Industry/TSTF Standard Technical Specification Change Traveler

Increase CIV Completion Time from 72 Hours to 7 Days (NPSD-1168)

Classification: 1) Technical Change

Priority: 1)High

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

This change extends the Completion Time for penetration flowpaths with one valve inoperable from 72 hours to 7 days. This change is applicable to both penetrations with two containment isolation valves and with one containment isolation valve. This change is not applicable to the containment sump supply valves to the ECCS and containment spray pump.
See Attached

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Revision History

OG Revision 0 **Revision Status: Active** **Next Action:**

Revision Proposed by: CEOG

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 11-Jul-00

Owners Group Comments:
(No Comments)

Owners Group Resolution: Approved Date: 05-Dec-00

TSTF Review Information

TSTF Received Date: 15-Jan-01 Date Distributed for Review: 15-Jan-01

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

TSTF Comments:

WOG, BWOG, BWROG - Not applicable.
The TSTF requested the following changes:
Change "NRC SER" to "NRC Safety Evaluation"
Bracket Condition B
Eliminate references to a CRMP as Maintenance Rule a.4 is now in effect.
Move the Reviewer's Note to the Bases.
Returned to CEOG for prioritization.

TSTF Resolution: Approved Date: 14-Feb-01

NRC Review Information

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OG Revision 0 Revision Status: Active Next Action:

NRC Received Date: 10-Apr-01

NRC Comments:

1. Proposed Condition A has an applicability Note that restricts the Condition to the containment sump supply valves to the ECCS and containment spray pumps. The staff safety evaluation implies that those penetrations that don't meet the topical report criteria and/or the plant specific evaluations must retain the 4 hour Completion Time. The Condition A Note should be modified to reflect these additional or potential penetrations. See comment 3 for a variation of this comment.

2. New Condition B (STS Condition A) has a bracketed exception. The bracketed exception as proposed implies that proposed Condition A has limits of some sort. Since Rev. 2 to the STS is about to be issued, it is felt that the wording used in TSTF-207, R.5 better reflects the intent of the current and proposed exception. The exception and the proposed change should be modified accordingly.

3. New Condition D (STS Condition C) was revised in TSTF-30 from 4 hours to 72 hours. It is unclear from the staff SE if all types of configurations for penetration flow paths with only one containment isolation valve and a closed system have been evaluated by the Topical Report. If they have, this comment is moot. If they have not, then an Action similar to STS Condition C as modified by TSTF-30 needs to be proposed with an applicability Note based on Comment 1 above.

4. Proposed Insert 2 is the Reviewer's Note to be added to the Bases which specifies the conditions for adopting the 7 day Completion Time. The Note just references the staff SE for the Topical Report. The Note should specifically state the staff conditions that must be met in order to use the 7 day Completion Time. The reviewer implementing the TSTF at the plant and/or the staff reviewer may not have ready access to the staff SE. Also see comment 7 below. In addition the Reviewer's Note should state that if the conditions or criteria cannot be met then the 4/72 hour Completion Times should be used, otherwise the [7 days] in Conditions B and D would be confusing in terms of what to put in their place.

5. The bases changes should be compared to TSTF-207 and TSTF-30 for applicability; if there are differences or changes that are required they should be discussed in the Background portion of the TSTF.

6. The Background portion of the TSTF discuss the change from 4 hours to 7 days. TSTF-30 changed STS Condition C from 4 hours to 72 days. While this should not affect the results of the Topical Report for that type of penetration or the TSTF, the Background should be revised to reflect the current STS (STS Rev. 2).

7. The Background portion of the TSTF list the conditions for acceptance of the 7 days found in the staff SE. Condition 4 does not reflect the staff's requirement that the Configuration Risk Management Program (CRMP) be found acceptable to the staff. In addition staff condition CRMP (ii) has not been addressed in the Background section. This requirement deals with common cause failures and operability verification.

Final Resolution: Superceded by Revision Final Resolution Date: 07-May-01

TSTF Revision 1 Revision Status: Active Next Action: TSTF

Revision Proposed by: CEOG

Revision Description:
On May 7, 2001, the NRC provided comments on TSTF-373, Revision 0. Those comments are addressed below.

1. Proposed Condition A has an applicability Note that restricts the Condition to the containment sump supply valves to the ECCS and containment spray pumps. The staff safety evaluation implies that those penetrations that don't meet the topical report criteria and/or the plant specific evaluations must retain the 4

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hour Completion Time. The Condition A Note should be modified to reflect these additional or potential penetrations. See comment 3 for a variation of this comment.

Response: 1. The proposed condition A note is modified to bracket the valve description. A Reviewer's Note is added to the Bases stating that Condition A only applies to those valves that meet the conditions in the Topical Report.

2. New Condition B (STS Condition A) has a bracketed exception. The bracketed exception as proposed implies that proposed Condition A has limits of some sort. Since Rev. 2 to the STS is about to be issued, it is felt that the wording used in TSTF-207, R.5 better reflects the intent of the current and proposed exception. The exception and the proposed change should be modified accordingly.

Response: The changes are re-marked on Revision 2 pages.

3. New Condition D (STS Condition C) was revised in TSTF-30 from 4 hours to 72 hours. It is unclear from the staff SE if all types of configurations for penetration flow paths with only one containment isolation valve and a closed system have been evaluated by the Topical Report. If they have, this comment is moot. If they have not, then an Action similar to STS Condition C as modified by TSTF-30 needs to be proposed with an applicability Note based on Comment 1 above.

Response: The changes are re-marked on Revision 2 pages. A Reviewer's Note is added to the Bases stating that the 7 day Completion Time for Required Action D.1 is only applicable to the containment isolation valves that meet the conditions in the Topical Report. For any containment isolation valves meeting Condition D and not meeting the conditions of the Topical Report, a 72 hour Completion Time is applied.

4. Proposed Insert 2 is the Reviewer's Note to be added to the Bases which specifies the conditions for adopting the 7 day Completion Time. The Note just references the staff SE for the Topical Report. The Note should specifically state the staff conditions that must be met in order to use the 7 day Completion Time. The reviewer implementing the TSTF at the plant and/or the staff reviewer may not have ready access to the staff SE. Also see comment 7 below. In addition the Reviewer's Note should state that if the conditions or criteria cannot be met then the 4/72 hour Completion Times should be used, otherwise the [7 days] in Conditions B and D would be confusing in terms of what to put in their place.

Response: The NRC requested that the specific conditions form the SER be restated in NUREG 1432. This would not be appropriate since it could be taken out of context and possibly misused by individuals reading only the conditions and not the balance of the entire SE for the Topical Report. Therefore, the conditions will not be added to the NUREG. However, the approved version of the Topical resport includes the SE. As use of the TSTF would require use of the Topical, and the SE is part of the Topical, both documents would be consulted when incorporating this change. The TSTF strongly believes that individual plant licensing engineers or NRC staff members working on a licensing amendment involving this Topical Report needs a complete copy of the Topical and the NRC SE for the Topical and can not rely on extracted statements from the SE to comprehend the intent of the Topical and the SE for the Topical. No changes are needed for the response to this question.

5. The bases changes should be compared to TSTF-207 and TSTF-30 for applicability; if there are differences or changes that are required they should be discussed in the Background portion of the TSTF.

Response: The changes are re-marked on Revision 2 pages. Revision 2 includes TSTF-207 and TSTF-30.

6. The Background portion of the TSTF discuss the change from 4 hours to 7 days. TSTF-30 changed STS Condition C from 4 hours to 72 days. While this should not affect the results of the Topical Report for that type of penetration or the TSTF, the Background should be revised to reflect the current STS (STS Rev. 2).

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TSTF Revision 1 **Revision Status: Active** **Next Action: TSTF**

Response: The background has been revised. Changes are not from 72 hours to 7 days.

7. The Background portion of the TSTF list the conditions for acceptance of the 7 days found in the staff SE. Condition 4 does not reflect the staff's requirement that the Configuration Risk Management Program (CRMP) be found acceptable to the staff. In addition staff condition CRMP (ii) has not been addressed in the Background section. This requirement deals with common cause failures and operability verification.

Response: This question mentions a discusses a Configuration Risk Management Program (CRMP) and requests that the CRMP be addressed in the Background section of the TSTF. The need for a CRMP has been changed as a result of the revision of the Maintenance Rule . 10 CFR 50.65 (a)(4) which requires that the licensee "shall assess and manage the increase in risk that may result from the proposed maintenance activities." This requirement takes the place of a CRMP.

Additional Changes:

The References are renumbered to appear in presentation order as required by the Writer's Guide.

The format of a Reviewer's Note to SR 3.6.3.9 is corrected.

TSTF Review Information

TSTF Received Date: 28-Oct-01 Date Distributed for Review: 28-Oct-01

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

TSTF Comments:

(No Comments)

TSTF Resolution: Date:

Incorporation Into the NUREGs

File to BBS/LAN Date: TSTF Informed Date: TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

Ref. 3.6.3 Bases	Containment Isolation Valves (Atmospheric and Dual)
Action 3.6.3.A	Containment Isolation Valves (Atmospheric and Dual) Change Description: Renamed Condition B and revised
Action 3.6.3.A	Containment Isolation Valves (Atmospheric and Dual) Change Description: New
Action 3.6.3.A Bases	Containment Isolation Valves (Atmospheric and Dual) Change Description: Renamed Condition B and revised
Action 3.6.3.A Bases	Containment Isolation Valves (Atmospheric and Dual) Change Description: New

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Action 3.6.3.B	Containment Isolation Valves (Atmospheric and Dual) Change Description: Renamed Condition C
Action 3.6.3.B Bases	Containment Isolation Valves (Atmospheric and Dual) Change Description: Renamed Condition C
Action 3.6.3.C	Containment Isolation Valves (Atmospheric and Dual) Change Description: Renamed Condition D and revised
Action 3.6.3.C Bases	Containment Isolation Valves (Atmospheric and Dual) Change Description: Renamed Condition D and revised
Action 3.6.3.D	Containment Isolation Valves (Atmospheric and Dual) Change Description: Renamed Condition E
Action 3.6.3.D Bases	Containment Isolation Valves (Atmospheric and Dual) Change Description: Renamed Condition E
Action 3.6.3.E	Containment Isolation Valves (Atmospheric and Dual) Change Description: Renamed Condition F
Action 3.6.3.E Bases	Containment Isolation Valves (Atmospheric and Dual) Change Description: Renamed Condition F
Action 3.6.3.F	Containment Isolation Valves (Atmospheric and Dual) Change Description: Renamed Condition G
Action 3.6.3.F Bases	Containment Isolation Valves (Atmospheric and Dual) Change Description: Renamed Condition G
SR 3.6.3.1 Bases	Containment Isolation Valves (Atmospheric and Dual)
SR 3.6.3.6 Bases	Containment Isolation Valves (Atmospheric and Dual)
SR 3.6.3.9 Bases	Containment Isolation Valves (Atmospheric and Dual)

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2.0 Proposed Change

The proposed change allows 7 days, vice 72 hours, to isolate an inoperable containment isolation valve. It adds a new Condition A for those components which retain the 72 hour Completion Time and revises the existing Conditions A and C (now B and D) to provide for a 7 day Completion Time.

3.0 Background

The CEOG Joint Applications Report (JAR) NPSD-1168 provides a risk-informed technical basis for specific changes to Technical Specification Completion Times (CTs) of Specification 3.6.3, Containment Isolation Valves (Atmospheric and Dual) in NUREG 1432. The primary intent of the proposed change is to provide for the potential of on-line maintenance, repair and testing of a Containment Isolation Valve (CIV) that is declared inoperable during operation in the applicable MODES (MODES 1, 2, 3 and 4). These changes are warranted based on the low risk associated with the extended CTs and the relatively greater risk associated with transitioning from the existing MODE to cold shutdown (MODE 5).

This application is being pursued by the CEOG as a risk informed plant modification in accordance with NRC Regulatory Guides 1.174 and 1.177. As stated in NPSD-1168 and the NRC Safety Evaluation (SE), all plants that adopt these changes will implement a Configuration Risk Management Program (CRMP) to provide risk informed maintenance controls. However, the NRC SE associated with NPSD-1168 was issued prior to the changes associated with 10 CFR 50.65(a)(4) becoming effective. (The NRC SE for NPSD-1168 is dated 6/26/2000 and 10 CFR 50.65(a)(4) became effective on 11/28/2000.) With the implementation of 10 CFR 50.65(a)(4), licensees are required to assess and manage the risk that may result from proposed maintenance activities. The activities necessary for implementation of 50.65(a)(4) satisfy the condition in the NRC SE for implementing a CRMP and supercede the need for a separate program.

To expedite the review process, the JAR provides, where appropriate, generic bounding risk assessments of the impact of adopting these TS changes. The risk calculations included in this evaluation consider all significant impacts of CIV TS modification, including:

- Assessment of the Incremental Conditional Core Damage Probability (ICCDP) and Incremental Conditional Large Early Release Probability (ICLERP) resulting from allowing CIVs to remain in the OPEN position for the duration of the Completion Time.
- For systems with CIVs that are connected to the RCS, ICCDP/ICLERP assessments include consideration of Interfacing System LOCA (ISLOCA).
- Assessment of Incremental Conditional Core Damage Probability (ICCDP) associated with retaining valves, which have a safety function (in addition to containment isolation), in the closed position for an extended time.

Risk evaluations also include explicit consideration of incremental risks associated with CIVs connected to systems containing non-seismically qualified piping. All risk assessments consider the effect of maintaining the CIV in an open position

In accordance with Regulatory Guide 1.177, risks associated with a single Completion Time are evaluated against the "very small risk" metrics of 5.0E-7 for ICCDP and 5.0E-8 for ICLERP. The cumulative impact of multiple simultaneous and sequential entries into the Condition are also considered.

The supporting/analytical material contained within the JAR is considered applicable to all CE NSSS designed units of the CEOG member utilities regardless of the details of the valve actuators.

4.0 Technical Analysis

The CEOG Joint Applications Report developed a process for evaluating plant risk associated with the proposed changes to the CIV Technical Specification CT. The process involves grouping the various containment penetrations into defined classes. For each class, the containment penetrations are further sub-divided into generic type of configurations. An evaluation is then performed for each of the generic configurations of containment penetration to assess the impact on plant risk due to the proposed CT extension for the associated CIVs. The evaluation of the impact on plant risk determines the change in core damage frequency (ΔCDF), the incremental conditional core damage probability (ICCDP), the change in large early release frequency (ΔLERF) and the incremental conditional large early release probability (ICLERP).

The results of the evaluation in the CEOG Joint Applications Report demonstrate that the proposed CT extension provides plant operational flexibility while simultaneously allowing plant operation with an acceptable level of risk. The results demonstrate that the risk level associated with the proposed CT is below the guidelines set forth in Regulatory Guide 1.174.

Conditions of Implementation

The NRC Safety Evaluation, dated June 26, 2000, which approved the CEOG Joint Applications Report contained a number of conditions on the use of the report. They are:

1. Individual licensees requesting CIV Completion Time relaxations should state in their plant-specific application that they have verified that the JAR results apply to their plant. Licensees should verify that the relaxed Completion Times will only apply to penetrations analyzed to meet the risk guidelines of Regulatory Guide 1.177 and fall within the 14 containment penetration configurations considered in the Joint Applications Report. Any other containment penetration configurations must be supported by a plant-specific analysis. Licensee submittals must retain the current Completion Times for the three configurations that were not analyzed in the Joint Applications Report: containment sump supply valves to the ECCS and containment spray systems pumps, valves associated with the main feedwater system, and main steam isolation valves.)

2. Licensees should provide sufficient quantitative or qualitative substantiation to demonstrate that external events will not affect the results of the analysis supporting the extended Completion Times.

3. Licensees should state that they have verified acceptable PRA quality as described in Regulatory Guide 1.177.

4. Licensees should require verification of the operability of the remaining CIV(s) in a penetration flow path before entering the extended Completion Time for corrective maintenance. The Joint Applications Report assumes that the penetrations remain physically intact in MODES in which these valves are to be operable during corrective maintenance. Licensees should describe in their plant specific application how the affected penetration will remain physically intake, or state that the penetration will be isolated so as to not permit a release to the outside environment.

5.0 Regulatory Analysis

5.1 Determination of No Significant Hazards Consideration

The TSTF has evaluated whether or not a significant hazards consideration is involved with the proposed generic change by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

   Response: No.

   The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated. The proposed change revises the Completion Time for an inoperable containment isolation valve within the scope of the CEOG Joint Application Report CE-NPSD-1168 from 72 hours to 7 days. Containment isolation valves are not accident initiators in any accident previously evaluated. Consequently, the probability of an accident previously evaluated is not significantly increased.

   Containment isolation valves (CIV's), individually and in combination, control the extent of leakage from the containment following an accident. The proposed CT extension applies to the reduction in redundancy in the containment isolation function by the CIV's for a limited period of time but do not alter the ability of the plant to meet the overall containment leakage requirements. In order to evaluate the proposed CT extension a probabilistic risk assessment evaluation was performed in CEOG Joint Application Report CE-NPSD-1168. The risk assessment concluded that, based on the use of bounding risk parameters for CE-designed plants, the proposed increase in the CIV CT from four hours to seven days does not alter the ability of the plant to meet the overall containment leakage requirements. It also concluded that the proposed change does not result in an unacceptable incremental conditional core damage probability or incremental conditional large early release probability according to the guidelines of Regulatory Guide 1.177. As a result, there would be no significant increase in the consequences of an accident previously evaluated. Therefore, the proposed change does not involve a significant 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?

   Response: No.

   The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated. The change revises the allowed outage time for an inoperable containment isolation valve within the scope of the CEOG Joint Application Report CE-NPSD-1168 from 72 hours to 7 days. Containment isolation valves, individually and in combination, control the extent of leakage from the containment following an accident. The proposed CT extension applies to the reduction in redundancy in the containment isolation function by the CIV's for a limited period of time but do not alter the ability of the plant to meet the overall containment leakage requirements. The proposed change does not change the design, configuration, or method of operation of the plant. The proposed change does not involve a physical alteration of the plant (no new of different type of equipment will be installed). Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

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

   Response: No.

   The proposed change does not involve a significant reduction in a margin of safety. The proposed change revises the Completion Time for an inoperable containment isolation valve within the scope of the CEOG Joint Application Report CE-NPSD-1168 from 72 hours to 7 days. Containment isolation valves, individually and in combination, control the extent of leakage from the containment following an accident. The proposed CT extension applies to the reduction in redundancy in the containment isolation function by the CIV's for a limited period of time but do not alter the ability of the plant to meet the overall containment leakage requirements. In order to evaluate the proposed CT extension a probabilistic risk assessment evaluation was performed in CEOG Joint Application Report CE-NPSD-1168. The risk assessment concluded that, based on the use of bounding risk parameters for CE-designed plants, the proposed increase in the CIV CT from four hours to seven days does not alter the ability of the plant to meet the overall containment leakage requirements. It also concluded that the proposed change does not result in an unacceptable incremental conditional core damage probability or incremental conditional large early release probability according to the guidelines of Regulatory Guide 1.177. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, the TSTF concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

5.1 Applicable Regulatory Requirements / Criteria

The proposed change increases a Completion Time for an inoperable containment isolation valve. Completion Times are not dictated by or relied on by any regulatory requirement, but are used to minimize the time that regulatory requirements, especially those regarding single failure protection, cannot be met.

The design of the applicable plants are not changed and single failure protection is still a design requirement. However, the proposed change extends the limited time during which single failure protection for a containment penetration is relaxed.

The analysis presented in CE-NPSD-1168 demonstrates that the extension of the Completion Time is acceptable.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the approval of the proposed change will not be inimical to the common defense and security or to the health and safety of the public

6.0 Environmental Consideration

A review has determined that the proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

7.0 References

1. Combustion Engineering Owners Group (CEOG) Joint Applications Report (JAR) CE-NPSD-1168, Joint Applications Report for Containment Isolation Valve AOT Extension, dated June 1999.
2. NRC Safety Evaluation for CEOG Joint Applications Report CE-NPSD-1168, "JAR for CIV AOT Extension," dated June 26, 2000.

TSTF-373, Rev. 1

3.6 CONTAINMENT SYSTEMS

3.6.3 Containment Isolation Valves (Atmospheric and Dual)

LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

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

Insert 1

ACTIONS

- NOTES -

1. Penetration flow paths [except for [42] inch purge valve penetration flow paths] may be unisolated intermittently under administrative controls.
2. Separate Condition entry is allowed for each penetration flow path.
3. Enter applicable Conditions and Required Actions for system(s) made inoperable by containment isolation valves.
4. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A B **- NOTE -** Only applicable to penetration flow paths with two [or more] containment isolation valves.	A B 1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.	~~4 hours~~ [7 days]
One or more penetration flow paths with one containment isolation valve inoperable [for reasons other than Condition[s] A D [and E]].	AND	

INSERT 1

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ----------NOTE---------- Only applicable to the [containment sump supply valves to the ECCS and containment spray pumps]. ---------- One or more penetration flow paths with one containment isolation valve inoperable.	A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.	72 hours
	AND	
	A.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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A 2 B **- NOTES -** 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured 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

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~B~~ C ---------- **- NOTE -** Only applicable to penetration flow paths with two [or more] containment isolation valves. ---------- One or more penetration flow paths with two [or more] containment isolation valves inoperable [for reasons other than Condition[s] D [and E]].	~~B~~ 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.	1 hour
~~C~~ D ---------- **- 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~~ 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	[72] ~~hours~~ [7 days]

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	C.2 (D) ---------- **- NOTES -** 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ---------- Verify the affected penetration flow path is isolated.	Once per 31 days
D. (E) [One or more secondary containment bypass leakage [or purge valve leakage] not within limit.	D.1 (E) Restore leakage within limit.	4 hours for secondary containment bypass leakage <u>AND</u> 24 hours for purge valve leakage]
E. (F) [One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.	E.1 (F) 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]. <u>AND</u>	24 hours

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	E.2 F **- NOTES -** 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured 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 F Perform SR 3.6.3.6 for the resilient seal purge valves closed to comply with Required Action E.1.	Once per [ ] days]
F. G Required Action and associated Completion Time not met.	F.1 G Be in MODE 3.	6 hours
	AND	
	F.2 G Be in MODE 5.	36 hours

BASES

ACTIONS (continued)

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

A fourth Note has been added that requires entry into the applicable Conditions and Required Actions of LCO 3.6.1 when leakage results in exceeding the overall containment leakage limit.

Insert 3

A.1 and A.2 B

Condition A, and/or

Insert 2

In the event one containment isolation valve in one or more penetration flow paths is inoperable, [except for purge valve leakage and shield building bypass leakage not within limit], 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 penetrations 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 the 4 hour Completion Time. 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. (Refs 3 and 4)

B B

[7 days]

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

B

INSERT 2

---------- Reviewer's Note ----------

Adoption of the 7 day Completion Time is contingent on the conditions identified in Reference 4.

INSERT 3

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 penetrations 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 the 72 hour Completion Time. The 72 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 (Refs. 4 and 5).

For affected penetration flow paths that cannot be restored to OPERABLE status within the 72 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 [the containment sump supply valves to the ECCS and containment spray pumps].

---------- Reviewer's Note ----------
Condition A is only applicable to the containment sump supply valves to the ECCS and containment spray pumps that meet the conditions described in References 3 and 4. Another applicable Condition must be applied to any of the containment sump supply valves to the ECCS and containment spray pumps which do not meet the conditions described in References 3 and 4.

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.

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ACTIONS (continued)

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 [or more] containment isolation valves. For penetration flow paths with only one containment isolation valve and a closed system, Condition C provides appropriate actions.

Required Action A.2 is modified by two Notes. Note 1 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. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned. 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 [or more] containment isolation valves in one or more penetration flow paths inoperable, [except for purge valve leakage and shield building bypass leakage not within limit], 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

BASES

ACTIONS (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 [or more] 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 Insert 4

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 [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 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.

[7 day]

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 Reference 3. 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 two Notes. Note 1 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

INSERT 4

---------- Reviewer's Note ----------

The 7 day Completion Time for Required Action D.1 is only applicable to the containment isolation valves that meet the conditions in References 3 and 4. For any containment isolation valves meeting Condition D and not meeting the conditions of References 3 and 4, a 72 hour Completion Time is applied.

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ACTIONS (continued)

areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

[D.1 E

With the secondary containment bypass leakage rate (SR 3.6.3.9) [or purge valve leakage rate (SR 3.6.3.6)] not within limit, the assumptions of the safety analysis are not met. Therefore, the leakage must be restored to within limit. Restoration can be accomplished by isolating the penetration(s) 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 to be the lesser actual pathway leakage of the two devices. The 4 hour Completion Time for secondary containment bypass leakage is reasonable considering the time required to restore the leakage by isolating the penetration(s) and the relative importance of secondary containment bypass leakage to the overall containment function. [The 24 hour Completion Time for purge valve leakage is acceptable considering the purge valves remain closed so that a gross breach of containment does not exist.]

- REVIEWER'S NOTE - E

[The bracketed options provided in ACTION D reflect options in plant design and options in adopting the associated leakage rate Surveillances.

The options (in both ACTION D E and ACTION E F for purge valve leakage, are based primarily on the design - if leakage rates can be measured F separately for each purge valve, ACTION E is intended to apply. This would be required to be able to implement Required Action E.3. Should the design allow only for leak testing both purge valves simultaneously, E then the Completion Time for ACTION D should include the "24 hours for purge valve leakage" and ACTION E should be eliminated.]]

F

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ACTIONS (continued)

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

In the event one or more containment purge valves in one or more penetration flow paths are not within the purge valve leakage limits, purge valve leakage must be restored to within limits, or the affected penetration must be isolated. The method of isolation must be by 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 with resilient seals, a closed manual valve with resilient seals, or a blind flange]. A purge valve with resilient seals utilized to satisfy Required Action E.1 must have been demonstrated to meet the leakage requirements of SR 3.6.3.6. The specified Completion Time is reasonable, considering that one containment purge valve remains closed so that a gross breach of containment does not exist.

In accordance with Required Action E.2, this penetration flow path must be verified to be isolated on a periodic basis. The periodic verification is necessary to ensure that containment penetrations required to be isolated following an accident, which are 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 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 3.6.3.6 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. 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.

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BASES

ACTIONS (continued)

Required Action F.2 is modified by two Notes. Note 1 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. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned.]

G

C.1 and C.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 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. 5), 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.]

7

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.4

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 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. 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 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, 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 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 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, Option [A][B], (Ref. 6), 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

BASES

SURVEILLANCE REQUIREMENTS (continued)

(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~~. 6)

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 3.6.3.7

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 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 [recently] irradiated fuel assemblies), pressurization concerns are not present, thus the purge valves can be

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SURVEILLANCE REQUIREMENTS (continued)

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 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. The Frequency is required by the Containment Leakage Rate Testing Program. This SR simply imposes additional acceptance criteria.

Editorial correction

[Bypass leakage is considered part of L_a.]

~~REVIEWER'S NOTE~~

[Unless specifically exempted.]]

REFERENCES

1. FSAR, Section [ ].
2. FSAR, Section [ ].
5. ~~3.~~ Standard Review Plan 6.2.4.
6. ~~4.~~ Generic Issue B-20.
7. ~~5.~~ Generic Issue B-24.
8. ~~6.~~ 10 CFR 50, Appendix J, Option [A][B].

Insert 5

INSERT 5

3. Combustion Engineering Owners Group (CEOG) Joint Applications Report (JAR) CE-NPSD-1168, Joint Applications Report for Containment Isolation Valve AOT Extension, dated June 1999.

4. NRC Safety Evaluation for CEOG Joint Applications Report CE-NPSD-1168, "JAR for CIV AOT Extension," dated June 26, 2000.