TSTF
TECHNICAL SPECIFICATIONS TASK FORCE
A JOINT OWNERS GROUP ACTIVITY

September 21, 2005 TSTF-05-15

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

SUBJECT: TSTF-454, Revision 1, "Extend PCIV Completion Times (NEDC-33046)"

Dear Sir or Madam:

Enclosed for NRC review is Revision 1 of TSTF-454, "Extend PCIV Completion Times (NEDC-33046)." Revision 1 changes the Traveler to reflect the NRC's approval of the supporting Topical Report, NEDC-33046-A, "Technical Justification to Support Risk-Informed Primary Containment Isolation Valve AOT Extension for BWR Plants."

Any NRC review fees associated with the review of TSTF-454, Revision 1 should be billed to the Boiling Water Reactors Owners Group.

Should you have any questions, please do not hesitate to contact us.

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Enclosure

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Technical Specification Task Force
Improved Standard Technical Specifications Change Traveler

Extend PCIV Completion Times (NEDC-33046)

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

Classification: 1) Technical Change Recommended for CLIIP?: Yes

Correction or Improvement: Improvement NRC Fee Status: Exempt

Benefit: Provides Longer Completion Time

Industry Contact: Mike Crowthers, (610) 774-7766, mhcrowthers@pplweb.com

See attached.

Revision History

OG Revision 0 Revision Status: Closed

Revision Proposed by: BWROG

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 23-Jul-03

Owners Group Comments:
(No Comments)

Owners Group Resolution: Approved Date: 04-Aug-03

TSTF Review Information

TSTF Received Date: 05-Aug-03 Date Distributed for Review: 05-Aug-03

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

TSTF Comments:
(No Comments)

TSTF Resolution: Approved Date: 04-Sep-03

NRC Review Information

NRC Received Date: 05-Sep-03

NRC Comments: Date of NRC Letter: 25-May-05

5/25/05 -NRC issues Notice for Comment.
7/25/05 - TSTF supplied comments.
8/12/05 - TSTF revises Traveler to reflect final version of Topical report.

Final Resolution: Superceded by Revision

TSTF Revision 1 Revision Status: Active

Revision Proposed by: TSTF

Revision Description:
TSTF-454 is revised to incorporate changes made to the supporting Topical Report as reflected in the approved version, NEDC-33046-A, January 2005.

1. The title of the Traveler was revised from "Increase PCIV Completion Times from 4 hours, 24 hours, and 72 hours to 7 days (NEDC-33046)" to "Increase PCIV Completion Times (NEDC-33046)."

2. References to changing a 24 hour Completion Time were eliminated from the justification. Changes to the 24 hour purge valve Completion Time were eliminated from the Topical Report and were not included in the Revision 0 of the Traveler.

3. The approved version of the Topical Report is referenced in the justification and the Bases.

4. The Bases inserts and the justification contained a placeholder for any conditions in the Safety Evaluation. The placeholders were eliminated and a statement is substituted that use of the extended Completion Times is contingent on adoption of the Topical Report, including any conditions described in the included Safety Evaluation.

5. The No Significant Hazards Consideration was revised to be more consistent with other Travelers.

6. The ISTS Revision 2 marked up pages were replaced with pages from Revision 3 of the ISTS. This did not result in any changes to the Traveler.

TSTF Review Information

TSTF Received Date: 12-Aug-05 Date Distributed for Review: 28-Aug-05

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

TSTF Comments:
(No Comments)

TSTF Resolution: Approved Date: 21-Sep-05

NRC Review Information

NRC Received Date: 21-Sep-05

Affected Technical Specifications

Ref. 3.6.1.3 Bases	PCIVs	
Ref. 3.6.1.3 Bases	PCIVs	NUREG(s)- 1433 Only
Action 3.6.1.3.A	PCIVs	NUREG(s)- 1433 Only

Action 3.6.1.3.A Bases	PCIVs	NUREG(s)- 1433 Only
Action 3.6.1.3.C	PCIVs	NUREG(s)- 1433 Only
Action 3.6.1.3.C Bases	PCIVs	NUREG(s)- 1433 Only
Action 3.6.1.3.D	PCIVs	NUREG(s)- 1433 Only
Action 3.6.1.3.D Bases	PCIVs	NUREG(s)- 1433 Only
SR 3.6.1.3.1 Bases	PCIVs	NUREG(s)- 1433 Only
SR 3.6.1.3.7 Bases	PCIVs	NUREG(s)- 1433 Only
SR 3.6.1.3.10 Bases	PCIVs	NUREG(s)- 1433 Only
SR 3.6.1.3.12 Bases	PCIVs	NUREG(s)- 1433 Only
SR 3.6.1.3.13 Bases	PCIVs	NUREG(s)- 1433 Only
SR 3.6.1.3.15 Bases	PCIVs	NUREG(s)- 1433 Only
Action 3.6.1.3.A	PCIVs	NUREG(s)- 1434 Only
Action 3.6.1.3.A Bases	PCIVs	NUREG(s)- 1434 Only
Action 3.6.1.3.C	PCIVs	NUREG(s)- 1434 Only
Action 3.6.1.3.C Bases	PCIVs	NUREG(s)- 1434 Only
SR 3.6.1.3.6 Bases	PCIVs	NUREG(s)- 1434 Only

1.0 Description

This change extends the Completion Times for primary containment penetration flow paths with one primary containment isolation valve (PCIV) inoperable from 4 hours and 72 hours to 7 days. This change is applicable to primary containment penetrations with two [or more] PCIVs and to primary containment penetrations with only one PCIV. This change is not applicable to the Feedwater Isolation Valves, the Main Steam Isolation Valves, the PCIVs for the Residual Heat Removal (RHR) shutdown cooling suction line, and (for BWR 5 and BWR 6 designs only) the PCIVs for the Low Pressure Core Spray System.

2.0 Proposed Change

The proposed change allows 7 days, versus 4 hours or 72 hours, to restore an inoperable PCIV (or isolate the affected penetration) based on the evaluations in NEDC-33046-A, "Technical Justification to Support Risk-Informed Primary Containment Isolation Valve AOT Extensions for BWR Plants," dated January 2005. The specific changes are provided below.

For the Condition of one or more penetration flow paths with one PCIV inoperable in a penetration flow path with two [or more] PCIVs, the Completion Times for isolating the affected penetration (in Standard Technical Specification (STS) 3.6.1.3 Required Action A.1) are revised from "4 hours except for main steam line AND 8 hours for main steam line" to "4 hours [for feedwater isolation valves (FWIVs), residual heat removal (RHR) shutdown cooling suction line PCIVs, and *Low Pressure Core Spray (LPCS) System PCIVs {NUREG 1434 only}*] AND 8 hours for main steam isolation valves (MSIVs) AND [7 days except for FWIVs, RHR shutdown cooling suction line PCIVs, *LPCS System PCIVs {NUREG 1434 only}*, and MSIVs.]" For PCIVs not analyzed in NEDC-33046-A (i.e., FWIVs and MSIVs), the current Completion Times of 4 hours and 8 hours of STS 3.6.1.3 Required Action A.1 are maintained; 4 hours for FWIVs and 8 hours for main steam lines (i.e., MSIVs as described in the current Bases for STS 3.6.1.3 Required Action A.1). For PCIVs analyzed in NEDC-33046-A that did not meet the criterion for extension (i.e., RHR shutdown cooling suction line PCIVs (for all BWRs) and LPCS System PCIVs (for BWR 5 and BWR 6 designs only), the current Completion Time of 4 hours of STS 3.6.1.3 Required Action A.1 is maintained. The Completion Time for other PCIVs, associated with penetrations with two [or more] PCIVs, is extended to 7 days.

For the Condition of one or more penetration flow paths with one PCIV inoperable in a penetration flow path with only one PCIV, the Completion Times for isolating the affected penetration (STS 3.6.1.3 Required Action C.1) are revised from "[4] hours except for excess flow check valves (EFCVs) and penetrations with a closed system AND 72 hours for EFCVs and penetrations with a closed system" to "[4] hours except for excess flow check valves (EFCVs) and penetrations with a closed system AND [7 days] for EFCVs and penetrations with a closed system." *{For NUREG 1434, the Completion Times for STS 3.6.1.3 Required Action C.1 are revised from "[4] hours except for penetrations with a closed system AND 72 hours for penetrations with a closed system" to "[4] hours except for penetrations with a closed system AND [7 days] for penetrations with a closed system."}*

For the Condition of one or more [secondary containment bypass leakage rate,][MSIV leakage rate,][purge valve leakage rate,][hydrostatically tested line leakage rate,][or][EFCV leakage rate] not within limit, the Completion Time for restoring leakage rate to within limit, when the leakage rate exceeded is the EFCV leakage rate (in STS 3.6.1.3 Required Action D.1), is revised from "[72 hours]" to "[7 days]" by adding a new Completion Time, "[AND 7 days for EFCV leakage]." *{The EFCV leakage rate Completion Time change is not applicable to NUREG 1434.}*

Corresponding changes have been made to the respective Bases to reflect the changes made to the Technical Specifications.

3.0 Background

The Boiling Water Reactor Owners' Group (BWROG) Topical Report NEDC-33046-A provides a risk-informed technical basis for specific changes to Technical Specification Completion Times of STS 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," in NUREG 1433 and NUREG 1434. The primary intent of the proposed change is to provide for the potential of on-line maintenance, repair, and testing of a PCIV that is declared inoperable during operation in the applicable MODES. These changes are warranted based on the low risk associated with the extended Completion Times and the relatively greater risk associated with transitioning from the existing MODE to cold shutdown (MODE 4).

This application is being pursued by the BWROG as a risk-informed plant modification in accordance with NRC Regulatory Guides 1.174 and 1.177. Risk-informed cumulative unavailability targets for PCIVs are already established within the scope of the Maintenance Rule.

To expedite the review process, NEDC-33046-A provides, where appropriate, generic bounding risk assessments of the impact of adopting these Technical Specification changes. The risk calculations included in this evaluation consider all significant impacts of PCIV Technical Specification modifications, including:

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

Risk evaluations also include explicit consideration of incremental risks associated with PCIVs connected to systems containing non-seismically qualified piping. All risk assessments consider the effect of maintaining the PCIV in the 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 Conditions are also considered.

The supporting and analytical material contained within NEDC-33046-A is considered applicable to all General Electric Boiling Water Reactor units of the BWROG member utilities regardless of the details of the valve actuators.

4.0 Technical Analysis

NEDC-33046-A documented the process used for evaluating plant risk associated with the proposed changes to the PCIV Technical Specification Completion Times. The process involves grouping the various primary containment penetrations into defined classes. For each class, the primary containment penetrations are further subdivided into generic type configurations. An evaluation is then performed for each of the generic configurations of the primary containment penetrations to assess the impact on plant risk due to the proposed Completion Time extensions for the associated PCIVs. The evaluation of the impact on plant risk determines the change in core damage frequency (Δ CDF), the ICCDP, the change in large early release frequency (Δ LERF), and the ICLERP.

The results of the evaluations in NEDC-33046-A demonstrate that the proposed Completion Time extensions provide 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 Completion Time is below the guidelines set forth in Regulatory Guides 1.174 and 1.177.

Adoption of this Traveler is contingent on the adoption of NEDC-33046-A, including the conditions described in the incorporated NRC Safety Evaluation.

5.0 Regulatory Analysis

5.1 No Significant Hazards Consideration

The TSTF has evaluated whether or not a significant hazards consideration is involved with the proposed generic changes 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 changes revise the Completion Times for restoring an inoperable primary containment isolation valve (PCIV) (or isolating the affected penetration) within the scope of Topical Report NEDC-33046-A, "Technical Justification to Support Risk-Informed Primary Containment Isolation Valve AOT Extensions for BWR Plants," transmitted to the NRC by letter dated January 20, 2005, from 4 hours and 72 hours to 7 days. PCIVs are not accident initiators in any accident previously evaluated. Consequently, the probability of an accident previously evaluated is not significantly increased. PCIVs, individually and in combination, control the extent of leakage from the primary containment following an accident. As such, PCIVs are instrumental in controlling the consequences of an accident. However, the consequences of any accident previously evaluation are no different during the proposed extended Completion Times than during the existing Completion Times. As a result, the consequences of any accident previously evaluated are not significantly increased. Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

   Response: No.

   The proposed changes revise the Completion Times for restoring an inoperable PCIV (or isolating the affected penetration) within the scope of Topical Report NEDC-33046-A, transmitted to the NRC by letter dated January 20, 2005, from 4 hours and 72 hours to 7 days. PCIVs, individually and in combination, control the extent of leakage from the primary containment following an accident. The proposed Completion Time extensions apply to the reduction in redundancy in the primary containment isolation function provided by the PCIVs for a limited period of time, but do not alter the ability of the plant to meet the overall primary containment leakage requirements. The proposed changes do not change the design, configuration, or method of operation of the plant. The proposed changes do not involve a physical alteration of the plant (no new or different kind of equipment will be installed). Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   Response: No.

   The proposed changes revise the Completion Times for restoring an inoperable PCIV (or isolating the affected penetration) within the scope of Topical Report NEDC-33046-A, transmitted to the NRC by letter dated January 20, 2005, from 4 hours and 72 hours to 7 days. PCIVs, individually and in combination, control the extent of leakage from the primary containment following an accident. The proposed Completion Time extensions apply to the reduction in redundancy in the primary containment isolation function provided by the PCIVs for a limited period of time, but do not alter the ability of the plant to meet the overall primary containment leakage requirements. In order to evaluate the proposed Completion Time extensions, a probabilistic risk evaluation was performed as documented in Topical Report NEDC-33046-A. The risk evaluation concluded that, based on the use of bounding risk parameters for General Electric designed plants, the proposed increase in the PCIV Completion Times from 4 hours and 72 hours to 7 days for the analyzed PCIVs 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 changes do not involve a significant reduction in a margin of safety.

Based on the above, the TSTF concludes that the proposed changes present 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.

5.2 Applicable Regulatory Requirements/Criteria

Appendix A of 10 CFR Part 50 - General Design Criterion (GDC) 55, "Reactor Coolant Pressure Boundary Penetrating Containment," requires that each line that is part of the reactor coolant pressure boundary and that penetrates primary containment shall be provided with containment isolation valves.

Appendix A of 10 CFR 50 - GDC 56, "Primary Containment Isolation," requires that each line that connects directly to the containment atmosphere and penetrates primary reactor containment shall be provided with containment isolation valves.

The Maintenance Rule, 10 CFR 50.65(a)(4), as it relates to the proposed changes, requires the assessment and management of the increase in risk that may result from a proposed maintenance activity.

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

The proposed change does not affect plant compliance with these regulations.

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 changes would change requirements 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 changes do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed changes meet 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 changes.

7.0 Reference

1. BWROG Topical Report NEDC-33046-A, "Technical Justification to Support Risk-Informed Primary Containment Isolation Valve AOT Extensions for BWR Plants," transmitted to the NRC in a letter dated January 20, 2005.

3.6 CONTAINMENT SYSTEMS

3.6.1.3 *Primary Containment Isolation Valves (PCIVs)*

LCO 3.6.1.3 Each PCIV, except reactor building-to-suppression chamber vacuum breakers, shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
When associated instrumentation is required to be OPERABLE per LCO 3.3.6.1, "*Primary Containment Isolation Instrumentation.*"

ACTIONS

----------NOTES----------

1. *Penetration flow paths [except for 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 systems made inoperable by PCIVs.*
4. Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when PCIV leakage results in exceeding overall containment leakage rate acceptance criteria in MODES 1, 2, and 3.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ----------NOTE---------- Only applicable to penetration flow paths with two [or more] PCIVs. ---------- One or more penetration flow paths with one PCIV inoperable [for reasons other than Condition[s] D [and E]].	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. AND	4 hours except for main steam line AND 8 hours for main steam line Insert 1

Insert 1

4 hours [for feedwater isolation valves (FWIVs) and residual heat removal (RHR) shutdown cooling suction line PCIVs]

AND

8 hours for main steam isolation valves (MSIVs)

[AND

7 days except for FWIVs, RHR shutdown cooling suction line PCIVs, and MSIVs]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. ----------NOTE---------- Only applicable to penetration flow paths with two [or more] PCIVs. ---------- One or more penetration flow paths with two [or more] PCIVs inoperable [for reasons other than Condition[s] D [and E]].	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 [for reasons other than Condition[s] D [and E]].	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	[4] hours except for excess flow check valves (EFCVs) and penetrations with a closed system AND ~~72 hours~~ [7 days] for EFCVs and penetrations with a closed system

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. [One or more [secondary containment bypass leakage rate,] [MSIV leakage rate,] [purge valve leakage rate,] [hydrostatically tested line leakage rate,] [or] [EFCV leakage rate] not within limit.	D.1 Restore leakage rate to within limit.	[4 hours for hydrostatically tested line leakage [not on a closed system]] AND [4 hours for secondary containment bypass leakage] AND [8 hours for MSIV leakage] AND [24 hours for purge valve leakage] AND [72 hours for hydrostatically tested line leakage [on a closed system] [and EFCV leakage]]
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

Insert 2

Insert 2

[AND

7 days for EFCV leakage]

BASES

ACTIONS (continued)

A.1 and A.2

With one or more penetration flow paths with one PCIV inoperable, [except for secondary containment bypass leakage rate, MSIV leakage rate, purge valve leakage rate, or hydrostatically tested line leakage rate or EFCV leakage rate not within limit], the affected penetration flow paths 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, a blind flange, and a check valve with flow through the valve secured. For a penetration isolated in accordance with Required Action A.1, the device used to isolate the penetration should be the closest available valve to the primary containment. The Required Action must be completed within the 4 hour Completion Time (8 hours for main steam lines). The Completion Time of 4 hours is reasonable considering the time required to isolate the penetration and the relative importance of supporting primary containment OPERABILITY during MODES 1, 2, and 3. For main steam lines, an 8 hour Completion Time is allowed. The Completion Time of 8 hours for the main steam lines allows a period of time to restore the MSIVs to OPERABLE status given the fact that MSIV closure will result in isolation of the main steam line(s) and a potential for plant shutdown.

specified

Insert 3

affected

MSIVs

Insert 4

For affected penetrations that have been isolated in accordance with Required Action A.1, the affected penetration flow path(s) must be verified to be isolated on a periodic basis. This is necessary to ensure that primary containment penetrations required to be isolated following an accident, and no longer capable of being automatically isolated, will be in the isolation position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification that those devices outside containment and capable of potentially being mispositioned are in the correct position. The Completion Time of "once per 31 days for isolation devices outside primary containment" is appropriate because the devices are operated under administrative controls and the probability of their misalignment is low. For the devices inside primary containment, the time period specified "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 based on engineering judgment and is considered reasonable in view of the inaccessibility of the devices and other administrative controls ensuring that device misalignment is an unlikely possibility.

Insert 3

(4 hours for [feedwater isolation valves (FWIVs) and residual heat removal (RHR) shutdown cooling suction line PCIVs]; 8 hours for MSIVs; [and 7 days for other PCIVs in primary containment penetration flow paths with two [or more] PCIVs]). For [FWIVs and RHR shutdown cooling suction line PCIVs], a 4 hour Completion Time is allowed.

Insert 4

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

The 7 day Completion Time is only allowed for those plants which adopt NEDC-33046-A, "Technical Justification to Support Risk-Informed Primary Containment Isolation Valve AOT Extensions for BWR Plants," dated January 2005, including the conditions described in the incorporated Safety Evaluation.

Otherwise, a 4 hour Completion Time must be maintained for PCIVs other than MSIVs.

[For other PCIVs in primary containment penetration flow paths with two [or more] PCIVs, a 7 day Completion Time is allowed. The Completion Time of 7 days provides the capability for on-line maintenance, repair, and testing of a PCIV and is reasonable considering the relative importance of supporting primary containment OPERABILITY in MODES 1, 2, and 3 (Ref. 3).]

BASES

ACTIONS (continued)

C.1 and C.2

With one or more penetration flow paths with one PCIV inoperable, [except for secondary containment bypass leakage rate, MSIV leakage rate, purge valve leakage rate, or hydrostatically tested line leakage rate or EFCV leakage rate not within limit,] 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.

Insert 5 →

---REVIEWER'S NOTE---

The [4] hour Completion Time is left as 4 hours consistent with the Completion Time of Required Action A.1 for most penetrations; or a plant specific evaluation is provided for NRC review for cases other than for closed system penetrations and EFCVs (which have been reviewed and approved for 72 hours). If all penetrations are accepted for 72 hours, the Completion Time is simplified to state 72 hours.

The Completion Time of [4] hours is reasonable considering the time required to isolate the penetration and the relative importance of supporting primary containment OPERABILITY during MODES 1, 2, and 3. [The Completion Time of 72 hours for penetrations with a closed system 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. The closed system must meet the requirements of Reference 6. The Completion Time of 72 hours for EFCVs is also 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.

6 →

Insert 6 →

Insert 5

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

The 7 day Completion Time is only allowed for those plants which adopt NEDC-33046-A, including the conditions described in the incorporated Safety Evaluation. Otherwise, a 4 hour Completion Time is provided for most penetrations and a 72 hour Completion Time is provided for closed system penetrations and EFCVs (for cases other than closed system penetrations and EFCVs, if a plant specific evaluation is provided for NRC review and accepted for a Completion Time of 72 hours, the Completion Time may be simplified to state 72 hours).

Insert 6

[The Completion Time of 7 days, for EFCVs and penetrations with a closed system, provides the capability for on-line maintenance, repair, and testing of a PCIV and is reasonable considering the relative importance of supporting primary containment OPERABILITY in MODES 1, 2, and 3 (Ref. 3).]

BASES

ACTIONS (continued)

purge valve leakage is acceptable considering the purge valves remain closed so that a gross breach of the containment does not exist.] [The 72 hour Completion Time for hydrostatically tested line leakage [on a closed system] is acceptable based on the available water seal expected to remain as a gaseous fission product boundary during the accident, and the associated closed system.] [The 72 hour Completion Time for EFCV leakage is acceptable based on the instrument and the small pipe diameter of the penetration (hence, reliability) to act as a penetration isolation boundary.]

Insert 7

---REVIEWER'S NOTE---

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

The options (both in ACTION D and ACTION E) for purge valve leakage, are based primarily on the design. If leakage rates can be measured 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, then the Completion Time for ACTION D should include the "24 hours for purge valve leakage" and ACTION E should be eliminated.

The option for EFCV is based on the acceptance criteria of SR 3.6.1.3.10. If the acceptance criteria is a specific leakage rate (e.g., 1 gph) then the Completion Time for ACTION D should include the "72 hours for EFCV leakage." If the acceptance criteria for SR 3.6.1.3.10 is non-specific (e.g., "actuates to the closed position") then there is no specific leakage criteria and the EFCV Completion Time is not adopted.

Insert 8

1

Similarly, adopting Completion Times for secondary containment bypass and/or hydrostatically tested lines is based on whether the associated SRs are adopted.

The additional bracketed options for whether the hydrostatically tested line is with or without a closed system is predicated on plant-specific design. If the design is such that there are not both types of hydrostatically tested lines (some with and some without closed systems), the specific 'closed system' wording can be removed and the appropriate 4 or 72 hour Completion Time retained. In the event there are both types, the clarifying wording remains and the brackets are removed.]

Insert 9

Insert 7

[The 7 day Completion Time for EFCV leakage is acceptable based on the evaluations documented in Reference 3.]

Insert 8

or "7 days for EFCV leakage."

Insert 9

The 7 day Completion Time for restoration of EFCV leakage is only allowed for those plants that adopt NEDC-33046-A, including the conditions described in the incorporated Safety Evaluation. Otherwise, a 72 hour Completion Time is provided for the condition of EFCV leakage not within limits.

BASES

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.

(5)

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 handling of [recently] irradiated fuel), pressurization concerns are not present and the purge valves are allowed to be open.]]

BASES

SURVEILLANCE REQUIREMENTS (continued)

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, 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, Option [A][B] (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 once 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.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.10

----------REVIEWER'S NOTE----------
The Surveillance is only allowed for those plants for which NEDO-32977-A, "Excess Flow Check Valve Testing Relaxation," June 2000, is applicable. In addition, the licensee must develop EFCV performance criteria and basis to ensure that their corrective action program can provide meaningful feedback for appropriate corrective actions. The EFCV performance criteria and basis must be found acceptable by the technical staff. If required, an Inservice Testing Program relief request pursuant to 10 CFR 50.55a needs to be approved by the Technical Staff in order to implement this Surveillance. Otherwise, each EFCV shall be verified to actuate on an [18] month Frequency. The bracketed portions of these Bases apply to the representative sample as discussed in NEDO-32977-A.

This SR requires a demonstration that each [a representative sample of] reactor instrumentation line excess flow check valves (EFCV) is OPERABLE by verifying that the valve [reduces flow to ≤ 1 gph on a simulated instrument line break]. [The representative sample consists of an approximately equal number of EFCVs, such that each EFCV is tested at least once every 10 years (nominal). In addition, the EFCVs in the sample are representative of the various plant configurations, models, sizes and operating environments. This ensures that any potentially common problem with a specific type or application of EFCV is detected at the earliest possible time.]

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. [The nominal 10 year interval is based on performance testing as discussed in NEDO-32977-A, "Excess Flow Check Valve Testing Relaxation." Furthermore, any EFCV failures will be evaluated to determine if additional testing in that test interval is warranted to ensure overall reliability is maintained. Operating experience has demonstrated that these components are highly reliable and that failures to isolate are very infrequent. Therefore, testing of a representative sample was concluded to be acceptable from a reliability standpoint.]

BASES

SURVEILLANCE REQUIREMENTS (continued)

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 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. The Frequency is required by the Primary Containment Leakage Rate Testing Program. This SR simply imposes additional acceptance criteria. [This SR is modified by a Note that 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.]]

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.13

The analyses in References 1 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). A Note 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 the Primary Containment Leakage Rate Testing Program.

SR 3.6.1.3.14

Surveillance of hydrostatically tested lines provides assurance that the calculation assumptions of Reference 2 are met. The acceptance criteria for the combined leakage of all hydrostatically tested lines is [1.0 gpm times the total number of hydrostatically tested PCIVs] when tested at 1.1 P_a ([63.25] psig). The combined leakage rates must be demonstrated in accordance with the leakage rate test Frequency required by the Primary Containment Leakage Rate Testing Program.

[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 3, 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.

BASES

SURVEILLANCE REQUIREMENTS (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 times assumed in the analysis of References 1 and 8. [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].
Insert 10
4 → 8. 10 CFR 50, Appendix J, Option [A][B].
5 → A. Generic Issue B-24.
6 → 8. FSAR, Section 6.2.[ ].
7 → 6. FSAR, Section [15.1.39].
8 → 7. FSAR, Section [6.2].

Insert 10

3. NEDC-33046-A, "Technical Justification to Support Risk-Informed Primary Containment Isolation Valve AOT Extensions for BWR Plants," January 2005.

3.6 CONTAINMENT SYSTEMS

3.6.1.3 Primary Containment Isolation Valves (PCIVs)

LCO 3.6.1.3 Each PCIV shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
When associated instrumentation is required to be OPERABLE per LCO 3.3.6.1, "Primary Containment Isolation Instrumentation."

ACTIONS

----------NOTES----------

1. Penetration flow paths [except for [ ] 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 systems made inoperable by PCIVs.
4. Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when PCIV leakage results in exceeding overall containment leakage rate acceptance criteria in MODES 1, 2, and 3.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ----------NOTE---------- Only applicable to penetration flow paths with two [or more] PCIVs. ---------- One or more penetration flow paths with one PCIV inoperable [for reasons other than Condition[s] D [and E]].	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. AND	4 hours except for main steam line AND 8 hours for main steam line Insert 11

Insert 11

4 hours [for feedwater isolation valves (FWIVs), residual heat removal (RHR) shutdown cooling suction line PCIVs, and Low Pressure Core Spray (LPCS) System PCIVs]

AND

8 hours for main steam isolation valves (MSIVs)

[AND

7 days except for FWIVs, RHR shutdown cooling suction line PCIVs, LPCS System PCIVs, and MSIVs]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. ----------NOTE---------- Only applicable to penetration flow paths with two [or more] PCIVs. ---------- One or more penetration flow paths with two [or more] PCIVs inoperable [for reasons other than Condition[s] D [and E]].	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 [for reasons other than Condition[s] D [and E]].	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] hours except for penetrations with a closed system AND [7 days] ~~72 hours~~ for penetrations with a closed system
	AND	
	C.2 ----------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

BASES

ACTIONS (continued)

Insert 12

Action must be completed within the 4 hour Completion Time (8 hours for main steam lines). The specified time period of 4 hours is reasonable considering the time required to isolate the penetration and the relative importance of supporting primary containment OPERABILITY during MODES 1, 2, and 3. For main steam lines, an 8 hour Completion Time is allowed. The Completion Time of 8 hours for the main steam lines allows a period of time to restore the MSIVs to OPERABLE status given the fact that MSIV closure will result in isolation of the main steam line(s) and a potential for plant shutdown.

Insert 13

For affected penetrations that have been isolated in accordance with Required Action A.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, and no longer capable of being automatically isolated, will be in the isolation position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification that those devices outside the primary containment, drywell, and steam tunnel and capable of being mispositioned are in the correct position. The Completion Time for this verification of "once per 31 days for isolation devices outside primary containment, drywell, and steam tunnel," is appropriate because the devices are operated under administrative controls and the probability of their misalignment is low. For devices inside the primary containment, drywell, or steam tunnel, the specified time period of "prior to entering MODE 2 or 3 from MODE 4, if not performed within the previous 92 days," is based on engineering judgment and is considered reasonable in view of the inaccessibility of the devices and the existence of other administrative controls ensuring that device misalignment is an unlikely possibility.

Condition A is modified by a Note indicating that this Condition is only applicable to those penetration flow paths with two [or more] PCIVs. For penetration flow paths with one PCIV, Condition C provides appropriate Required Actions.

Required Action A.2 is modified by two Notes. Note 1 applies to isolation devices 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. 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

Insert 12

(4 hours for [feedwater isolation valves (FWIVs), residual heat removal (RHR) shutdown cooling suction line PCIVs, and Low Pressure Core Spray (LPCS) System PCIVs]; 8 hours for MSIVs; [and 7 days for other PCIVs in primary containment penetration flow paths with two [or more] PCIVs]). For [FWIVs, RHR shutdown cooling suction line PCIVs, and LPCS System PCIVs], a 4 hour Completion Time is allowed.

Insert 13

Reviewer's Note

The 7 day Completion Time is only allowed for those plants which adopt NEDC-33046-A, "Technical Justification to Support Risk-Informed Primary Containment Isolation Valve AOT Extensions for BWR Plants," dated January 2005, including the conditions described in the incorporated Safety Evaluation.

Otherwise, a 4 hour Completion Time must be maintained for PCIVs other than MSIVs.

[For other PCIVs in primary containment penetration flow paths with two [or more] PCIVs, a 7 day Completion Time is allowed. The Completion Time of 7 days provides the capability for on-line maintenance, repair, and testing of a PCIV and is reasonable considering the relative importance of supporting primary containment OPERABILITY in MODES 1, 2, and 3 (Ref. 4).]

BASES

ACTIONS (continued)

Insert 14

---REVIEWER'S NOTE---

The [4] hour Completion Time is left as 4 hours consistent with the Completion Time of Required Action A.1 for most penetrations; or a plant specific evaluation is provided for NRC review for cases other than for closed system penetrations and EFCVs (which have been reviewed and approved for 72 hours). If all penetrations are accepted for 72 hours, the Completion Time is simplified to state 72 hours.

The Completion Time of [4] hours is reasonable considering the time required to isolate the penetration and the relative importance of supporting primary containment OPERABILITY during MODES 1, 2, and 3. The 72 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. The closed system must meet the requirements of Ref. 5. 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.

Insert 15

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 specifically to address those penetrations with a single PCIV.

Required Action C.2 is modified by two Notes. Note 1 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. 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 low.

Insert 14

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

The 7 day Completion Time is only allowed for those plants which adopt NEDC-33046-A, including the conditions described in the incorporated Safety Evaluation. Otherwise, a 4 hour Completion Time is provided for most penetrations and a 72 hour Completion Time is provided for closed system penetrations (for cases other than closed system penetrations, if a plant specific evaluation is provided for NRC review and accepted for a Completion Time of 72 hours, the Completion Time may be simplified to state 72 hours).

Insert 15

[The Completion Time of 7 days, for penetrations with a closed system, provides the capability for on-line maintenance, repair, and testing of a PCIV and is reasonable considering the relative importance of supporting primary containment OPERABILITY in MODES 1, 2, and 3 (Ref. 4).]

BASES

SURVEILLANCE REQUIREMENTS (continued)

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 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, 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, 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 (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.

BASES

REFERENCES

1. FSAR, Chapter [15].
2. FSAR, Section [6.2].
3. FSAR, [Table 6.2-44].
4. 10 CFR 50, Appendix J, Option [A][B].
5. FSAR, Section 6.2.[ ].
6. Generic Issue B-24.

Insert 16

7

Insert 16

4. NEDC-33046-A, "Technical Justification to Support Risk-Informed Primary Containment Isolation Valve AOT Extensions for BWR Plants," January 2005.