying that each affected penetration flow path is isolated is appropriate because the valves are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

Condition C is modified by a Note indicating that this Condition is only applicable to those penetration flow paths with only one containment isolation valve and a closed system. The closed system must meet the requirements of Ref. 3. This Note is necessary since this Condition is written to specifically address those penetration flow paths

(continued)

BASES

ACTIONS

C.1 and C.2 (continued)

in a closed system. In some instances penetration flow paths connected to closed systems contain more than one containment isolation valve. The inoperability of one of these valves does not render the containment penetration flow path inoperable if the remaining containment isolation valve(s) is operable and the closed system is intact.

Required Action C.2 is modified by a Note that applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed 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 small.

D.1 and D.2

If the Required Actions and associated Completion Times are not met or the 42 inch penetration (supply or exhaust) purge valves are open and the 6 inch penetration (pressure and vacuum relief) valves are open simultaneously, 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 6 hours and to MODE 5 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.

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1

This SR ensures that the 42 inch purge supply and exhaust valves and 6 inch pressure and vacuum relief valves are closed as required or, if open, open for an allowable reason. If a valve is open in violation of this SR, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits. The SR is not required to be met when the valves are open for the reasons stated. The valves may be opened for pressure

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1 (continued)

control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. The valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day Frequency is consistent with other containment isolation valve requirements discussed in SR 3.6.3.3. Since it is not operationally necessary, it is desirable to preclude the 42 inch valves and 6 inch valves from being open at the same time. A Note to this SR restricts the 6 inch and 42 inch valves from being open simultaneously.

SR 3.6.3.2

This SR requires verification that each containment isolation manual valve and blind flange located outside containment and not locked, sealed or otherwise secured and 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 containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those containment isolation valves outside containment and capable of being mispositioned are in the correct position. Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day Frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions. The SR specifies that containment isolation valves that are open under administrative controls are not required to meet the SR during the time the valves are open. This SR does not apply to valves that are locked, sealed or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing or securing.

The Note applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3 and 4 for ALARA reasons. Therefore, the probability of misalignment of these

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.6.3.2 (continued)

containment isolation valves, once they have been verified to be in the proper position, is small.

SR 3.6.3.3

This SR requires verification that each containment isolation manual valve and blind flange located inside containment and not locked, sealed or otherwise secured and 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 containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate since these containment isolation valves are operated under administrative controls and the probability of their misalignment is low. The SR specifies that containment isolation valves that are open under administrative controls are not required to meet the SR during the time they are open. This SR does not apply to valves that are locked, sealed or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing or securing.

This Note allows valves and blind flanges located in high radiation areas to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3, and 4, for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in their proper position, is small.

SR 3.6.3.4

Verifying that the isolation time of each automatic power operated containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analyses. The isolation time and Frequency of this SR are in accordance with the Inservice Testing Program.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.5

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures that each automatic containment isolation valve will actuate to its isolation position on a containment isolation signal. This surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass this Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.6.3.6

Verifying that each 42 inch inboard containment purge valve is blocked to restrict opening to ≤ 70° is required to ensure that the valves can close under DBA conditions within the times assumed in the analyses of References 1 and 2. If a LOCA occurs, the purge valves must close to maintain containment leakage within the values assumed in the accident analysis. At other times when purge valves are required to be capable of closing (e.g., during movement of irradiated fuel assemblies), pressurization concerns are not present, thus the purge valves can be fully open. The 18 month Frequency is appropriate because the blocking devices are typically removed only during a refueling outage.

REFERENCES

1. UFSAR, Chapter 15.

2. UFSAR, Section 6.2.

3. Standard Review Plan 6.2.4.

BASES (continued)

ACTIONS

A.1

When containment pressure is not within the limits of the LCO, it must be restored to within these limits within 1 hour. The Required Action is necessary to return operation to within the bounds of the containment analysis. The 1 hour Completion Time is consistent with the ACTIONS of LCO 3.6.1, "Containment," which requires that containment be restored to OPERABLE status within 1 hour.

B.1 and B.2

If containment pressure cannot be restored to within limits 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 6 hours and to MODE 5 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.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1

Verifying that containment pressure is within limits ensures that unit operation remains within the limits assumed in the containment analysis. The 12 hour Frequency of this SR was developed based on operating experience related to trending of containment pressure variations during the applicable MODES. Furthermore, the 12 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal containment pressure condition.

REFERENCES

1. UFSAR, Section 6.2.

2. 10 CFR 50, Appendix K.

B 3.6 CONTAINMENT SYSTEMS

B 3.6.7 Spray Additive System

BASES

BACKGROUND

The Spray Additive System is a subsystem of the Containment Spray System that assists in reducing the iodine fission product inventory in the containment atmosphere resulting from a Design Basis Accident (DBA).

Radioiodine in its various forms is the fission product of primary concern in the evaluation of a DBA. It is absorbed by the spray from the containment atmosphere. To enhance the iodine absorption capacity of the spray, the spray solution is adjusted to an alkaline pH that promotes iodine hydrolysis, in which iodine is converted to nonvolatile forms. Because of its stability when exposed to radiation and elevated temperature, sodium hydroxide (NaOH) is the preferred spray additive. The NaOH added to the spray also ensures a pH value of between 8.5 and 11.0 of the solution recirculated from the containment sump. This pH band minimizes the evolution of iodine as well as the occurrence of chloride and caustic stress corrosion on mechanical systems and components.

Eductor Feed System

The Spray Additive System consists of one spray additive tank that is shared by the two trains of spray additive equipment. Each train of equipment provides a flow path from the spray additive tank to a containment spray pump and consists of an eductor for each containment spray pump, valves, instrumentation, and connecting piping. Each train of the Spray Additive System is not totally independent of the other train. Certain passive components (tank, piping, etc.) as well as redundant active components (valves) are shared by both trains. Depending upon which component is affected, the complete Spray Additive System may be inoperable or only one train may be inoperable. Each eductor draws the NaOH spray solution from the common tank using a portion of the borated water discharged by the containment spray pump as the motive flow. The eductor mixes the NaOH solution and the borated water and discharges the mixture into the spray pump suction line. The eductors

(continued)

BASES

BACKGROUND (continued)

are designed to ensure that the pH of the spray mixture is between 8.8 and 10.0 during the injection phase.

APPLICABLE SAFETY ANALYSES

The Spray Additive System is essential to the removal of airborne iodine within containment following a DBA.

Following the assumed release of radioactive materials into containment, the containment is assumed to leak at its design value volume following the accident. The analysis assumes that containment is adequately covered by the spray (Ref. 1).

The DBA response time assumed for the Spray Additive System is the same as for the Containment Spray System and is discussed in the Bases for LCO 3.6.6, "Containment Spray and Cooling Systems."

The DBA analyses assume that one train of the Containment Spray System/Spray Additive System is inoperable and that the entire spray additive tank volume is added to the remaining Containment Spray System flow path.

The Spray Additive System satisfies Criterion 3 of the NRC Policy Statement.

LCO

The Spray Additive System is necessary to reduce the release of radioactive material to the environment in the event of a DBA. To be considered OPERABLE, the volume and concentration of the spray additive solution must be sufficient to provide NaOH injection into the spray flow until the Containment Spray System suction path is switched from the refueling water storage tank (RWST) to the containment sump, and to raise the average spray solution pH to a level conducive to iodine removal, namely, to between 8.5 and 11.0. This pH range maximizes the effectiveness of the iodine removal mechanism without introducing conditions that may induce caustic stress corrosion cracking of mechanical system components. For a train of the Spray Additive System to be considered Operable, it must be capable of supplying its train's Spray Additive System flow to its associated Containment Spray System train. In addition, it is essential that valves in

(continued)

BASES

LCO (continued)

the Spray Additive System flow paths are properly positioned and that automatic valves are capable of activating to their correct positions.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment requiring the operation of the Spray Additive System. The Spray Additive System assists in reducing the iodine fission product inventory prior to release to the environment.

In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations in these MODES. Thus, the Spray Additive System is not required to be OPERABLE in MODE 5 or 6.

ACTIONS

A.1

If one Spray Additive System train is inoperable, it must be restored to OPERABLE within 72 hours. With one train of the Containment Spray Additive System inoperable, the remaining train is capable of supplying its flow to the associated Containment Spray System train. This circumstance is bounded by the inoperablility of a Containment Spray Train. In this condition the redundant train of the Spray Additive System in conjunction with the associated Containment Spray Train provides iodine removal capability consistent with the assumptions in the accident analysis.

B.1

If the Spray Additive System is inoperable for reasons other than Condition A, one train must be restored to OPERABLE status within 1 hour. The pH adjustment of the Containment Spray System flow for corrosion protection and iodine removal enhancement is reduced in this condition. The Containment Spray System would still be available and would remove some iodine from the containment atmosphere in the event of a DBA. The 1 hour Completion Time takes into account the time necessary to restore the System to Operable Status, the relative importance of pH adjustment of the Containment Spray System flow for corrosion protection and

(continued)

BASES

ACTIONS

B.1 (continued)

iodine removal as well as the low probability of the worst case DBA occurring during this period.

C.1 and C.2

If the Spray Additive System 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 6 hours and to MODE 5 within 84 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems. The extended interval to reach MODE 5 allows 48 hours for restoration of the Spray Additive System in MODE 3 and 36 hours to reach MODE 5. This is reasonable when considering the reduced pressure and temperature conditions in MODE 3 for the release of radioactive material from the Reactor Coolant System.

SURVEILLANCE REQUIREMENTS

SR 3.6.7.1

Verifying the correct alignment of Spray Additive System manual, power operated, and automatic valves in the spray additive flow path provides assurance that the system is able to provide additive to the Containment Spray System in the event of a DBA. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves were verified to be in the correct position prior to locking, sealing, or securing. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those valves outside containment and capable of potentially being mispositioned are in the correct position.

SR 3.6.7.2

To provide effective iodine removal, the containment spray must be an alkaline solution. Since the RWST contents are normally acidic, the volume of the spray additive tank must

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.7.2 (continued)

provide a sufficient volume of spray additive to adjust pH for all water injected. This SR is performed to verify the availability of sufficient NaOH solution in the Spray Additive System. The 184 day Frequency was developed based on the low probability of an undetected change in tank volume occurring during the SR interval (the tank is isolated during normal unit operations). Tank level is also indicated and alarmed in the control room, so that there is high confidence that a substantial change in level would be detected.

SR 3.6.7.3

This SR provides verification of the NaOH concentration in the spray additive tank and is sufficient to ensure that the spray solution being injected into containment is at the correct pH level. The 184 day Frequency is sufficient to ensure that the concentration level of NaOH in the spray additive tank remains above the limit. This is based on the low likelihood of an uncontrolled change in concentration (the tank is normally isolated) and the probability that any substantial variance in tank volume will be detected.

SR 3.6.7.4

This SR provides verification that each automatic valve in the Spray Additive System flow path actuates to its correct position. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

REFERENCES

1. UFSAR, Chapter 6.

BASES

ACTIONS (continued)

B.1 and B.2

If the Required Actions and associated Completion Times are not 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 6 hours and to MODE 5 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

SURVEILLANCE REQUIREMENTS

SR 3.6.8.1

This SR verifies the IVSW tank has the necessary pressure to provide motive force to the seal water. A pressure ≥ 44 psig ensures the containment penetration flowpaths that are sealed by the IVSW System are maintained at a pressure which is at least 1.1 times the calculated peak containment internal pressure (P_a) related to the design bases accident. Verification of the IVSW tank pressure on a Frequency of once per 12 hours is acceptable. This Frequency is sufficient to ensure availability of IVSW. Operating experience has shown this Frequency to be appropriate for early detection and correction of off normal trends.

SR 3.6.8.2

This SR verifies the IVSW tank has an initial volume of water necessary to provide seal water to the containment isolation valves served by the IVSW System. An initial volume ≥ 85 gallons ensures the IVSW System contains the proper inventory to maintain the required seal. Verification of IVSW tank level on a Frequency of once per 31 days is acceptable since tank level is continuously monitored by installed instrumentation and will alarm in the control room prior to level decreasing to 85 gallons.

SR 3.6.8.3

This SR verifies the stroke time of each automatic air operated header injection solenoid valve is within limits. The frequency is specified by the Inservice Testing

(continued)

IMPROVED STANDARD TECHNICAL SPECIFICATION (ISTS) CONVERSION

CHAPTER 3.6 - CONTAINMENT SYSTEMS

PART 10

ISTS GENERIC CHANGES

(TSTFs 17, 30, 45, 46)

Industry/TSTF Standard Technical Specification Change Traveler

Extension of testing frequency of containment airlock interlock mechanism from 184 days to 24 months

Classification: Not Classified

NUREGs Affected: ☑ 1430 ☑ 1431 ☑ 1432 ☑ 1433 ☑ 1434

Description:

Extension of testing frequency of containment airlock interlock mechanism from 184 days to 24 months

Justification:

SR 3.6.2.2 would be revised to require testing of the air lock door interlocks at an interval of 24 months. Typically, the interlock is installed after each refueling outage, verified operable with this surveillance and not disturbed until the next refueling outage. If the need for maintenance arises when the interlock is required, the performance of the interlock surveillance would be required following the maintenance. In addition, when an air lock is opened during times the interlock is required, the operator first verified that one door is completely shut and the door seals pressurized before attempting to open the other door. Therefore, the interlock is not challenged except during actual testing of the interlock. Consequently, it should be sufficient to ensure proper operation of the interlock by testing the interlock on a 24 month interval.

Testing of the airlock interlock mechanism is accomplished through having one door not completely engaged in the closed position, while attempting to open the second door. Failure of this surveillance effectively results in a loss of containment integrity. Procedures and training do not allow this interlock to be challenged for ingress and egress. One door is opened, all personnel and equipment as necessary are places into the airlock and then the door is completely closed prior to attempting to open the second door. This surveillance is contrary to processes and training of conservative operation when the interlock function is required. The door interlock mechanism cannot be readily bypassed, linkages must be removed which are under the control of station processes such as temporary modifications, containment closure procedures, and out of service practices. Failure rate of this physical device is very low based on the design of the interlock.

Historically, this interlock verification has had its frequency chosen to coincide with the frequency of the overall airlock leakage test. According to 10 CFR 50, Appendix J, Option A, this frequency is once per 6 months. However, Appendix J, Option B, allows for an extension of the overall airlock leakage test frequency to a maximum of 30 months.

For the above reasons, it is proposed to change the required frequency for this surveillance to 24 months (and, with the allowance of SR 3.0.2, this provides a total of 30 months, which corresponds to the overall air lock leakage test frequency under Option B). In this fashion, the interlock can be tested in a Mode where the interlock is not required.

With this change to the frequency, the need for the SR Note is eliminated. Testing would be done during a plant shutdown and would not be required until the following plant shutdown.

Affected Technical Specifications

SR 3.6.2.2	Containment Air Locks	NUREG(s)- 1430 1431 1432 Only
SR 3.6.2.2 Bases	Containment Air Locks	NUREG(s)- 1430 1431 1432 Only
SR 3.6.1.2.3 Bases	Primary Containment Air Lock	NUREG(s)- 1433 1434 Only
SR 3.6.1.2.2	Primary Containment Air Lock	NUREG(s)- 1433 Only
SR 3.6.1.2.2 Bases	Primary Containment Air Lock	NUREG(s)- 1433 Only
SR 3.6.1.2.3	Primary Containment Air Lock	NUREG(s)- 1434 Only

1/12/97

WOG Review Information

WOG-33

Originating Plant: Ginna Date Provided to OG: 13-Oct-95 Needed By:

Owners Group History:

Owners Group Resolution: Approved Date: 27-Oct-95

TSTF Review Information

TSTF Received Date: 30-Oct-95 Date Distributed to OGs for Review: 30-Oct-95

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF History:

Accepted by all OGs

TSTF Resolution: Approved Date: 30-Oct-95 **TSTF- 17**

NRC Review Information

NRC Received Date: 30-Oct-95 NRC Reviewer: C. Harbuck Reviewer Phone #:

Reviewer Comments:

11/30/95 - pkg approved with Bases changes
6/11/96 - C. Grimes comment: TSTF-17 approved. C. Grimes to write up why it is OK.
D. Hoffman, Excel comment: WNP-2 will stimulate a discussion on TSTF-17.
9/18/96 - NRC provided new Bases. MODIFY [proposed Bases description, as marked up]: "Due to the purely mechanical nature of this interlock, and given that the interlock mechanism is not normally challenged when the containment air lock door is used for entry and exit (procedures require strict adherence to single door opening), this test is only required to be performed every 24 months. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage, and the potential for loss of [primary {BWR only}] containment OPERABILITY if the Surveillance were performed with the reactor at power. {Delete the following:} Operating experience has shown these components usually pass the Surveillance when performed at the 24 month frequency. The 24 month Frequency is based on engineering judgment and is considered adequate given that the interlock is not challenged during use of the airlock.{Insert the following:} The 24 month Frequency for the interlock is justified based on generic operating experience."
New Bases acceptable to TSTF except last sentence which will be removed. TSTF to provide revision.
10/15/96 - New revision forwarded to the TSTF for review.

Final Resolution: NRC Requests Changes: TSTF Will Revise Final Resolution Date:

Revision History

OG Revision 1 Revision Date: 01-Jul-96 Proposed by: WOG

Revision Description:
Insert B to all OGs is revised. The current insert states that operating experience has shown that the airlocks usually pass the surveillance when performed at a 24 month frequency. However, this change extends the frequency to 24 months and testing is currently performed at a 6 month frequency. Therefore, there is no operating experience to support this statement. It is revised to state that operating experience shows that the airlocks usually pass the surveillance.
Note: Only the affected page is replaced with Rev. 1
10/3/96 - NRC requested changes are the same as this change.
12/19/96 - Approved by the TSTF with minor editorial comments.

Resolution: Approved Date: 19-Dec-96

Incorporation Into the NUREGs

File to BBS/LAN Date:

File to TSTF Date:

File Rev Incoporated:

File Rev Incorporated Date

TSTF-17

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.1	----------NOTES---------- 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria of SR 3.6.1.1 in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions. ----------	
	Perform required air lock leakage rate testing in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions.	-----NOTE----- SR 3.0.2 is not applicable ----------
	The acceptance criteria for air lock testing are: a. Overall air lock leakage rate is $\leq$ [0.05 L_a] when tested at $\geq P_a$. b. For each door, leakage rate is $\leq$ [.01 L_a] when tested at $\geq$ [10.0 psig].	In accordance with 10 CFR 50, Appendix J, as modified by approved exemptions
SR 3.6.2.2	~~----------NOTE---------- Only required to be performed upon entry or exit through the containment air lock. ----------~~	
	Verify only one door in the air lock can be opened at a time.	24 months ~~184 days~~

BASES

TSTF-17

SURVEILLANCE REQUIREMENTS

SR 3.6.2.2 (continued)

will function as designed and that simultaneous opening of the inner and outer doors will not inadvertently occur. Due to the purely mechanical nature of this interlock, and given that the interlock mechanism is ~~only~~ challenged when the containment air lock door is ~~opened~~, this test is only required to be performed ~~upon entering or exiting a containment air lock but is not required more frequently than every 184 days~~. The 184 day Frequency is based on engineering judgment and is considered adequate ~~in view of other indications of door and interlock mechanism status available to operations personnel.~~

not normally

INSERT A

INSERT B

INSERT C

REFERENCES

1. 10 CFR 50, Appendix J.
2. FSAR, Sections [14.1 and 14.2].
3. FSAR, Section [5.6].

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.2.1 ----------NOTES---------- 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria of SR 3.6.1.1 in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions. ----------	
Perform required air lock leakage rate testing in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions.	-----NOTE----- SR 3.0.2 is not applicable ----------
The acceptance criteria for air lock testing are: a. Overall air lock leakage rate is ≤ [0.05 L_a] when tested at ≥ P_a. b. For each door, leakage rate is ≤ [.01 L_a] when tested at ≥ [psig].	In accordance with 10 CFR 50, Appendix J, as modified by approved exemptions
SR 3.6.2.2 ~~---------- NOTE ---------- Only required to be performed upon entry or exit through the containment air lock ----------~~ Verify only one door in the air lock can be opened at a time.	24 months ~~184 days~~

INSERT A

Used for entry and exit (procedures require strict adherence to single door opening),

INSERT B

every 24 months. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage, and the potential for loss of [primary {BWR only}] containment OPERABILITY if the Surveillance were performed with the reactor at power. The 24 month Frequency for the interlock is justified based on generic operating experience.

INSERT C

given that the interlock is not challenged during the use of the airlock.

BASES (continued)

TSTF-17

SURVEILLANCE REQUIREMENTS

SR 3.6.2.1

Maintaining containment air locks OPERABLE requires compliance with the leakage rate test requirements of 10 CFR 50, Appendix J (Ref. 1), as modified by approved exemptions. This SR reflects the leakage rate testing requirements with regard to air lock leakage (Type B leakage tests). The acceptance criteria were established during initial air lock and containment OPERABILITY testing. The periodic testing requirements verify that the air lock leakage does not exceed the allowed fraction of the overall containment leakage rate. The Frequency is required by Appendix J (Ref. 1), as modified by approved exemptions. Thus, SR 3.0.2 (which allows Frequency extensions) does not apply.

The SR has been modified by two Notes. Note 1 states that an inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. This is considered reasonable since either air lock door is capable of providing a fission product barrier in the event of a DBA. Note 2 has been added to this SR requiring the results to be evaluated against the acceptance criteria of SR 3.6.1.1. This ensures that air lock leakage is properly accounted for in determining the overall containment leakage rate.

SR 3.6.2.2

The air lock interlock is designed to prevent simultaneous opening of both doors in a single air lock. Since both the inner and outer doors of an air lock are designed to withstand the maximum expected post accident containment pressure, closure of either door will support containment OPERABILITY. Thus, the door interlock feature supports containment OPERABILITY while the air lock is being used for personnel transit in and out of the containment. Periodic testing of this interlock demonstrates that the interlock will function as designed and that simultaneous opening of the inner and outer doors will not inadvertently occur. Due to the purely mechanical nature of this interlock, and given that the interlock mechanism is ~~only~~ challenged when the containment air lock door is ~~opened~~, this test is only required to be performed ~~upon entering or exiting a containment air lock but is not required more frequently~~

not normally

INSERT A

INSERT B

(continued)

BASES

TSTF-17

SURVEILLANCE REQUIREMENTS

SR 3.6.2.2 (continued)

~~than every 184 days.~~ The ~~184 day~~ Frequency is based on engineering judgment and is considered adequate ~~in view of other indications of door and interlock mechanism status available to operations personnel~~.

INSERT C

REFERENCES

1. 10 CFR 50, Appendix J.
2. FSAR, Section [6.2].

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.2.2	NOTE Only required to be performed upon entry or exit through the containment air lock. Verify only one door in the air lock can be opened at a time.	24 months ~~184 days~~

BASES

TSTF-17

SURVEILLANCE REQUIREMENTS

SR 3.6.2.1 (continued)

SR 3.6.1.1. This ensures that air lock leakage is properly accounted for in determining the overall containment leakage rate.

SR 3.6.2.2

The air lock interlock is designed to prevent simultaneous opening of both doors in a single air lock. Since both the inner and outer doors of an air lock are designed to withstand the maximum expected post accident containment pressure, closure of either door will support containment OPERABILITY. Thus, the door interlock feature supports containment OPERABILITY while the air lock is being used for personnel transit into and out of containment. Periodic testing of this interlock demonstrates that the interlock will function as designed and that simultaneous opening of the inner and outer doors will not inadvertently occur. Due to the purely mechanical nature of this interlock, and given that the interlock mechanism is ~~only~~ challenged when containment is ~~entered~~, this test is only required to be performed ~~upon entering containment but is not required more frequently than every 184 days~~. The 184 day Frequency is based on engineering judgment and is considered adequate ~~in view of other indications of door and interlock mechanism status available to operations personnel~~

INSERT A

not normally

INSERT B

INSERT C

REFERENCES

1. 10 CFR 50, Appendix J.
2. FSAR, Section [ ].
3. FSAR, Section [ ].

TSTF-17

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.2.1	----------NOTE---------- An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. ---------- Perform required primary containment air lock leakage rate testing in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions. The acceptance criteria for air lock testing are: a. Overall air lock leakage rate is $\leq$ [0.05 L_a] when tested at $\geq P_a$. b. For each door, leakage rate is $\leq$ [0.01 L_a] when the gap between the door seals is pressurized to [$\geq$ 10 psig for at least 15 minutes].	-----NOTE----- SR 3.0.2 is not applicable ---------- In accordance with 10 CFR 50, Appendix J, as modified by approved exemptions
SR 3.6.1.2.2	~~----------NOTE----------~~ ~~Only required to be performed upon entry into primary containment air lock when the primary containment is de-inerted.~~ ~~----------~~ Verify only one door in the primary containment air lock can be opened at a time.	24 months ~~184 days~~

TSTF-17

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.6.1.2.1

Maintaining primary containment air locks OPERABLE requires compliance with the leakage rate test requirements of 10 CFR 50, Appendix J (Ref. 2), as modified by approved exemptions. This SR reflects the leakage rate testing requirements with respect to air lock leakage (Type B leakage tests). The acceptance criteria were established [during initial air lock and primary containment OPERABILITY testing]. The periodic testing requirements verify that the air lock leakage does not exceed the allowed fraction of the overall primary containment leakage rate. The Frequency is required by 10 CFR 50, Appendix J (Ref. 2), as modified by approved exemptions. Thus, SR 3.0.2 (which allows Frequency extensions) does not apply.

The SR has been modified by a Note that states that an inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. This is considered reasonable since either air lock door is capable of providing a fission product barrier in the event of a DBA.

SR 3.6.1.2.2

The air lock interlock mechanism is designed to prevent simultaneous opening of both doors in the air lock. Since both the inner and outer doors of an air lock are designed to withstand the maximum expected post accident primary containment pressure, closure of either door will support primary containment OPERABILITY. Thus, the interlock feature supports primary containment OPERABILITY while the air lock is being used for personnel transit in and out of the containment. Periodic testing of this interlock demonstrates that the interlock will function as designed and that simultaneous inner and outer door opening will not inadvertently occur. Due to the purely mechanical nature of this interlock, and given that the interlock mechanism is ~~only~~ challenged when primary containment is ~~entered~~ this test is only required to be performed ~~upon entering primary containment, but is not required more frequently than 184 days when primary containment is de-inerted~~. The ~~184 day~~ Frequency is based on engineering judgment and is considered adequate ~~in view of other administrative controls~~.

not normally

INSERT A

INSERT B

INSERT C

(continued)

BASES

TSTF-17

SURVEILLANCE REQUIREMENTS

SR 3.6.1.2.2 (continued)

~~[such as indications of interlock mechanism status, available to operations personnel]~~

REFERENCES

1. FSAR, Section [3.8.2.8.2.2].
2. 10 CFR 50, Appendix J.
3. FSAR, Section [6.2].

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.2.3	~~----------NOTE----------~~ ~~Only required to be performed upon entry or exit through the primary containment air lock.~~ ~~----------~~ Verify only one door in the primary containment air lock can be opened at a time.	24 months ~~184 days~~
SR 3.6.1.2.4	Verify, from an initial pressure of [90] psig, the primary containment air lock seal pneumatic system pressure does not decay at a rate equivalent to > [2] psig for a period of [48] hours.	[18] months

BASES

TSTF-17

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.2.2

The seal air flask pressure is verified to be at ≥ [90] psig every 7 days to ensure that the seal system remains viable. It must be checked because it could bleed down during or following access through the air lock, which occurs regularly. The 7 day Frequency has been shown to be acceptable through operating experience and is con$idered adequate in view of the other indications available to operations personnel that the seal air flask pressure is low.

SR 3.6.1.2.3

The air lock interlock mechanism is designed to prevent simultaneous opening of both doors in the air lock. Since both the inner and outer doors of an air lock are designed to withstand the maximum expected post accident primary containment pressure (Ref. 3), closure of either door will support primary containment OPERABILITY. Thus, the interlock feature supports primary containment OPERABILITY while the air lock is being used for personnel transit in and out of the containment. Periodic testing of this interlock demonstrates that the interlock will function as designed and that simultaneous inner and outer door opening will not inadvertently occur. Due to the purely mechanical nature of this interlock, and given that the interlock mechanism is ~~only~~ challenged when the primary containment air lock door is ~~opened~~, this test is only required to be performed ~~upon entering or exiting a primary containment air lock, but is not required more frequently than once per 184 days~~. The (184 day) Frequency is based on engineering judgment and is considered adequate ~~in view of other administrative controls [such as indications of interlock mechanism status available to operations personnel]~~.

not normally

INSERT A

INSERT B

INSERT C

SR 3.6.1.2.4

A seal pneumatic system test to ensure that pressure does not decay at a rate equivalent to > [2] psig for a period of [48] hours from an initial pressure of [90] psig is an effective leakage rate test to verify system performance. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a

(continued)

Industry/TSTF Standard Technical Specification Change Traveler

Extend the Completion Time for inoperable isolation valve to a closed system to 72 hours

Classification: Not Classified

NUREGs Affected: ☑ 1430 ☑ 1431 ☑ 1432 ☑ 1433 ☑ 1434

Description:

Extend the Completion Time for a closed system flow path with an inoperable isolation valve to 72 hours. A Reference to Standard Review Plant 6.2.4 is added and subsequent references in the Bases are appropriately renumbered.

Justification:

General Design Criteria (GDC) 57 allows the use of a closed system in combination with a containment isolation valve to provide two containment barriers against the release of radioactive material following an accident. Currently, LCO 3.6.3 does not allow the use of a closed system to isolate a failed containment isolation valve even though the closed system is subjected to a Type A containment leakage test, is missile protected, and seismic category I piping. A closed system also typically has flow through it during normal operation such that any loss of integrity could be continually observed through leakage detection system within containment and system walkdowns for closed systems outside containment. As such, the use of a closed system is no different from isolating a failed containment isolation valve by use of a single valve as specified in Required Action A.1. Therefore, LCO 3.6.3, Required Action C.1 is revised to allow 7 hours to isolate a failed valve associated with a closed system. This 72 hour period provides the necessary time to perform repairs on a failed containment isolation valve when relying on an intact closed system. A Completion Time of 72 hours is considered appropriate given that certain valves may be located inside containment, the reliability of the closed system, and that 72 hours is typically provided for losing one train of redundancy throughout the NUREGs. If the closed system and associated containment isolation valve were both inoperable, the plant would be in LCO 3.0.3 since there is no specific Condition specified.

Affected Technical Specifications

3.6.3 Bases	Containment Isolation Valves	NUREG(s)- 1430 1431 1432 Only
	Change Description: All Bases pages subsequent to the description of Action C (Reference Numbers Only)	
Action 3.6.3.C	Containment Isolation Valves	NUREG(s)- 1430 1431 1432 Only
Action 3.6.3.C Bases	Containment Isolation Valves	NUREG(s)- 1430 1431 1432 Only
3.6.1.3 Bases	Primary Containment Isolation Valves (PCIVs)	NUREG(s)- 1433 1434 Only
	Change Description: All Bases pages subsequent to the description of Action C (Reference Numbers Only)	
Action 3.6.1.3.C	Primary Containment Isolation Valves (PCIVs)	NUREG(s)- 1433 1434 Only
Action 3.6.1.3.C Bases	Primary Containment Isolation Valves (PCIVs)	NUREG(s)- 1433 1434 Only
Ref. 3.6.1.3 Bases	Primary Containment Isolation Valves (PCIVs)	NUREG(s)- 1434 Only
	Change Description: Replaces missing Reference 6 in BWR/6 NUREG.	

WOG Review Information

WOG-34

Originating Plant: Date Provided to OG: Needed By:

Owners Group History:

Owners Group Resolution: Approved Date: 14-Nov-95

TSTF Review Information

TSTF Received Date: 02-Nov-95 Date Distributed to OGs for Review: 02-Nov-95

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF History:

Accepted by all OGs

TSTF Resolution: Approved Date: 14-Nov-95 TSTF- 30

NRC Review Information

NRC Received Date: 16-Nov-95 NRC Reviewer: C. Shulton Reviewer Phone #:

Reviewer Comments:

11/30/95 - pkg referred to Tech Branch and TSB requested decision by 12/22/95.
2/2/96 - Tech Branch approved change
2/7/96 C. Shulten modified NOTE for BWRs, 3.6.1.3, Action C, to include at the end of NOTE, "...and a closed system." Forwarded package to C. Grimes to review.
6/11/96 - C. Grimes comment: TSTF-30 is probably OK. Generally 72 hours closed systems OK. C. Grimes would like for SRXB to "buy into the wording." TSTF-30 may need a Generic Letter.
9/18/96 - NRC accepts with modification. Revise BWR 3.6.1.3, Action C NOTE markup to explicitly restrict the application of the change to a closed system.
9/18/96 - TSTF accepts the modifications and will provide a revision.
10/15/96 - New revision forwarded to the TSTF for review.

Final Resolution: NRC Requests Changes: TSTF Will Revise Final Resolution Date:

Revision History

TSTF Revision 1 Revision Date: 18-Sep-96 Proposed by: NRC

Revision Description:
NRC accepts with modification. Revise BWR 3.6.1.3, Action C NOTE markup to explicitly restrict the application of the change to a closed system.
9/18/96 - TSTF accepts the modifications and will provide a revision.
12/19/96 - Approved by the TSTF with minor editorial comments.

Resolution: Approved Date: 19-Dec-96

Incorporation Into the NUREGs

File to BBS/LAN Date:

File to TSTF Date:

File Rev Incoporated:

File Rev Incorporated Date

TSTF-30

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. --------NOTE-------- Only applicable to penetration flow paths with only one containment isolation valve and a closed system. ---------- One or more penetration flow paths with one containment isolation valve inoperable.	C.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. AND C.2 --------NOTE-------- Isolation devices in high radiation areas may be verified by use of administrative means. ---------- Verify the affected penetration flow path is isolated.	~~[4]~~ 72 hours Once per 31 days
[D. One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.	D.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]. AND	24 hours]

(continued)

BASES

TSTF-30

ACTIONS

B.1 (continued)

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

Condition B is modified by a Note indicating this Condition is only applicable to penetration flow paths with two containment isolation valves. Condition A of this LCO addresses the condition of one containment isolation valve inoperable in this type of penetration flow path.

C.1 and C.2

With one or more penetration flow paths with one containment isolation valve 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~~ 72 hour Completion Time. The specified time period is reasonable, considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4. In the event the affected penetration is isolated in accordance with Required Action C.1, the affected penetration flow path must be verified to be isolated on a periodic basis. This periodic verification is necessary to assure leak tightness of containment and that containment penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying that each affected penetration flow path is isolated is appropriate considering the fact that the valves are operated under administrative controls and the probability of their misalignment is low.

The closed system must meet the requirements of Reference 6.

Condition C is modified by a Note indicating that this Condition is only applicable to those penetration flow paths with only one containment isolation valve and a closed system. This Note is necessary since this Condition is

(continued)

BASES

TSTF-30

ACTIONS

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

not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

For the containment purge valve with resilient seal that is isolated in accordance with Required Action D.1, SR 3.6.3.6 must be performed at least once every [ ] days. This provides assurance that degradation of the resilient seal is detected and confirms that the leakage rate of the containment purge valve does not increase during the time the penetration is isolated. The normal Frequency for SR 3.6.3.6, 184 days, is based on an NRC initiative, Generic Issue B-20 (Ref. 10). Since more reliance is placed on a single valve while in this Condition, it is prudent to perform the SR more often. Therefore, a Frequency of once per [ ] days was chosen and has been shown acceptable based on operating experience.

8

E.1 and E.2

If the Required Actions and associated Completion Times are not 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 6 hours and to MODE 5 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.

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1

Each [48] inch containment purge valve is required to be verified sealed closed at 31 day intervals. This Surveillance is designed to ensure that a gross breach of containment is not caused by an inadvertent or spurious opening of a containment purge valve. Detailed analysis of the purge valves failed to conclusively demonstrate their ability to close during a LOCA in time to limit offsite doses. Therefore, these valves are required to be in the

(continued)

BASES

TSTF-30

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1 (continued)

sealed closed position during MODES 1, 2, 3, and 4. A containment purge valve that is sealed closed must have motive power to the valve operator removed. This can be accomplished by de-energizing the source of electric power or by removing the air supply to the valve operator. In this application, the term "sealed" has no connotation of leak tightness. The Frequency is a result of an NRC initiative, Generic Issue B-24 (Ref. 6), related to containment purge valve use during unit operations. In the event purge valve leakage requires entry into Condition D, the Surveillance permits opening one purge valve in a penetration flow path to perform repairs. (7)

SR 3.6.3.2

This SR ensures that the minipurge valves are closed as required or, if open, open for an allowable reason. If a purge valve is open in violation of this SR, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits. The SR is not required to be met when the minipurge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. The minipurge valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day Frequency is consistent with other containment isolation valve requirements discussed in SR 3.6.3.3.

SR 3.6.3.3

This SR requires verification that each containment isolation manual valve and blind flange located outside containment and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those containment isolation valves outside containment and capable

(continued)

BASES

TSTF-30

SURVEILLANCE REQUIREMENTS

SR 3.6.3.4 (continued)

probability of misalignment of these containment isolation valves, once they have been verified to be in their proper position, is small.

SR 3.6.3.5

Verifying that the isolation time of each power operated and automatic containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analyses. [The isolation time and Frequency of this SR are in accordance with the Inservice Testing Program or 92 days.]

SR 3.6.3.6

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, is required to ensure OPERABILITY. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of once per 184 days was established as part of the NRC resolution of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration" (Ref. 8).

Additionally, this SR must be performed within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (greater than that occurring to a valve that has not been opened). Thus, decreasing the interval (from 184 days) is a prudent measure after a valve has been opened.

SR 3.6.3.7

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of

(continued)

BASES

TSTF-30

REFERENCES (continued)

4. FSAR, Section [5.3].
5. FSAR, Section [5.3].
~~6.~~ 7 Generic Issue B-24.
~~7.~~ 8 Generic Issue B-20.

6. Standard Review Plan 6.2.4

TSTF-30

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. ---------NOTE--------- Only applicable to penetration flow paths with only one containment isolation valve and a closed system. ---------- One or more penetration flow paths with one containment isolation valve inoperable.	C.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. AND C.2 --------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. ---------- Verify the affected penetration flow path is isolated.	(4) (72) hours Once per 31 days
[D. Shield building bypass leakage not within limit.]	D.1 Restore leakage within limit.	4 hours
[E. One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.]	E.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]. AND	24 hours

(continued)

BASES

TSTF-30

ACTIONS (continued)

C.1 and C.2

With one or more penetration flow paths with one containment isolation valve inoperable, the inoperable valve flow path 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 flow path. Required Action C.1 must be completed within the [4] hour Completion Time. The specified time period is reasonable considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of maintaining containment integrity during MODES 1, 2, 3, and 4. In the event the affected penetration flow path is isolated in accordance with Required Action C.1, the affected penetration flow path must be verified to be isolated on a periodic basis. This periodic verification is necessary to assure leak tightness of containment and that containment penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying that each affected penetration flow path is isolated is appropriate because the valves are operated under administrative controls and the probability of their misalignment is low.

72

The closed system must meet the requirements of Rev. 2

Condition C is modified by a Note indicating that this Condition is only applicable to those penetration flow paths with only one containment isolation valve and a closed system. This Note is necessary since this Condition is written to specifically address those penetration flow paths in a closed system.

Required Action C.2 is modified by a Note that applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed 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 small.

(continued)

BASES

TSTF-30

ACTIONS

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

automatically isolated, will be in the isolation position should an event occur. This Required Action does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those isolation devices outside containment capable of being mispositioned are in the correct position. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

For the containment purge valve with resilient seal that is isolated in accordance with Required Action E.1, SR 3.6.3.7 must be performed at least once every [92] days. This assures that degradation of the resilient seal is detected and confirms that the leakage rate of the containment purge valve does not increase during the time the penetration is isolated. The normal Frequency for SR 3.6.3.7, 184 days, is based on an NRC initiative, Generic Issue B-20 (Ref. 3, 4). Since more reliance is placed on a single valve while in this Condition, it is prudent to perform the SR more often. Therefore, a Frequency of once per [92] days was chosen and has been shown to be acceptable based on operating experience.

F.1 and F.2

If the Required Actions and associated Completion Times are not 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 6 hours and to MODE 5 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 (continued)

TSTF-30

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1

Each [42] inch containment purge valve is required to be verified sealed closed at 31 day intervals. This Surveillance is designed to ensure that a gross breach of containment is not caused by an inadvertent or spurious opening of a containment purge valve. Detailed analysis of the purge valves failed to conclusively demonstrate their ability to close during a LOCA in time to limit offsite doses. Therefore, these valves are required to be in the sealed closed position during MODES 1, 2, 3, and 4. A containment purge valve that is sealed closed must have motive power to the valve operator removed. This can be accomplished by de-energizing the source of electric power or by removing the air supply to the valve operator. In this application, the term "sealed" has no connotation of leak tightness. The Frequency is a result of an NRC initiative, Generic Issue B-24 (Ref. 4), related to containment purge valve use during plant operations. In the event purge valve leakage requires entry into Condition E, the Surveillance permits opening one purge valve in a penetration flow path to perform repairs.

(5)

SR 3.6.3.2

This SR ensures that the minipurge valves are closed as required or, if open, open for an allowable reason. If a purge valve is open in violation of this SR, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits. The SR is not required to be met when the minipurge valves are open for the reasons stated. The valves may be opened for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. The minipurge valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day Frequency is consistent with other containment isolation valve requirements discussed in SR 3.6.3.3.

(continued)

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SURVEILLANCE REQUIREMENTS

SR 3.6.3.11 (continued)

maximum pathway leakage (leakage through the worse of the two isolation valves) unless the penetration is isolated by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. In this case, the leakage rate of the isolated bypass leakage path is assumed to be the actual pathway leakage through the isolation device. If both isolation valves in the penetration are closed, the actual leakage rate is the lesser leakage rate of the two valves. This method of quantifying maximum pathway leakage is only to be used for this SR (i.e., Appendix J maximum pathway leakage limits are to be quantified in accordance with Appendix J). The Frequency is required by 10 CFR 50, Appendix J, as modified by approved exemptions (and therefore, the Frequency extensions of SR 3.0.2 may not be applied), since the testing is an Appendix J, Type C test. This SR simply imposes additional acceptance criteria.

[By pass leakage is considered part of L_a. [Reviewer's Note: Unless specifically exempted].]

REFERENCES

1. FSAR, Section [15].
2. FSAR, Section [6.2].
4. 3. Generic Issue B-20, "Containment Leakage Due to Seal Deterioration."
5. 4. Generic Issue B-24.
3. Standard Review Plan 6.2.4.

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. ---------NOTE--------- Only applicable to penetration flow paths with only one containment isolation valve and a closed system. ---------- One or more penetration flow paths with one containment isolation valve inoperable.	C.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. AND C.2 --------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. ---------- Verify the affected penetration flow path is isolated.	(4) (72) hours Once per 31 days
D. Secondary containment bypass leakage not within limit.	D.1 Restore leakage within limit.	4 hours
E. One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.	E.1 Isolate the affected penetration flow path by use of at least one [closed and de-activated automatic valve with resilient seals, closed manual valve with resilient seals, or blind flange]. AND	24 hours

(continued)

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ACTIONS

C.1 and C.2 (continued)

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 specified time period is reasonable, considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4. In the event the affected penetration is isolated in accordance with Required Action C.1, the affected penetration flow path must be verified to be isolated on a periodic basis. This is necessary to assure leak tightness of containment and that containment penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying that each affected penetration flow path is isolated is appropriate considering the valves are operated under administrative controls and the probability of their misalignment is low.

[72]

The closed system must meet the requirements of Reference 3.

Condition C is modified by a Note indicating that this Condition is only applicable to those penetration flow paths with only one containment isolation valve and a closed system. This Note is necessary since this Condition is written to specifically address those penetration flow paths in a closed system.

Required Action C.2 is modified by a Note that applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed 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 small.

[D.1

With the secondary containment bypass leakage rate not within limit, the assumptions of the safety analysis are not]

(continued)

BASES

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ACTIONS

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

isolation devices outside containment capable of being mispositioned are in the correct position. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

For the containment purge valve with resilient seal that is isolated in accordance with Required Action E.1, SR 3.6.3.6 must be performed at least once every [92] days. This assures that degradation of the resilient seal is detected and confirms that the leakage rate of the containment purge valve does not increase during the time the penetration is isolated. The normal Frequency for SR 3.6.3.6, 184 days, is based on an NRC initiative, Generic Issue B-20 (Ref. 3, 4). Since more reliance is placed on a single valve while in this Condition, it is prudent to perform the SR more often. Therefore, a Frequency of once per [92] days was chosen and has been shown to be acceptable based on operating experience.

F.1 and F.2

If the Required Actions and associated Completion Times are not 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 6 hours and to MODE 5 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.

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1

Each [42] inch containment purge valve is required to be verified sealed closed at 31 day intervals. This Surveillance is designed to ensure that a gross breach of containment is not caused by an inadvertent or spurious

(continued)

BASES

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SURVEILLANCE REQUIREMENTS

SR 3.6.3.1 (continued)

opening of a containment purge valve. Detailed analysis of the purge valves failed to conclusively demonstrate their ability to close during a LOCA in time to limit offsite doses. Therefore, these valves are required to be in the sealed closed position during MODES 1, 2, 3, and 4. A containment purge valve that is sealed closed must have motive power to the valve operator removed. This can be accomplished by de-energizing the source of electric power or by removing the air supply to the valve operator. In this application, the term "sealed" has no connotation of leak tightness. The Frequency is a result of an NRC initiative, Generic Issue B-24 (Ref. 4), related to containment purge valve use during unit operations. This SR is not required to be met while in Condition E of this LCO. This is reasonable since the penetration flow path would be isolated.

SR 3.6.3.2

This SR ensures that the minipurge valves are closed as required or, if open, open for an allowable reason. If a purge valve is open in violation of this SR, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits. The SR is not required to be met when the purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. The minipurge valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day Frequency is consistent with other containment isolation valve requirements discussed in SR 3.6.3.3.

SR 3.6.3.3

This SR requires verification that each containment isolation manual valve and blind flange located outside containment and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the

(continued)

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SURVEILLANCE REQUIREMENTS

SR 3.6.3.4 (continued)

administrative means 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 containment isolation valves, once they have been verified to be in their proper position, is small.

SR 3.6.3.5

Verifying that the isolation time of each power operated and automatic containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis. [The isolation time and Frequency of this SR are in accordance with the Inservice Testing Program or 92 days.]

SR 3.6.3.6

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J (Ref. 5), is required to ensure OPERABILITY. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of 184 days was established as part of the NRC resolution of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration" (Ref. 4).

Additionally, this SR must be performed within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (beyond that occurring to a valve that has not been opened). Thus, decreasing the interval (from 184 days) is a prudent measure after a valve has been opened.

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.7

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures each automatic containment isolation valve will actuate to its isolation position on a containment isolation actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The [18] month Frequency was developed considering it is prudent that this SR be performed only during a unit outage, since isolation of penetrations would eliminate cooling water flow and disrupt normal operation of many critical components. Operating experience has shown that these components usually pass this SR when performed on the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.6.3.8

Reviewer's Note: This SR is only required for those units with resilient seal purge valves allowed to be open during [MODE 1, 2, 3, or 4] and having blocking devices on the valves that are not permanently installed.

Verifying that each [42] inch containment purge valve is blocked to restrict opening to ≤ [50]% is required to ensure that the valves can close under DBA conditions within the times assumed in the analyses of References 2 and 3. If a (4) LOCA occurs, the purge valves must close to maintain containment leakage within the valves assumed in the accident analysis. At other times when purge valves are required to be capable of closing (e.g., during movement of irradiated fuel assemblies), pressurization concerns are not present, thus the purge valves can be fully open. The [18] month Frequency is appropriate because the blocking devices are typically removed only during a refueling outage.

SR 3.6.3.9

This SR ensures that the combined leakage rate of all secondary containment bypass leakage paths is less than or

(continued)

BASES

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SURVEILLANCE REQUIREMENTS

SR 3.6.3.9 (continued)

equal to the specified leakage rate. This provides assurance that the assumptions in the safety analysis are met. The leakage rate of each bypass leakage path is assumed to be the maximum pathway leakage (leakage through the worse of the two isolation valves) unless the penetration is isolated by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. In this case, the leakage rate of the isolated bypass leakage path is assumed to be the actual pathway leakage through the isolation device. If both isolation valves in the penetration are closed, the actual leakage rate is the lesser leakage rate of the two valves. This method of quantifying maximum pathway leakage is only to be used for this SR (i.e., Appendix J maximum pathway leakage limits are to be quantified in accordance with Appendix J). The Frequency is required by 10 CFR 50, Appendix J, as modified by approved exemptions (and therefore, the Frequency extensions of SR 3.0.2 may not be applied), since the testing is an Appendix J, Type C test. This SR simply imposes additional acceptance criteria.

[Bypass leakage is considered part of L_a. [Reviewer's Note: Unless specifically exempted].]

REFERENCES

1. FSAR, Section [ ].
2. FSAR, Section [ ].
4 (3) Generic Issue B-20.
5 (4) Generic Issue B-24.
6 (5) 10 CFR 50, Appendix J.

3. Standard Review Plan 6.2.4.

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. ---------NOTE--------- Only applicable to penetration flow paths with two PCIVs. ---------- One or more penetration flow paths with two PCIVs inoperable [except for purge valve leakage not within limit].	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
C. ---------NOTE--------- Only applicable to penetration flow paths with only one PCIV and a closed system ---------- One or more penetration flow paths with one PCIV inoperable.	C.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.	[4] 72 hours except for excess flow check valves (EFCVs) AND 12 hours [for EFCVs]
	AND	
	C.2 --------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. ---------- Verify the affected penetration flow path is isolated.	Once per 31 days
[D. Secondary containment bypass leakage rate not within limit.	D.1 Restore leakage rate to within limit.	4 hours]

(continued)

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BASES

ACTIONS

A.1 and A.2 (continued)

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 devices, once they have been verified to be in the proper position, is low.

B.1

With one or more penetration flow paths with two PCIVs inoperable, either the inoperable PCIVs must be restored to OPERABLE status or the affected penetration flow path must be isolated within 1 hour. 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 ACTIONS of LCO 3.6.1.1.

Condition B is modified by a Note indicating this Condition is only applicable to penetration flow paths with two PCIVs. For penetration flow paths with one PCIV, Condition C provides the appropriate Required Actions.

C.1 and C.2

With one or more penetration flow paths with one PCIV 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 closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of supporting primary containment OPERABILITY during

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BASES

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ACTIONS

C.1 and C.2 (continued)

The closed system must meet the requirements of Ref. 4.

MODES 1, 2, and 3. The Completion Time of 12 hours is reasonable considering the instrument and the small pipe diameter of penetration (hence, reliability) to act as a penetration isolation boundary and the small pipe diameter of the affected penetrations. 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 primary 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 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 PCIV. For penetration flow paths with two PCIVs, 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

With the secondary containment bypass leakage rate or MSIV leakage rate not within limit, the assumptions of the safety analysis may not be met. Therefore, the leakage must be restored to within limit within 4 hours. Restoration can be accomplished by isolating the penetration that caused the limit to be exceeded by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. When a penetration is isolated, the leakage rate for the isolated penetration is assumed to be the actual pathway leakage through the isolation device. If two isolation devices are used to isolate the penetration, the leakage rate is assumed

(continued)

BASES

TSTF-30

ACTIONS

G.1, H.1, I.1, and I.2 (continued)

immediately initiate action to restore the valve(s) to OPERABLE status. This allows RHR to remain in service while actions are being taken to restore the valve.

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3.1

Each [18] inch primary containment purge valve is required to be verified sealed closed at 31 day intervals. This SR is designed to ensure that a gross breach of primary containment is not caused by an inadvertent or spurious opening of a primary containment purge valve. Detailed analysis of the purge valves failed to conclusively demonstrate their ability to close during a LOCA in time to limit offsite doses. Primary containment purge valves that are sealed closed must have motive power to the valve operator removed. This can be accomplished by de-energizing the source of electric power or removing the air supply to the valve operator. In this application, the term "sealed" has no connotation of leak tightness. The 31 day Frequency is a result of an NRC initiative, Generic Issue B-24 (Ref. 4), related to primary containment purge valve use during unit operations.

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This SR allows a valve that is open under administrative controls to not meet the SR during the time the valve is open. Opening a purge valve under administrative controls is restricted to one valve in a penetration flow path at a given time (refer to discussion for Note 1 of the ACTIONS) in order to effect repairs to that valve. This allows one purge valve to be opened without resulting in a failure of the Surveillance and resultant entry into the ACTIONS for this purge valve, provided the stated restrictions are met. Condition E must be entered during this allowance, and the valve opened only as necessary for effecting repairs. Each purge valve in the penetration flow path may be alternately opened, provided one remains sealed closed, if necessary, to complete repairs on the penetration.

The SR is modified by a Note stating that primary containment purge valves are only required to be sealed closed in MODES 1, 2, and 3. If a LOCA inside primary

(continued)

BASES

TSTF-30

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3.4 (continued)

Two Notes have been added to this SR. The first Note allows valves and blind flanges located in high radiation areas to be verified by use of administrative controls. Allowing verification by administrative controls is considered acceptable since the primary containment is inerted and access to these areas is typically restricted during MODES 1, 2, and 3 for ALARA reasons. Therefore, the probability of misalignment of these PCIVs, once they have been verified to be in their proper position, is low. A second Note has been included to clarify that PCIVs that are open under administrative controls are not required to meet the SR during the time that the PCIVs are open.

SR 3.6.1.3.5

The traversing incore probe (TIP) shear isolation valves are actuated by explosive charges. Surveillance of explosive charge continuity provides assurance that TIP valves will actuate when required. Other administrative controls, such as those that limit the shelf life of the explosive charges, must be followed. The 31 day Frequency is based on operating experience that has demonstrated the reliability of the explosive charge continuity.

SR 3.6.1.3.6

Verifying the isolation time of each power operated and each automatic PCIV is within limits is required to demonstrate OPERABILITY. MSIVs may be excluded from this SR since MSIV full closure isolation time is demonstrated by SR 3.6.1.3.7. The isolation time test ensures that the valve will isolate in a time period less than or equal to that assumed in the safety analyses. The isolation time and Frequency of this SR are [in accordance with the requirements of the Inservice Testing Program or 92 days].

SR 3.6.1.3.7

For primary containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J (Ref. 3), is required to ensure

(continued)

BASES

TSTF-30

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.9

Automatic PCIVs close on a primary containment isolation signal to prevent leakage of radioactive material from primary containment following a DBA. This SR ensures that each automatic PCIV will actuate to its isolation position on a primary containment isolation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.3.7 overlaps this SR to provide complete testing of the safety function. The [18] month Frequency was developed considering it is prudent that this Surveillance be performed only during a unit outage since isolation of penetrations would eliminate cooling water flow and disrupt the normal operation of many critical components. Operating experience has shown that these components usually pass this Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.6.1.3.10

This SR requires a demonstration that each reactor instrumentation line excess flow check valve (EFCV) is OPERABLE by verifying that the valve [reduces flow to $\leq$ 1 gph on a simulated instrument line break]. This SR provides assurance that the instrumentation line EFCVs will perform so that predicted radiological consequences will not be exceeded during the postulated instrument line break event evaluated in Reference 6. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass this Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

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SR 3.6.1.3.11

The TIP shear isolation valves are actuated by explosive charges. An in place functional test is not possible with this design. The explosive squib is removed and tested to provide assurance that the valves will actuate when

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BASES

TSTF-30

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3.11 (continued)

required. The replacement charge for the explosive squib shall be from the same manufactured batch as the one fired or from another batch that has been certified by having one of the batch successfully fired. The Frequency of 18 months on a STAGGERED TEST BASIS is considered adequate given the administrative controls on replacement charges and the frequent checks of circuit continuity (SR 3.6.1.3.5).

SR 3.6.1.3.12

This SR ensures that the leakage rate of secondary containment bypass leakage paths is less than the specified leakage rate. This provides assurance that the assumptions in the radiological evaluations of Reference 7 are met. The leakage rate of each bypass leakage path is assumed to be the maximum pathway leakage (leakage through the worse of the two isolation valves) unless the penetration is isolated by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. In this case, the leakage rate of the isolated bypass leakage path is assumed to be the actual pathway leakage through the isolation device. If both isolation valves in the penetration are closed, the actual leakage rate is the lesser leakage rate of the two valves. This method of quantifying maximum pathway leakage is only to be used for this SR (i.e., Appendix J maximum pathway leakage limits are to be quantified in accordance with Appendix J). The Frequency is required by 10 CFR 50, Appendix J, as modified by approved exemptions (and therefore, the Frequency extensions of SR 3.0.2 may not be applied), since the testing is an Appendix J, Type C test. This SR simply imposes additional acceptance criteria. Note 1 is added to this SR which states that these valves are only required to meet this leakage limit in MODES 1, 2, and 3. In the other conditions, the Reactor Coolant System is not pressurized and specific primary containment leakage limits are not required.

[Bypass leakage is considered part of L_a. [Reviewer's Note: Unless specifically exempted].]

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BASES

TSTF-30

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.13

The analyses in References 2 and 8 are based on leakage that is less than the specified leakage rate. Leakage through each MSIV must be ≤ [11.5] scfh when tested at ≥ P_t ([28.8] psig). The MSIV leakage rate must be verified to be in accordance with the leakage test requirements of 10 CFR 50, Appendix J (Ref. 3), as modified by approved exemptions. Note 1 is added to this SR which states that these valves are only required to meet this leakage limit in MODES 1, 2, and 3. In the other conditions, the Reactor Coolant System is not pressurized and specific primary containment leakage limits are not required. This ensures that MSIV leakage is properly accounted for in determining the overall primary containment leakage rate. The Frequency is required by 10 CFR 50, Appendix J, as modified by approved exemptions; thus, SR 3.0.2 (which allows Frequency extensions) does not apply.

SR 3.6.1.3.14

Surveillance of hydrostatically tested lines provides assurance that the calculation assumptions of Reference 2 are met. The combined leakage rates must be demonstrated in accordance with the leakage rate test Frequency of 10 CFR 50, Appendix J (Ref. 3), as modified by approved exemptions; thus SR 3.0.2 (which allows Frequency extensions) does not apply.

[This SR has been modified by a Note that states that these valves are only required to meet the combined leakage rate in MODES 1, 2, and since this is when the Reactor Coolant System is pressurized and primary containment is required. In some instances, the valves are required to be capable of automatically closing during MODES other than MODES 1, 2, and 3. However, specific leakage limits are not applicable in these other MODES or conditions.]

SR 3.6.1.3.15

Reviewer's Note: This SR is only required for those plants with purge valves with resilient seals allowed to be open during [MODE 1, 2, 3, or 4] and having blocking devices that are not permanently installed on the valves.

(continued)

BASES

TSTF-30

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3.15 (continued)

Verifying each [ ] inch primary containment purge valve is blocked to restrict opening to ≤ [50]% is required to ensure that the valves can close under DBA conditions within the (7) times assumed in the analysis of References 2 and (6) [The SR is modified by a Note stating that this SR is only required to be met in MODES 1, 2, and 3.] If a LOCA occurs, the purge valves must close to maintain containment leakage within the values assumed in the accident analysis. At other times when purge valves are required to be capable of closing (e.g., during movement of irradiated fuel assemblies), pressurization concerns are not present, thus the purge valves can be fully open. The [18] month Frequency is appropriate because the blocking devices are typically removed only during a refueling outage.

REFERENCES

1. FSAR, Chapter [15].
2. FSAR, Table [6.2-5].
3. 10 CFR 50, Appendix J.
5 (4). FSAR, Section [6.2].
6 (5). FSAR, Section [15.1.39].

4. Standard Review Plan 6.2.4

ACTIONS (continued) TSTF-30

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. ---------NOTE--------- Only applicable to penetration flow paths with two PCIVs. ---------- One or more penetration flow paths with two PCIVs inoperable [except for purge valve leakage not within limit].	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
C. ---------NOTE--------- Only applicable to penetration flow paths with only one PCIV. ---------- One or more penetration flow paths with one PCIV inoperable.	C.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. AND C.2 --------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. ---------- Verify the affected penetration flow path is isolated.	[4] 72 hours Once per 31 days
[D. Secondary containment bypass leakage rate not within limit.]	D.1 Restore leakage rate to within limit.	4 hours

(continued)

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BASES

ACTIONS

B.1 (continued)

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 ACTIONS of LCO 3.6.1.1.

Condition B is modified by a Note indicating this Condition is only applicable to penetration flow paths with two PCIVs. For penetration flow paths with one PCIV, Condition C provides the appropriate Required Actions.

C.1 and C.2

When one or more penetration flow paths with one PCIV 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 [4] hours. The [4] hour Completion Time is reasonable considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of supporting primary containment OPERABILITY during MODES 1, 2, and 3. In the event the affected penetration is isolated in accordance with Required Action C.1, the affected penetration flow path 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 are isolated. The Completion Time of once per 31 days for verifying that each affected penetration is isolated is appropriate because the valves are operated under administrative controls and the probability of their misalignment is low.

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The closed system must meet the requirements of Ref. 5

Condition C is modified by a Note indicating this Condition is applicable only to those penetration flow paths with only one PCIV. For penetration flow paths with two PCIVs, Conditions A and B provide the appropriate Required Actions. This Note is necessary since this Condition is written

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BASES

TSTF-30

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3.1 (continued)

limit offsite doses. Primary containment purge valves that are sealed closed must have motive power to the valve operator removed. This can be accomplished by de-energizing the source of electric power or removing the air supply to the valve operator. In this application, the term "sealed" has no connotation of leak tightness. The 31 day Frequency is a result of an NRC initiative, Generic Issue B-24 (Ref. 5), related to primary containment purge valve use during unit operations.

(2)

This SR allows a valve that is open under administrative controls to not meet the SR during the time the valve is open. Opening a purge valve under administrative controls is restricted to one valve in a penetration flow path at a given time (refer to discussion for Note 1 of the ACTIONS) in order to effect repairs to that valve. This allows one purge valve to be opened without resulting in a failure of the Surveillance and resultant entry into the ACTIONS for this purge valve, provided the stated restrictions are met. Condition E must be entered during this allowance, and the valve opened only as necessary for effecting repairs. Each purge valve in the penetration flow path may be alternately opened, provided one remains sealed closed, if necessary, to complete repairs on the penetration.

The SR is modified by a Note stating that primary containment purge valves are only required to be sealed closed in MODES 1, 2, and 3. If a LOCA inside primary containment occurs in these MODES, the purge valves may not be capable of closing before the pressure pulse affects systems downstream of the purge valves or the release of radioactive material will exceed limits prior to the closing of the purge valves. At other times when the purge valves are required to be capable of closing (e.g., during movement of irradiated fuel assemblies), pressurization concerns are not present and the purge valves are allowed to be open.

SR 3.6.1.3.2

This SR verifies that the [20] inch primary containment purge valves are closed as required or, if open, open for an allowable reason. If a purge valve is open in violation of

(continued)

Industry/TSTF Standard Technical Specification Change Traveler

Exempt verification of CIVs that are not locked, sealed or otherwise secured

Classification: Not Classified

NUREGs Affected: ☑ 1430 ☑ 1431 ☑ 1432 ☑ 1433 ☑ 1434

Description:

Revise SR 3.6.3.3 and SR 3.6.6.4 to specify that only CIVs which are not locked, sealed, or otherwise secured are required to verified closed.

Justification:

This change is consistent with other valves required to be in the correct position prior to an accident in the ECCS (SR 3.5.2.2), AFW (SR 3.7.5.1.), and SW (SR 3.7.8.1)

Affected Technical Specifications

SR 3.6.3.3	Containment Isolation Valves	NUREG(s)- 1430 1431 1432 Only
SR 3.6.3.3 Bases	Containment Isolation Valves	NUREG(s)- 1430 1431 1432 Only
SR 3.6.3.4	Containment Isolation Valves	NUREG(s)- 1430 1431 1432 Only
SR 3.6.3.4 Bases	Containment Isolation Valves	NUREG(s)- 1430 1431 1432 Only
SR 3.6.1.3.3	Primary Containment Isolation Valves	NUREG(s)- 1433 1434 Only
SR 3.6.1.3.3 Bases	Primary Containment Isolation Valves	NUREG(s)- 1433 1434 Only
SR 3.6.1.3.4	Primary Containment Isolation Valves	NUREG(s)- 1433 1434 Only
SR 3.6.1.3.4 Bases	Primary Containment Isolation Valves	NUREG(s)- 1433 1434 Only

WOG Review Information

WOG-39

Originating Plant: Date Provided to OG: 30-Oct-95 Needed By:

Owners Group History:

Owners Group Resolution: Approved Date: 09-Nov-95

TSTF Review Information

TSTF Received Date: 27-Nov-95 Date Distributed to OGs for Review: 27-Nov-95

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF History:

Accepted by all OGs

TSTF Resolution: Approved Date: 28-Nov-95 TSTF- 45

NRC Review Information

NRC Received Date: 11-Dec-95 NRC Reviewer: R. Giardina Reviewer Phone #:

Reviewer Comments:

12/12/95 - reviewer modified package and submitted pkg to C. Grimes to review.
6/11/96 - C. Grimes comment: TSTF-45 will be referred to a Tech Br.
9/18/96 - NRC requested Bases modifications.
9/18/96 - TSTF accepted requested changes. Will prepare revision placing a clarification on locked valves in the Bases.
10/15/96 - New revision forwarded to the TSTF for review.

Final Resolution: NRC Requests Changes: TSTF Will Revise Final Resolution Date:

Revision History

TSTF Revision 1 Revision Date: 18-Sep-96 Proposed by: NRC

Revision Description:
9/18/96 - NRC requested Bases modifications.
9/18/96 - TSTF accepted requested changes. Will prepare revision placing a clarification on locked valves in the Bases, adding, "This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing."

Resolution: Approved Date: 19-Dec-96

Incorporation Into the NUREGs

File to BBS/LAN Date:

File to TSTF Date:

File Rev Incoporated:

File Rev Incorporated Date

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
[SR 3.6.3.1	Verify each [48] inch purge valve is sealed closed except for one purge valve in a penetration flow path while in Condition D of the LCO.	31 days]
SR 3.6.3.2	Verify each [8] inch purge valve is closed except when the [8] inch purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open.	31 days
SR 3.6.3.3	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. ----------	
	Verify each containment isolation manual valve and blind flange that is located outside containment and is required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	31 days

(continued)

and not locked, sealed, or otherwise secured

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.6.3.4	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. ---------- Verify each containment isolation manual valve and blind flange that is located inside containment and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days
SR 3.6.3.5	Verify the isolation time of each power operated and each automatic containment isolation valve is within limits.	[In accordance with the Inservice Testing Program or 92 days]
SR 3.6.3.6	Perform leakage rate testing for containment purge valves with resilient seals.	184 days AND Within 92 days after opening the valve
SR 3.6.3.7	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	[18] months

and not locked, sealed, or otherwise secured

(continued)

INSERT

This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1 (continued)

sealed closed position during MODES 1, 2, 3, and 4. A containment purge valve that is sealed closed must have motive power to the valve operator removed. This can be accomplished by de-energizing the source of electric power or by removing the air supply to the valve operator. In this application, the term "sealed" has no connotation of leak tightness. The Frequency is a result of an NRC initiative, Generic Issue B-24 (Ref. 6), related to containment purge valve use during unit operations. In the event purge valve leakage requires entry into Condition D, the Surveillance permits opening one purge valve in a penetration flow path to perform repairs.

SR 3.6.3.2

This SR ensures that the minipurge valves are closed as required or, if open, open for an allowable reason. If a purge valve is open in violation of this SR, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits. The SR is not required to be met when the minipurge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. The minipurge valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day Frequency is consistent with other containment isolation valve requirements discussed in SR 3.6.3.3.

and not locked, sealed, or otherwise secured

SR 3.6.3.3

This SR requires verification that each containment isolation manual valve and blind flange located outside containment and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those containment isolation valves outside containment and capable

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.3 (continued)

of being mispositioned are in the correct position. Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day Frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions. The SR specifies that containment isolation valves open under administrative controls are not required to meet the SR during the time the valves are open. Insert

The Note applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3, and 4 for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in the proper position, is low.

SR 3.6.3.4

and not locked, sealed or otherwise secured

This SR requires verification that each containment isolation manual valve and blind flange that is located inside containment and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate, since these containment isolation valves are operated under administrative controls and the probability of their misalignment is low. The SR specifies that containment isolation valves open under administrative controls are not required to meet the SR during the time they are open. Insert

The Note allows valves and blind flanges located in high radiation areas to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the access to these areas is typically restricted during MODES 1, 2, 3, and 4 for ALARA reasons. Therefore, the

(continued)

INSERT

This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.1	Verify each [42] inch purge valve is sealed closed, except for one purge valve in a penetration flow path while in Condition E of this LCO.	31 days
SR 3.6.3.2	Verify each [8] inch purge valve is closed, except when the [8] inch containment purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open.	31 days
SR 3.6.3.3	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative controls. ---------- Verify each containment isolation manual valve and blind flange that is located outside containment and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	31 days

(continued)

and not locked, sealed, or otherwise secured

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.4	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. ---------- Verify each containment isolation manual valve and blind flange that is located inside containment and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days
SR 3.6.3.5	Verify the isolation time of each power operated and each automatic containment isolation valve is within limits.	[In accordance with the Inservice Testing Program or 92 days]
[SR 3.6.3.6]	Cycle each weight or spring loaded check valve testable during operation through one complete cycle of full travel, and verify each check valve remains closed when the differential pressure in the direction of flow is ≤ [1.2] psid and opens when the differential pressure in the direction of flow is ≥ [1.2] psid and < [5.0] psid.	92 days

and not locked, sealed, or otherwise secured

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.3

This SR requires verification that each containment isolation manual valve and blind flange located outside containment and 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 containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those containment isolation valves outside containment and capable of being mispositioned are in the correct position. Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day Frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions. The SR specifies that containment isolation valves that are open under administrative controls are not required to meet the SR during the time the valves are open.

and not locked, sealed, or otherwise secured

Insert

The Note applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3 and 4 for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in the proper position, is small.

SR 3.6.3.4

This SR requires verification that each containment isolation manual valve and blind flange located inside containment and 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 containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate since these containment isolation valves are operated under

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.4 (continued)

administrative controls and the probability of their misalignment is low. The SR specifies that containment isolation valves that are open under administrative controls are not required to meet the SR during the time they are open. ← Insert

This Note allows valves and blind flanges located in high radiation areas to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3, and 4, for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in their proper position, is small.

SR 3.6.3.5

Verifying that the isolation time of each power operated and automatic containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analyses. [The isolation time and Frequency of this SR are in accordance with the Inservice Testing Program or 92 days.]

SR 3.6.3.6

In subatmospheric containments, the check valves that serve a containment isolation function are weight or spring loaded to provide positive closure in the direction of flow. This ensures that these check valves will remain closed when the inside containment atmosphere returns to subatmospheric conditions following a DBA. SR 3.6.3.6 requires verification of the operation of the check valves that are testable during unit operation. The Frequency of 92 days is consistent with the Inservice Testing Program requirement for valve testing on a 92 day Frequency.

(continued)

INSERT

This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.1	Verify each [42] inch purge valve is sealed closed except for one purge valve in a penetration flow path while in Condition E of this LCO.	31 days
SR 3.6.3.2	Verify each [8] inch purge valve is closed except when the [8] inch purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open.	31 days
SR 3.6.3.3	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. ---------- Verify each containment isolation manual valve and blind flange that is located outside containment and is required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	31 days

(continued)

and not locked, sealed, or otherwise secured

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.6.3.4	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. ---------- Verify each containment isolation manual valve and blind flange that is located inside containment and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days
SR 3.6.3.5	Verify the isolation time of each power operated and each automatic containment isolation valve is within limits.	[In accordance with the Inservice Testing Program or 92 days]
SR 3.6.3.6	Perform leakage rate testing for containment purge valves with resilient seals.	184 days AND Within 92 days after opening the valve
SR 3.6.3.7	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	[18] months

(continued)

and not locked, sealed, or otherwise secured

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1 (continued)

opening of a containment purge valve. Detailed analysis of the purge valves failed to conclusively demonstrate their ability to close during a LOCA in time to limit offsite doses. Therefore, these valves are required to be in the sealed closed position during MODES 1, 2, 3, and 4. A containment purge valve that is sealed closed must have motive power to the valve operator removed. This can be accomplished by de-energizing the source of electric power or by removing the air supply to the valve operator. In this application, the term "sealed" has no connotation of leak tightness. The Frequency is a result of an NRC initiative, Generic Issue B-24 (Ref. 4), related to containment purge valve use during unit operations. This SR is not required to be met while in Condition E of this LCO. This is reasonable since the penetration flow path would be isolated.

SR 3.6.3.2

This SR ensures that the minipurge valves are closed as required or, if open, open for an allowable reason. If a purge valve is open in violation of this SR, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits. The SR is not required to be met when the purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. The minipurge valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day Frequency is consistent with other containment isolation valve requirements discussed in SR 3.6.3.3.

and not locked, sealed, or otherwise secured

SR 3.6.3.3

This SR requires verification that each containment isolation manual valve and blind flange located outside containment and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.3 (continued)

containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those containment isolation valves outside containment and capable of being mispositioned are in the correct position. Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day Frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions. Containment isolation valves that are open under administrative controls are not required to meet the SR during the time the valves are open. ← Insert

The Note applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3, 4 and for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in the proper position, is small.

SR 3.6.3.4

and not locked, sealed, or otherwise secured

This SR requires verification that each containment isolation manual valve and blind flange located inside containment, and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate, since these containment isolation valves are operated under administrative controls and the probability of their misalignment is low. Containment isolation valves that are open under administrative controls are not required to meet the SR during the time that they are open. ← Insert

The Note allows valves and blind flanges located in high radiation areas to be verified closed by use of administrative means. Allowing verification by

(continued)

INSERT

This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.6.1.3.2 ----------NOTES---------- 1. Only required to be met in MODES 1, 2, and 3. 2. Not required to be met when the [18] inch primary containment purge valves are open for inerting, de-inerting, pressure control, ALARA or air quality considerations for personnel entry, or Surveillances that require the valves to be open. ---------- Verify each [18] inch primary containment purge valve is closed.	31 days
SR 3.6.1.3.3 ----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. ---------- Verify each primary containment isolation manual valve and blind flange that is located outside primary containment and is required to be closed during accident conditions is closed.	31 days

(continued)

and not locked, sealed, or otherwise secured

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.4	----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. ---------- Verify each primary containment manual isolation valve and blind flange that is located inside primary containment and is required to be closed during accident conditions is closed. and not locked, sealed, or otherwise secured	Prior to entering MODE 2 or 3 from MODE 4 if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days
SR 3.6.1.3.5	Verify continuity of the traversing incore probe (TIP) shear isolation valve explosive charge.	31 days
SR 3.6.1.3.6	Verify the isolation time of each power operated and each automatic PCIV[, except for MSIVs,] is within limits.	[In accordance with the Inservice Testing Program or 92 days]

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.3

This SR verifies that each primary containment isolation manual valve and blind flange that is located outside primary containment and 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 the primary containment boundary is within design limits.

and not locked, sealed, or otherwise secured

This SR does not require any testing or valve manipulation. Rather, it involves verification that those PCIVs outside primary containment, and capable of being mispositioned, are in the correct position. Since verification of valve position for PCIVs outside primary containment is relatively easy, the 31 day Frequency was chosen to provide added assurance that the PCIVs are in the correct positions.

Two Notes have been added to this SR. The first Note allows valves and blind flanges located in high radiation areas to be verified by use of administrative controls. Allowing verification by administrative controls is considered acceptable since the primary containment is inerted and access to these areas is typically restricted during MODES 1, 2, and 3 for ALARA reasons. Therefore, the probability of misalignment of these PCIVs, once they have been verified to be in the proper position, is low. A second Note has been included to clarify that PCIVs that are open under administrative controls are not required to meet the SR during the time that the PCIVs are open. ← Insert

SR 3.6.1.3.4

This SR verifies that each primary containment manual isolation valve and blind flange that is located inside primary containment and 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 the primary containment boundary is within design limits. For PCIVs inside primary containment, the Frequency defined as "prior to entering MODE 2 or 3 from MODE 4 if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days" is appropriate since these PCIVs are operated under administrative controls and the probability of their misalignment is low. ← Insert 1

(continued)

INSERT

This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.6.1.3.3 ----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. ---------- Verify each primary containment isolation manual valve and blind flange that is located outside primary containment, drywell, and steam tunnel and is required to be closed during accident conditions is closed.	31 days
SR 3.6.1.3.4 ----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. ---------- Verify each primary containment isolation manual valve and blind flange that is located inside primary containment, drywell, or steam tunnel and is required to be closed during accident conditions is closed.	Prior to entering MODE 2 or 3 from MODE 4, if not performed within the previous 92 days

and not locked, sealed, or otherwise secured

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3.2 (continued)

this SR, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits.

The SR is also modified by a Note (Note 1) stating that primary containment purge valves are only required to be closed in MODES 1, 2, and 3. If a LOCA inside primary containment occurs in these MODES, the purge valves may not be capable of closing before the pressure pulse affects systems downstream of the purge valves, or the release of radioactive material will exceed limits prior to the purge valves closing. At other times when the purge valves are required to be capable of closing (e.g., during movement of irradiated fuel assemblies) pressurization concerns are not present and the purge valves are allowed to be open.

The SR is modified by a Note (Note 2) stating that the SR is not required to be met when the purge valves are open for the stated reasons. The Note states that these valves may be opened for pressure control, ALARA, or air quality considerations for personnel entry, or for Surveillances that require the valves to be open, provided the drywell [purge supply and exhaust] lines are isolated. These primary containment purge valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day Frequency is consistent with other primary containment purge valve requirements discussed in SR 3.6.1.3.1.

SR 3.6.1.3.3

This SR verifies that each primary containment isolation manual valve and blind flange that is located outside primary containment, drywell, and steam tunnel, and 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 primary containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification that those PCIVs outside primary

and not locked, sealed or otherwise secured

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3.3 (continued)

containment, and capable of being mispositioned, are in the correct position. Since verification of valve position for PCIVs outside primary containment is relatively easy, the 31 day Frequency was chosen to provide added assurance that the PCIVs are in the correct positions. Insert

Two Notes are 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 PCIVs, once they have been verified to be in the proper position, is low. A second Note is included to clarify that PCIVs open under administrative controls are not required to meet the SR during the time the PCIVs are open.

SR 3.6.1.3.4

This SR verifies that each primary containment manual isolation valve and blind flange located inside primary containment, drywell, or steam tunnel, and not locked, sealed, or otherwise secured and required to be closed during accident conditions, is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the primary containment boundary is within design limits. For PCIVs inside primary containment, drywell, or steam tunnel the Frequency of "prior to entering MODE 2 or 3 from MODE 4, if not performed within the previous 92 days," is appropriate since these PCIVs are operated under administrative controls and the probability of their misalignment is low. Insert

Two Notes are added to this SR. The first Note allows valves and blind flanges located in high radiation areas 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. Therefore, the probability of misalignment of these PCIVs, once they have been verified to be in their proper position, is low. A second Note is included to clarify that PCIVs that are open

(continued)

INSERT

This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

Industry/TSTF Standard Technical Specification Change Traveler

Clarify the CIV surveillance to apply only to automatic isolation valves

Classification: Not Classified

NUREGs Affected: ☑ 1430 ☑ 1431 ☑ 1432 ☑ 1433 ☑ 1434

Description:

Revise SR 3.6.3.5 to delete reference to verifying the isolation time of "each power operated" containment isolation valve and only require verification of each "automatic isolation valve."

Justification:

The Bases for this SR state that the "isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis." There may be valves credited as containment isolation valves which are power operated (i.e., can be remotely operated) that do not receive a containment isolation signal (e.g., a GDC 57 penetration). These power operated valves do not have an isolation time as assumed in the accident analyses since they require operator action. Therefore, deleting reference to power operated isolation valve time testing reduces the potential for misinterpreting the requirements of this SR while maintaining the assumptions of the accident analysis.

Affected Technical Specifications

SR 3.6.5.3.4	Drywell Isolation Valve[s]	
SR 3.6.5.3.4 Bases	Drywell Isolation Valve[s]	
SR 3.6.3.5	Containment Isolation Valves	NUREG(s)- 1430 1431 1432 Only
SR 3.6.3.5 Bases	Containment Isolation Valves	NUREG(s)- 1430 1431 1432 Only
LCO 3.6.4.2 Bases	SCIVs	NUREG(s)- 1433 1434 Only
SR 3.6.4.2.2	SCIVs	NUREG(s)- 1433 1434 Only
SR 3.6.4.2.2 Bases	SCIVs	NUREG(s)- 1433 1434 Only
SR 3.6.1.3.6	Primary Containment Isolation Valves	NUREG(s)- 1433 Only
SR 3.6.1.3.6 Bases	Primary Containment Isolation Valves	NUREG(s)- 1433 Only
SR 3.6.1.3.5	Primary Containment Isolation Valves	NUREG(s)- 1434 Only
SR 3.6.1.3.5 Bases	Primary Containment Isolation Valves	NUREG(s)- 1434 Only

WOG Review Information

WOG-40

Originating Plant: Date Provided to OG: 30-Oct-95 Needed By:

Owners Group History:

Owners Group Resolution: Approved Date: 09-Nov-95

TSTF Review Information

TSTF Received Date: 27-Nov-95 Date Distributed to OGs for Review: 27-Nov-95

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF History:
Accept for CEOG

TSTF Resolution: Approved Date: 28-Nov-95 TSTF- 46

NRC Review Information

NRC Received Date: 11-Dec-95 NRC Reviewer: R. Giardina Reviewer Phone #:

Reviewer Comments:

12/14/95 - reviewer modified pkg and submitted to C. Grimes for review.
6/11/96 - C. Grimes comment: TSTF-46 will be referred to a Tech Br.
9/18/96 - NRC requested Bases modifications.
9/18/96 - TSTF accepted requested changes. Will prepare revision replacing "each power operated and each automatic" in the SR and "each power operated and automatic" in the SR Bases section with "each automatic power operated" in the PWR STS and "each power operated, automatic" in the BWR STS to be consistent with the LCO Bases section.
10/15/96 - New revision forwarded to the TSTF for review.

Final Resolution: NRC Requests Changes: TSTF Will Revise Final Resolution Date:

Revision History

TSTF Revision 1 Revision Date: 18-Sep-96 Proposed by: NRC

Revision Description:
9/18/96 - NRC requested Bases modifications.
9/18/96 - TSTF accepted requested changes. Will prepare revision replacing "each power operated and each automatic" in the SR and "each power operated and automatic" in the SR Bases section with "each automatic power operated" in the PWR STS and "each power operated, automatic" in the BWR STS to be consistent with the LCO Bases section.
In addition, at the NRC's suggestion, the change in the valve nomenclature was applied to BWR/4 SR 3.6.4.2.2 (SCIVs), and BWR/6 SR 3.6.4.2.2 (SCIVs) and 3.6.5.3.4 (Drywell Isolation Valve[s]) and their associated Bases.

Resolution: Approved Date: 19-Dec-96

Incorporation Into the NUREGs

File to BBS/LAN Date:

File to TSTF Date:

File Rev Incoporated:

File Rev Incorporated Date

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.6.3.4	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. ---------- Verify each containment isolation manual valve and blind flange that is located inside containment and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days
SR 3.6.3.5	Verify the isolation time of ~~each power operated and~~ each automatic containment isolation valve is within limits. (power operated)	In accordance with the Inservice Testing Program or 92 days
SR 3.6.3.6	Perform leakage rate testing for containment purge valves with resilient seals.	184 days AND Within 92 days after opening the valve
SR 3.6.3.7	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	[18] months

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.4 (continued)

probability of misalignment of these containment isolation valves, once they have been verified to be in their proper position, is small.

SR 3.6.3.5

Verifying that the isolation time of each ~~power operated and~~ automatic containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analyses. [The isolation time and Frequency of this SR are in accordance with the Inservice Testing Program or 92 days.]

power operated

SR 3.6.3.6

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, is required to ensure OPERABILITY. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of once per 184 days was established as part of the NRC resolution of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration" (Ref. 7).

Additionally, this SR must be performed within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (greater than that occurring to a valve that has not been opened). Thus, decreasing the interval (from 184 days) is a prudent measure after a valve has been opened.

SR 3.6.3.7

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.4	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. ---------- Verify each containment isolation manual valve and blind flange that is located inside containment and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days
SR 3.6.3.5	Verify the isolation time of ~~each power operated and~~ each automatic containment isolation valve is within limits. (power operated)	[In accordance with the Inservice Testing Program or 92 days]
[SR 3.6.3.6	Cycle each weight or spring loaded check valve testable during operation through one complete cycle of full travel, and verify each check valve remains closed when the differential pressure in the direction of flow is ≤ [1.2] psid and opens when the differential pressure in the direction of flow is ≥ [1.2] psid and < [5.0] psid.	92 days]

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.4 (continued)

administrative controls and the probability of their misalignment is low. The SR specifies that containment isolation valves that are open under administrative controls are not required to meet the SR during the time they are open.

This Note allows valves and blind flanges located in high radiation areas to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3, and 4, for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in their proper position, is small.

SR 3.6.3.5

Verifying that the isolation time of each ~~power operated and~~ automatic containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analyses. [The isolation time and Frequency of this SR are in accordance with the Inservice Testing Program or 92 days.]

power operated

SR 3.6.3.6

In subatmospheric containments, the check valves that serve a containment isolation function are weight or spring loaded to provide positive closure in the direction of flow. This ensures that these check valves will remain closed when the inside containment atmosphere returns to subatmospheric conditions following a DBA. SR 3.6.3.6 requires verification of the operation of the check valves that are testable during unit operation. The Frequency of 92 days is consistent with the Inservice Testing Program requirement for valve testing on a 92 day Frequency.

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.4	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. ---------- Verify each containment isolation manual valve and blind flange that is located inside containment and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days
SR 3.6.3.5	Verify the isolation time of ~~each power operated and~~ each automatic containment isolation valve is within limits. (power operated)	[In accordance with the Inservice Testing Program or 92 days]
SR 3.6.3.6	Perform leakage rate testing for containment purge valves with resilient seals.	184 days AND Within 92 days after opening the valve
SR 3.6.3.7	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	[18] months

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.4 (continued)

administrative means 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 containment isolation valves, once they have been verified to be in their proper position, is small.

SR 3.6.3.5

Verifying that the isolation time of each ~~power operated and~~ automatic containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis. [The isolation time and Frequency of this SR are in accordance with the Inservice Testing Program or 92 days.]

power operated

SR 3.6.3.6

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J (Ref. 5), is required to ensure OPERABILITY. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of 184 days was established as part of the NRC resolution of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration" (Ref. 3).

Additionally, this SR must be performed within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (beyond that occurring to a valve that has not been opened). Thus, decreasing the interval (from 184 days) is a prudent measure after a valve has been opened.

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.4	----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. ---------- Verify each primary containment manual isolation valve and blind flange that is located inside primary containment and is required to be closed during accident conditions is closed.	Prior to entering MODE 2 or 3 from MODE 4 if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days
SR 3.6.1.3.5	Verify continuity of the traversing incore probe (TIP) shear isolation valve explosive charge.	31 days
SR 3.6.1.3.6	Verify the isolation time of ~~each power operated and~~ each automatic PCIV[, except for MSIVs,] is within limits. power operated	[In accordance with the Inservice Testing Program or 92 days]

(continued)

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.2.1	----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for SCIVs that are open under administrative controls. ----------	
	Verify each secondary containment isolation manual valve and blind flange that is required to be closed during accident conditions is closed.	31 days
SR 3.6.4.2.2	Verify the isolation time of each power operated, ~~and each~~ automatic SCIV is within limits.	[In accordance with the Inservice Testing Program or 92 days]
SR 3.6.4.2.3	Verify each automatic SCIV actuates to the isolation position on an actual or simulated actuation signal.	[18] months

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3.4 (continued)

Two Notes have been added to this SR. The first Note allows valves and blind flanges located in high radiation areas to be verified by use of administrative controls. Allowing verification by administrative controls is considered acceptable since the primary containment is inerted and access to these areas is typically restricted during MODES 1, 2, and 3 for ALARA reasons. Therefore, the probability of misalignment of these PCIVs, once they have been verified to be in their proper position, is low. A second Note has been included to clarify that PCIVs that are open under administrative controls are not required to meet the SR during the time that the PCIVs are open.

SR 3.6.1.3.5

The traversing incore probe (TIP) shear isolation valves are actuated by explosive charges. Surveillance of explosive charge continuity provides assurance that TIP valves will actuate when required. Other administrative controls, such as those that limit the shelf life of the explosive charges, must be followed. The 31 day Frequency is based on operating experience that has demonstrated the reliability of the explosive charge continuity.

SR 3.6.1.3.6

Verifying the isolation time of each ~~power operated and each~~ power operated automatic PCIV is within limits is required to demonstrate OPERABILITY. MSIVs may be excluded from this SR since MSIV full closure isolation time is demonstrated by SR 3.6.1.3.7. The isolation time test ensures that the valve will isolate in a time period less than or equal to that assumed in the safety analyses. The isolation time and Frequency of this SR are [in accordance with the requirements of the Inservice Testing Program or 92 days].

[SR 3.6.1.3.7

For primary containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J (Ref. 3), is required to ensure

(continued)]

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.

LCO

SCIVs form a part of the [secondary] containment boundary. The SCIV safety function is related to control of offsite radiation releases resulting from DBAs.

The power operated, (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 Reference 3.

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 de-activated and secured in their closed position, and blind flanges are in place. These passive isolation valves or devices are listed in Reference 3.

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

(continued)

BASES (continued)

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 that those SCIVs in [secondary] containment that are capable of being mispositioned are in the correct position.

Since these SCIVs are readily accessible to personnel during normal operation and verification of their position is relatively easy, the 31 day Frequency was chosen to provide added assurance that the SCIVs are in the correct positions.

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.

SR 3.6.4.2.2

Verifying that the isolation time of each power operated~~, and each~~ automatic SCIV is within limits is required to demonstrate OPERABILITY. 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. The isolation time and Frequency of this SR are [in accordance with the Inservice Testing Program or 92 days].

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.5	Verify the isolation time of ~~each power operated and~~ each automatic PCIV[, except MSIVs,] is within limits. (power operated)	In accordance with the Inservice Testing Program or 92 days
SR 3.6.1.3.6	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Perform leakage rate testing for each primary containment purge valve with resilient seals.	184 days AND Once within 92 days after opening the valve
SR 3.6.1.3.7	Verify the isolation time of each MSIV is ≥ [3] seconds and ≤ [5] seconds.	In accordance with the Inservice Testing Program or 18 months
SR 3.6.1.3.8	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	[18] months

(continued)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.4.2.1	----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative controls. 2. Not required to be met for SCIVs that are open under administrative means. --- Verify each secondary containment isolation manual valve and blind flange that is required to be closed during accident conditions is closed.	31 days
SR 3.6.4.2.2	Verify the isolation time of each power operated, ~~and each~~ automatic SCIV is within limits.	[In accordance with the Inservice Testing Program or 92 days]
SR 3.6.4.2.3	Verify each automatic SCIV actuates to the isolation position on an actual or simulated automatic isolation signal.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.5.3.4	Verify the isolation time of each power operated, ~~and each~~ automatic drywell isolation valve is within limits.	In accordance with the Inservice Testing Program or 92 days
SR 3.6.5.3.5	Verify each automatic drywell isolation valve actuates to the isolation position on an actual or simulated isolation signal.	[18] months
SR 3.6.5.3.6	Verify each [ ] inch drywell purge isolation valve is blocked to restrict the valve from opening > [50]%.	[18] months

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3.4 (continued)

under administrative controls are not required to meet the SR during the time that the PCIVs are open.

SR 3.6.1.3.5

Verifying the isolation time of each ~~power operated and each~~ (power operated, and each) automatic PCIV is within limits is required to demonstrate OPERABILITY. MSIVs may be excluded from this SR since MSIV full closure isolation time is demonstrated by SR 3.6.1.3.6. The isolation time test ensures that the valve will isolate in a time period less than or equal to that assumed in the safety analysis. The isolation time and Frequency of this SR are [in accordance with the Inservice Testing Program or 92 days].

SR 3.6.1.3.6

For primary containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J (Ref. 4), is required to ensure OPERABILITY. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Based on this observation, and the importance of maintaining this penetration leak tight (due to the direct path between primary containment and the environment), a Frequency of 184 days was established. Additionally, this SR must be performed within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (beyond that which occurs to a valve that has not been opened). Thus, decreasing the interval (from 184 days) is a prudent measure after a valve has been opened.

The SR is modified by a Note stating that the primary containment purge valves are only required to meet leakage rate testing requirements in MODES 1, 2, and 3. If a LOCA inside primary containment occurs in these MODES, purge valve leakage must be minimized to ensure offsite radiological release is within limits. At other times when the purge valves are required to be capable of closing

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

primary containment (Ref. 3), and a fuel handling accident in the auxiliary building (Ref. 4). The secondary containment performs no active function in response to each of these limiting events, but the boundary 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.

LCO

SCIVs form a part of the secondary containment boundary. The SCIV safety function is related to control of offsite radiation releases resulting from DBAs.

The automatic power operated, 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 Reference 5.

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 de-activated and secured in their closed position, and blind flanges are in place. These passive isolation valves or devices are listed in Reference 5.

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, 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

(continued)

TSTF-46

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.6.4.2.1

This SR verifies each secondary containment isolation manual 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 that those SCIVs in [secondary containment] that are capable of being mispositioned are in the correct position.

Since these SCIVs are readily accessible to personnel during normal unit operation and verification of their position is relatively easy, the 31 day Frequency was chosen to provide added assurance that the SCIVs are in the correct positions.

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.

SR 3.6.4.2.2

Verifying the isolation time of each power operated ~~and each~~ automatic SCIV is within limits is required to demonstrate OPERABILITY. 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. The isolation time and Frequency of this SR are [in accordance with the Inservice Testing Program or 92 days].

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.5.3.2

This SR ensures that the [20] inch drywell purge isolation valves are closed as required or, if open, open for an allowable reason. This SR is intended to be used for drywell purge isolation valves that are fully qualified to close under accident conditions; therefore, these valves are allowed to be open for limited periods of time. This SR has been modified by a Note indicating the SR is not required to be met when the drywell purge supply or exhaust valves are open for pressure control, ALARA or air quality considerations for personnel entry, or surveillances that require the valve to be open [provided the [20] inch containment [purge system supply and exhaust] lines are isolated]. The 31 day Frequency is consistent with the valve requirements discussed under SR 3.6.5.3.1.

SR 3.6.5.3.3

This SR requires verification that each drywell isolation manual valve and blind flange that is required to be closed during accident conditions is closed. The SR helps to ensure that drywell bypass leakage is maintained to a minimum. Since these valves are inside primary containment, the Frequency specified as "prior to entering MODE 2 or 3 from MODE 4, if not performed in the previous 92 days," is appropriate because of the inaccessibility of the drywell isolation valves and because these drywell isolation valves are operated under administrative controls and the probability of their misalignment is low.

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

SR 3.6.5.3.4

Verifying that the isolation time of each power operated, ~~and~~ ~~each~~ automatic drywell isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis. The isolation time and Frequency of this SR are [in accordance with the Inservice Testing Program or 92 days].

(continued)

SUPPLEMENT 2
CONVERSION PACKAGE SECTION 3.6
PAGE INSERTION INSTRUCTIONS
COMPILATION OF CTS

Remove and insert the following pages into Enclosure 14 to Serial RNP-RA/96-0141.

Remove	Insert
1-4 (3.6.1)	1-4 (3.6.1)
1-4 (3.6.2)	1-4 (3.6.2)
1-4 (3.6.3)	1-4 (3.6.3)
3.6-1 (3.6.1)	3.6-1 (3.6.1)
3.6-3 (3.6.3)	3.6-3 (3.6.3)
4.1-12 (3.6.3)	4.1-12 (3.6.3)
4.4-1 (3.6.1)	4.4-1 (3.6.1)
4.4-1 (3.6.2)	4.4-1 (3.6.2)
4.4-4 (3.6.3)	4.4-4 (3.6.3)
4.4-4 (3.6.8)	4.4-4 (3.6.8)
4.5-3 (3.6.7)	4.5-3 (3.6.7)

Specification 3.6.1

ITS

a. All non-automatic containment isolation valves not required for normal operation are closed and blind flanges are properly installed where required. — see 3.6.3

b. The equipment door is properly closed and sealed. — LA 6

c. At least one door in the personnel air lock is properly closed and sealed — see 3.6.2

d. All automatic containment isolation trip valves required to be closed during accident conditions are operable or are secured closed except as stated in Specification 3.6.3. Manual valves qualifying as automatic containment isolation valves are secured closed. — see 3.6.3

[SR 3.6.1.1] e. The uncontrolled containment leakage satisfies Specification 4.4. — A22

1.8 QUADRANT POWER TILT

The quadrant power tilt is defined as the ratio of maximum to average of the upper excore detector currents or the lower excore detector currents, whichever is greater. If one excore is out of service, the three in-service units are used in computing the average. — see 3.6.1

1.9 DELETED

1.10 STAGGERED TEST BASIS

A Staggered Test Basis shall consist of:

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

Specification 3.6.2

a. All non-automatic containment isolation valves not required for normal operation are closed and blind flanges are properly installed where required. — See 3.6.3

b. The equipment door is properly closed and sealed. — See 3.6.1

c. At least one door in the personnel air lock is properly closed and sealed. — LAG

d. All automatic containment isolation trip valves required to be closed during accident conditions are operable or are secured closed except as stated in Specification 3.6.3. Manual valves qualifying as automatic containment isolation valves are secured closed. — See 3.6.3

e. The uncontrolled containment leakage satisfies Specification 4.4. — See 3.6.1

1.8 QUADRANT POWER TILT

The quadrant power tilt is defined as the ratio of maximum to average of the upper excore detector currents or the lower excore detector currents, whichever is greater. If one excore is out of service, the three-in-service units are used in computing the average.

1.9 DELETED — See 1.0

1.10 STAGGERED TEST BASIS

A Staggered Test Basis shall consist of:

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

Specification 3.6.3

a. All non-automatic containment isolation valves not required for normal operation are closed and blind flanges are properly installed where required. (LA1)

b. The equipment door is properly closed and sealed. ← See 3.6.1

c. At least one door in the personnel air lock is properly closed and sealed. ← See 3.6.2

d. All automatic containment isolation trip valves required to be closed during accident conditions are operable or are secured closed except as stated in Specification 3.6.3. Manual valves qualifying as automatic containment isolation valves are secured closed. (LA5) (LA3)

e. The uncontrolled containment leakage satisfies Specification 4.4. ← See 3.6.1

1.8 QUADRANT POWER TILT

The quadrant power tilt is defined as the ratio of maximum to average of the upper excore detector currents or the lower excore detector currents, whichever is greater. If one excore is out of service, the three in-service units are used in computing the average.

1.9 DELETED — See 1.0

1.10 STAGGERED TEST BASIS

A Staggered Test Basis shall consist of:

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

Amendment No. 142
Supplement 2

Specification 3.6.1

ITS

3.6 CONTAINMENT SYSTEM

A1

Applicability

~~Applies~~ to the integrity of reactor containment.

Objective

To define the operating status of the reactor containment for plant operation.

Specification

OPERABLE

3.6.1 Containment Integrity

[LCO 3.6.1] [App.]

a. The containment ~~integrity (as defined in 1.7)~~ shall not be violated ~~unless the reactor is in the cold shutdown condition~~ IN MODES 1, 2, 3 & 4

A2

b. The containment integrity shall not be violated when the reactor vessel head is removed unless a shutdown margin of at least 6% $\Delta k/k$ is constantly maintained.

See 3.9.3

c. Positive reactivity changes shall not be made by rod drive motion when the containment integrity is not intact except during any one of the following evolutions:

L1

1. rod drop timing test
2. rod drive mechanism timing test
3. control rod exercise test
4. shutdown banks fully withdrawn and control banks withdrawn to ≤ 6 steps.

Add RA A.1
RA B.1
RA B.2

M1

Amendment No. ~~87~~, 140
Supplement 2

ITS

Specification 3.6.3

3.6.4 Containment Purge and Vent Valves

[SR 3.6.3.1] 3.6.4.1 During periods when Containment integrity is required, the Containment Purge Supply and Exhaust Isolation Valves (42") or the Pressure and Vacuum Relief Valves (6") may be opened only for safety related reasons including operational testing and surveillances.

MODE 1, 2, 3 & 4

[Note SR 3.6.3.1] 3.6.4.2 ~~When the RCS is greater than 200°F,~~ the 42" and 6" valves may not be open simultaneously.

A13

3.6.4.3 The 6" and 42" valves will be tested in accordance with the frequency and operability requirements specified in the Robinson plant IST program except that the 42" valves will be tested prior to use if not tested within the previous quarter. Otherwise the 42" valves will not be cycled quarterly only for testing purposes.

LA4

Basis

The Reactor Coolant System must be in the conditions of cold shutdown in order to relax Containment integrity. This ensures the release of radioactive materials from the containment atmosphere will limit the site boundary radiation doses to within the dose guideline values of 10 CFR Part 100 during accident conditions.

The shutdown margins are selected based on the type of activities that are being carried out. The 6% $\Delta k/k$ shutdown margin during refueling precludes criticality, even though fuel is being moved and provides sufficient time for the reactor operator to recognize an inadvertent boron dilution event and take corrective actions to mitigate the effects[3]. When the reactor head is not to be removed, the specified cold shutdown margin of 1% $\Delta k/k$ precludes criticality.

Regarding internal pressure limitations, the containment design pressure of 42 psig would not be exceeded if the internal pressure before a major loss-of-coolant accident were as much as 2 psig.[1] The containment is designed to withstand an internal vacuum of 2.0 psig.[2]

A14

Add to Condition D

"OR 42" penetration (Supply or Exhaust) purge valves open and 6" penetration (pressure or vacuum relief) valves open simultaneously."

M32

Specification 3.6.3 (A1)

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

-ITS

		Check	Frequency	Maximum Time Between Tests
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA*
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA
5.	Containment Isolation Trip	Functioning	Each refueling shutdown (18 Months)	NA
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA
7.	Service Water System	Functioning	Each refueling shutdown	NA
8.	DELETED			
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days
11.	DELETED			
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days

See 3.1.4; See 3.4.10; See 3.7.1; M11; See 3.6.3.5; See 3.9.1; See 3.7.7; See 3.4.13; See 3.8.3; See 3.7.1

M12

Verify each automatic containment isolation valve that is not locked, sealed or otherwise secured in position actuates to the isolation position on an actual or simulated actuation signal.

Amendment No. 142, 188, 164, 171
Supplement 2

Specification 3.6.1

ITS

4.4 CONTAINMENT TESTS

A1

Applicability

Applies to containment leakage and structural integrity.

Objective

To verify that potential leakage from the containment and that pre-stressing tendon loads are maintained within acceptable values.

A5

Specification

4.4.1 Operational Leakage Rate Testing

For Type A tests

[SR 3.6.1.3] Required visual examinations and leakage rate testing shall be performed in accordance with the Containment Leakage Rate Testing Program, except for testing of the containment personnel air lock. The containment personnel air lock shall be tested every six months.

See 3.6.2

Add SR 3.6.1.1 — A5

Add SR 3.6.1.2 — A3

Amendment No. 107, 169
Supplement 2

ITS

Specification 3.6.2

A1

4.4 CONTAINMENT TESTS

Applicability

Applies to containment leakage and structural integrity.

Objective

To verify that potential leakage from the containment and that pre-stressing tendon loads are maintained within acceptable values.

Specification

4.4.1 Operational Leakage Rate Testing

Required visual examinations and leakage rate testing shall be performed in accordance with the Containment Leakage Rate Testing Program ~~except for testing of the containment personnel air lock~~. The containment personnel air lock shall be tested ~~every six~~ ~~months~~.

see 3.6.1

[SR 3.6.2.1]

in accordance with 10CFR50, Appendix J, option A, as modified by approved exemptions.

A7

Add SR 3.6.2.2

M3

Add SR 3.6.2.1, Notes 1+2

A26

Amendment No. 107, 169
Supplement 2

ITS

Specification 3.6.3

4.4.2 Isolation Valve Tests

[SR 3.6.3.4] a. Isolation valves ~~shall be tested for operability at each refueling~~ Verify isolation time of each automatic (A13) is within limits when tested in accordance with the Inservice Testing Program (A1)

b. Isolation valves which are pressurized by the penetration pressurization system will be leak tested in accordance with the containment leakage rate testing program. — See 3.6.1

c. The isolation seal water system shall be operated to demonstrate the capability for sealing the associated containment isolation valves at each refueling. — See 3.6.8

4.4.3 Post Accident Recirculation Heat Removal System

a. The portion of the Residual Heat Removal System that is downstream of the first isolation valve outside the containment shall be tested either by use in normal operation or hydrostatically tested at 350 psig at the interval specified below.

b. Visual inspection shall be made for excessive leakage from components of the system. Any visual leakage that cannot be stopped at test conditions shall be measured by collection and weighing or by another equivalent method. — See 5.5

c. The acceptance criterion is that maximum allowable leakage from the recirculation heat removal system components (which includes valve stems, flanges and pump seals) shall not exceed two gallons per hour.

d. Repairs shall be made as required to maintain leakage with the acceptance criterion in c. above.

Add SR 3.6.3.2
SR 3.6.3.3
SR 3.6.3.6 — M13

Specification 3.6.8

A1

4.4.2 Isolation Valve Tests

a. Isolation valves shall be tested for operability at each refueling. — See 3.6.3

b. Isolation valves which are pressurized by the penetration pressurization system will be leak tested in accordance with the containment leakage rate testing program. — See 3.6.1

Verify [SR 3.6.8.6]

c. The isolation seal water system shall be operated ~~to demonstrate the capability for~~ sealing the associated containment isolation valves at ~~each refueling~~ [18 months] M29

4.4.3 Post Accident Recirculation Heat Removal System

a. The portion of the Residual Heat Removal System that is downstream of the first isolation valve outside the containment shall be tested either by use in normal operation or hydrostatically tested at 350 psig at the interval specified below.

b. Visual inspection shall be made for excessive leakage from components of the system. Any visual leakage that cannot be stopped at test conditions shall be measured by collection and weighing or by another equivalent method.

c. The acceptance criterion is that maximum allowable leakage from the recirculation heat removal system components (which includes valve stems, flanges and pump seals) shall not exceed two gallons per hour.

d. Repairs shall be made as required to maintain leakage with the acceptance criterion in c. above. — See 5.5

Header flow rate is:
a. ≤ 52.00 cc/min for Header A,
b. ≤ 16.50 cc/min for Header B,
c. ≤ 32.50 cc/min for Header C, and
d. ≤ 23.00 cc/min for Header D. — M23

Add SR 3.6.8.1
SR 3.6.8.2
SR 3.6.8.5 — M27

Add SR 3.6.8.3 — A24

Supplement 2

Specification 3.6 7

A1

[SR 3.6 7.1]
4.5.2.2

31 days

M33

At monthly intervals during power operations each valve (manual, power operated, or automatic) in the safety injection (low and high pressure) and containment spray system flow paths that is not locked, sealed or otherwise secured in position shall be verified as correctly positioned.

see 3.5.2

Basis

The Safety Injection System and the Containment Spray System are principal plant safeguards that are normally inoperative during reactor operation. Complete systems tests cannot be performed when the reactor is operating because a safety injection signal causes reactor trip, main feedwater isolation and containment isolation, and a Containment Spray System test requires the system to be temporarily disabled. The method of assuring operability of these systems is therefore to combine systems tests to be performed during annual plant shutdowns, with more frequent component tests, which can be performed during reactor operation.

A14

The systems tests demonstrate proper automatic operation of the Safety Injection and Containment Spray Systems. A test signal is applied to initiate automatic action and verification made that the components receive the safety injection in the proper sequence. The test demonstrates the operation of the valves, pump circuit breakers, and automatic circuitry.[1][2][4]

During reactor operation, the instrumentation which is depended on to initiate safety injection and containment spray is generally checked each shift and the initiating circuits are tested monthly (in accordance with Specification 4.1). The testing of the analog channel inputs is accomplished in the same manner as for the reactor protection system. The engineered safety features logic system is tested by means of test switches to simulate inputs from the analog channels. The test switches interrupt the logic matrix output to the master relay to prevent actuation. Verification that the logic is accomplished is indicated by the matrix test light. Upon completion of the logic checks, verification that the circuit from the logic matrices to the master relay is complete is accomplished by use of an ohmmeter to check continuity. In