ENERGY NORTHWEST

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GO2-07-111

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397 LICENSE AMENDMENT REQUEST FOR PROPOSED CHANGES TO COLUMBIA TECHNICAL SPECIFICATIONS: ADOPTION OF APPROVED GENERIC TECHNICAL SPECIFICATION CHANGES ASSOCIATED WITH CONTAINMENT ISOLATION VALVES.**

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, "Application for Amendment of License or Construction Permit," Energy Northwest hereby requests an amendment to the Columbia Generating Station (Columbia) Operating License (NPF-21). The proposed changes modify Technical Specifications (TS) 3.3.3.1, "Post Accident Monitoring (PAM) Instrumentation," 3.3.6.1, "Primary Containment Isolation Instrumentation," 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," and 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs)." The requested changes propose to adopt the following TS Task Force (TSTF) Travelers that have been previously approved by the Nuclear Regulatory Commission (NRC):

- TSTF-45-A, Revision 2, "Exempt Verification of CIVs that are Not Locked, Sealed or Otherwise Secured,"
- TSTF-46-A, Revision 1, "Clarify the CIV Surveillance to Apply Only to Automatic Isolation Valves,"
- TSTF-207-A, Revision 5, "Completion Time for Restoration of Various Excessive Leakage Rates,"
- TSTF-269-A, Revision 2, "Allow Administrative Means of Position Verification for Locked or Sealed Valves,"

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- TSTF-295-A, Revision 0, "Modify Note 2 to Actions of PAM Table to Allow Separate Condition Entry for Each Penetration,"

- TSTF-306-A, Revision 2, "Add Action to LCO 3.3.6.1 to Give Option to Isolate the Penetration," and

- TSTF-323-A, Revision 0, "EFCV Completion Time to 72 hours."

Attachment 1 provides a description of the proposed changes and the regulatory basis for those changes. Attachment 2 provides the affected TS pages marked up to show the proposed changes. Attachment 3 provides the proposed TS Bases changes for information only. Upon approval of the requested amendment, these TS Bases changes will be implemented concurrently with the TS change in accordance with the Columbia TS Bases Control Program.

Energy Northwest requests approval of these changes by July 31, 2008. Once approved, the amendment will be implemented within 90 days. This implementation period will provide adequate time for station documents to be revised using the appropriate change control mechanisms.

Energy Northwest has determined there are no significant hazards considerations associated with the proposed changes. The proposed changes also qualify for a categorical exclusion from environmental review pursuant to the provision of 10 CFR 51.22(c)(9).

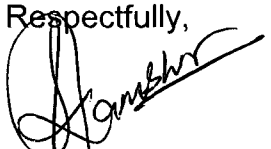
In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), Energy Northwest is notifying the State of Washington of this application for changes to the TS by transmitting a copy of this letter and its attachments to the designated State Official.

There are no new regulatory commitments being made within this submittal.

Should you have any questions or require additional information regarding this matter, please contact Mr. GV Cullen, Licensing Supervisor, at (509) 377-6105.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the date of this letter.

Respectfully,



S.K. Gambhir
Vice President, Technical Services
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Attachments: 1. Evaluation of Proposed Changes
2. Proposed Technical Specification Changes
3. Proposed Technical Specification Bases Changes

cc: BS Mallett – NRC RIV
CF Lyon – NRC NRR
NRC Sr. Resident Inspector – 988C
RN Sherman – BPA/1399
WA Horin – Winston & Strawn
RR Crowley - WDOH

Evaluation of Proposed Changes

1 Description

Pursuant to 10 CFR 50.90, "Application for Amendment of License or Construction Permit," Energy Northwest hereby requests an amendment to the Columbia Generating Station (Columbia) Operating License (NPF-21). The proposed changes modify Columbia Technical Specifications (TS) 3.3.3.1, "Post Accident Monitoring (PAM) Instrumentation," 3.3.6.1, "Primary Containment Isolation Instrumentation," 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," and 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs)." The implementation of these changes is based upon adoption of TS Task Force (TSTF) Travelers that have been previously approved by the Nuclear Regulatory Commission (NRC). TSTF Travelers are generic changes to the Improved Standard Technical Specifications (ISTS). ISTS applicable to the Columbia TS include portions of NUREG-1433, "Standard Technical Specifications General Electric Plants, BWR/4," (Reference 1) and NUREG-1434, "Standard Technical Specifications General Electric Plants, BWR/6" (Reference 2). The requested changes are related to primary and secondary containment isolation and were chosen to increase the consistency between the Columbia TS and the ISTS. The adoption of the following TSTFs are proposed within the scope of this amendment request:

- TSTF-45-A, Revision 2, "Exempt Verification of CIVs that are Not Locked, Sealed or Otherwise Secured," (Reference 3)
- TSTF-46-A, Revision 1, "Clarify the CIV Surveillance to Apply Only to Automatic Isolation Valves," (Reference 4)
- TSTF-207-A, Revision 5, "Completion Time for Restoration of Various Excessive Leakage Rates," (Reference 5)
- TSTF-269-A, Revision 2, "Allow Administrative Means of Position Verification for Locked or Sealed Valves," (Reference 6)
- TSTF-295-A, Revision 0, "Modify Note 2 to Actions of PAM Table to Allow Separate Condition Entry for Each Penetration," (Reference 7)
- TSTF-306-A, Revision 2, "Add Action to LCO 3.3.6.1 to Give Option to Isolate the Penetration," and (Reference 8)
- TSTF-323-A, Revision 0, "EFCV Completion Time to 72 hours" (Reference 9)

2 Proposed Changes

The proposed changes to the Columbia TS associated with the adoption of TSTF-45-A, TSTF-46-A, TSTF-207-A, TSTF-269-A, TSTF-295-A, TSTF-306-A, and TSTF-323-A are discussed in this section. Energy Northwest's adoption of each TSTF is discussed as an individual analysis and has been prepared consistent with Appendix D, "Plant-Specific Adoption of TSTF Travelers," of NEI-06-02, "License Amendment Request Guidelines" (Reference 10). Each individual analysis consists of the following topics:

- **Description of Proposed Change**

  This topic describes the effect of adopting the subject TSTF on the Columbia TS.

- **Differences between Proposed Change and Approved TSTF**

  This topic describes differences between the changes proposed to the Columbia TS and the ISTS mark-ups provided in the approved TSTF.

- **Summary of Approved TSTF Justification**

  This topic summarizes the justification utilized by the NRC when approving the TSTF.

- **Differences between Columbia and Approved TSTF Justification**

  This topic describes any differences between the justification utilized by the NRC when approving the TSTF and the justification for adopting the TSTF at Columbia.

- **Required License Commitments**

  Some TSTFs require that licensees make regulatory commitments as a condition of adopting the change. This topic describes any such commitments being made by Energy Northwest as part of this request.

- **NRC Approval**

  This topic references the NRC letter, if any, approving the TSTF. It also provides example NRC approvals of plant-specific requests to adopt the TSTF.

- **List of Affected Pages**

  This topic lists the Columbia TS and TS Bases pages affected by the adoption of this TSTF.

- **Significant Hazards Consideration**

  This topic provides an evaluation of whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the standards set forth in 10 CFR 50.92, "Issuance of amendment."

- **Applicable Regulatory Requirements/Criteria**

  This topic describes how the justification satisfies the applicable regulatory requirements and criteria and provides a basis that the NRC staff may use to find the proposed amendment acceptable.

To facilitate NRC review, each individual analysis will be self contained in separate sections. Each of these sections will begin on a new page as defined below:

A detailed markup of the proposed TS changes is provided as Attachment 2. Attachment 3 provides changes to affected TS Bases pages and is included for information only. Upon approval of the requested amendment, these TS Bases changes will be implemented concurrently with the TS changes in accordance with the Columbia TS Bases Control Program.

Energy Northwest has also reviewed the proposed changes for impact on previous Columbia submittals awaiting NRC approval and has determined there is no technical impact.

2.1 TSTF-45-A, Revision 2, "Exempt Verification of CIVs that are Not Locked, Sealed or Otherwise Secured"

Description of Proposed Change

The proposed changes associated with the adoption of TSTF-45-A would revise Surveillance Requirement (SRs) 3.6.1.3.2 and 3.6.1.3.3 of TS 3.6.1.3 and SR 3.6.4.2.1 of TS 3.6.4.2 to exempt PCIVs and SCIVs from position verification if the valves are locked, sealed, or otherwise secured in position. The proposed changes require an update to the TS Bases.

Differences between Proposed Change and Approved TSTF

There are no differences between the changes proposed within the scope of this amendment request and those approved in TSTF-45-A.

Summary of Approved TSTF Justification

TSTF-45-A was developed to propose changes to SR 3.6.1.3.3 and SR 3.6.1.3.4 of TS 3.6.1.3 and SR 3.6.4.2.1 of TS 3.6.4.2 within the ISTS for manual PCIVs and SCIVs and blind flanges located both inside and outside containment, by adding a provision to exempt from position verification requirements CIVs that are locked, sealed, or otherwise secured. Because the SRs are intended to ensure that valves that could be inadvertently repositioned remain isolated, it is not necessary to check the CIVs that are locked, sealed, or otherwise secured as they were verified to be in the correct position upon being locked, sealed, or otherwise secured.

Differences between Columbia and Approved TSTF Justification

The Columbia-specific TS equivalent to ISTS (NUREG-1433) SR 3.6.1.3.3 is SR 3.6.1.3.2 and the equivalent to ISTS (NUREG-1433) SR 3.6.1.3.4 is SR 3.6.1.3.3.

In addition, specifying that only CIVs which are not locked, sealed, or otherwise secured are required to be verified closed is consistent with other Columbia SRs such as SR 3.1.7.5 (Standby Liquid Control System valves), SR 3.5.1.2 (Emergency Core Cooling System valves), SR 3.5.3.2 (Reactor Core Isolation Cooling valves), SR 3.6.1.5.1 (Residual Heat Removal Drywell Spray System valves), and SR 3.7.1.3 (Service Water System and Ultimate Heat Sink valves).

Required License Commitments

There are no new regulatory commitments necessary to adopt TSTF-45-A.

NRC Approval

TSTF-45-A, Revision 2 was approved by the NRC in a letter dated July 26, 1999 (Reference 11).

Adoption of TSTF-45-A, Revision 2 has been approved by the NRC at other nuclear facilities. Amendments No. 259 and 262 to Peach Bottom Units 2 and 3 were approved in a letter dated May 10, 2006 (Reference 12). These amendments are considered suitable precedents as the implementation of TSTF-45-A is consistent with that proposed at Columbia.

List of Affected Pages

3.6.1.3-6
3.6.1.3-7
3.6.4.2-3
B 3.6.1.3-10
B 3.6.1.3-11
B 3.6.4.2-6

Significant Hazards Consideration

Energy Northwest has evaluated the proposed changes to the Columbia TS using the criteria in 10 CFR 50.92 and determined that no significant hazards consideration exists. The following information is provided to support a finding of no significant hazards consideration:

1. The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed change would exempt manual isolation valves and blind flanges located inside and outside the primary containment and in the secondary containment that are locked, sealed, or otherwise secured in position from the periodic verification of valve position required by SRs 3.6.1.3.2 and 3.6.1.3.3, and SR 3.6.4.2.1. The exempted valves are verified to be in the correct position upon being locked, sealed, or secured. Because the valves are in the condition assumed in the accident analysis, the proposed change will not affect the initiators or mitigation of any accident previously evaluated.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

   The proposed change does not involve a physical alteration to the plant (i.e., no new or different type of equipment will be installed) or a change to the methods governing normal plant operation. The changes do not alter the assumptions made in the safety analysis. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed amendment does not involve a significant reduction in a margin of safety.

   The proposed change replaces the periodic verification of valve position with verification of valve position followed by locking, sealing, or otherwise securing the valve in position. Periodic verification is also effective in detecting valve mispositioning. However, verification followed by securing the valve in position is effective in preventing valve mispositioning.

Applicable Regulatory Requirements/Criteria

Appendix A to 10 CFR 50, "General Design Criteria for Nuclear Power Plants," contains the following pertinent criteria:

> *Criterion 16 - Containment design.* Reactor containment and associated systems shall be provided to establish an essentially leak-tight barrier against the uncontrolled release of radioactivity to the environment and to assure that the containment design conditions important to safety are not exceeded for as long as postulated accident conditions require.
>
> *Criterion 53 - Provisions for containment testing and inspection.* The reactor containment shall be designed to permit (1) appropriate periodic inspection of all important areas, such as penetrations, (2) an appropriate surveillance program, and (3) periodic testing at containment design pressure of the leaktightness of penetrations which have resilient seals and expansion bellows.

In accordance with the requirement of Criterion 16 for an essentially leak-tight containment barrier, open CIVs are designed to either close automatically when required or are periodically inspected to ensure they are closed. However, it is not necessary to periodically verify that CIVs are closed to meet Criterion 16 if those valves are locked, sealed, or otherwise secured in the closed position.

Based on these considerations, (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 issuance of the amendment will not be inimical to the common defense and security or the health and safety of the public.

2.2 TSTF-46-A, Revision 1, "Clarify the CIV Surveillance to Apply Only to Automatic Isolation Valves"

Description of Proposed Change

The proposed changes associated with the adoption of TSTF-46-A would revise Surveillance Requirement (SR) 3.6.1.3.5 of TS 3.6.1.3 and SR 3.6.4.2.2 of TS 3.6.4.2 to clarify that the verification of isolation time is only applicable to power operated, automatic isolation valves, not to all power operated and all automatic isolation valves. The proposed changes require an update to the TS Bases.

Differences between Proposed Change and Approved TSTF

There are no differences between the changes proposed within the scope of this amendment request and those approved in TSTF-46-A.

Summary of Approved TSTF Justification

TSTF-46-A was developed to propose changes to SR 3.6.1.3.6 of TS 3.6.1.3 and SR 3.6.4.2.2 of TS 3.6.4.2 of the ISTS to clarify that the verification of isolation time is only applicable to power operated, automatic isolation valves, not to all power operated and all automatic isolation valves.

The TS Bases for SR 3.6.1.3.6 and 3.6.4.2.2 state that the isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis. There are valves credited as PCIVs and SCIVs which are power operated (i.e., can be remotely operated), but that do not receive a containment isolation signal. These power operated valves do not have an isolation time assumed in the accident analyses since they require operator action. Therefore, deleting the reference to time testing power operated isolation valves that are not automatic valves serves to reduce the potential for misinterpretation of these SR while verifying compliance with the assumptions in the accident analysis.

Differences between Columbia and Approved TSTF Justification

The Columbia-specific TS equivalent to ISTS (NUREG-1433) SR 3.6.1.3.6 is SR 3.6.1.3.5.

Required License Commitments

There are no new regulatory commitments necessary to adopt TSTF-46-A.

NRC Approval

The NRC did not issue a letter approving TSTF-46-A, Revision 1; however, it was incorporated by the NRC into Revision 2 of the ISTS NUREGs.

Adoption of TSTF-46-A, Revision 1 has been approved by the NRC at other nuclear facilities. Amendments No. 259 and 262 to Peach Bottom Units 2 and 3 were approved in a letter dated May 10, 2006 (Reference 12). These amendments are considered suitable precedents as the implementation of TSTF-46-A is consistent with that proposed at Columbia.

List of Affected Pages

3.6.1.3-7
3.6.4.2-3
B 3.6.1.3-12
B 3.6.4.2-2
B 3.6.4.2-7

Significant Hazards Consideration

Energy Northwest has evaluated the proposed changes to the Columbia TS using the criteria in 10 CFR 50.92 and determined that no significant hazards consideration exists. The following information is provided to support a finding of no significant hazards consideration:

1. The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed change would revise the verification of PCIV and SCIV closure time to clarify that only power operated, automatic valves are required to be tested. PCIVs and SCIVs are not an initiator of any accident previously evaluated; rather, they serve to mitigate the consequences of evaluated accidents. The proposed change does not change the requirement to verify that power operated, automatic PCIVs and SCIVs close within the time assumed in the accident analysis, but rather, clarifies that non-automatic valves, which the accident analysis does not assume close within a specified time, are not required to be tested to verify the closure time. As a result, the mitigating action of the PCIVs and SCIVs is not affected by this change.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

   The proposed change does not involve a physical alteration to the plant (i.e., no new or different type of equipment will be installed) or a change to the methods governing normal plant operation. The changes do not alter the assumptions made in the safety analysis. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed amendment does not involve a significant reduction in a margin of safety.

   The proposed change would revise the verification of PCIV and SCIV closure time to clarify that only power operated, automatic valves are required to be tested, and not all power operated valves. There is no closure time assumed in the accident analysis for power operated PCIVs and SCIVs that are not automatic.

Applicable Regulatory Requirements/Criteria

Appendix A to 10 CFR 50, "General Design Criteria for Nuclear Power Plants," contains the following pertinent criteria:

> *Criterion 16 - Containment design.* Reactor containment and associated systems shall be provided to establish an essentially leak-tight barrier against the uncontrolled release of radioactivity to the environment and to assure that the containment design conditions important to safety are not exceeded for as long as postulated accident conditions require.
>
> *Criterion 53 - Provisions for containment testing and inspection.* The reactor containment shall be designed to permit (1) appropriate periodic inspection of all important areas, such as penetrations, (2) an appropriate surveillance program, and (3) periodic testing at containment design pressure of the leaktightness of penetrations which have resilient seals and expansion bellows.

In accordance with the requirement of Criterion 16 for an essentially leak-tight containment barrier, certain automatic valves are assumed to close on receipt of an automatic signal within a specific closure time. In accordance with Criterion 53, this closure time is periodically tested to verify that the accident analysis assumptions will be met. Under the proposed change, power operated, automatic valves will continue to be tested but the requirements are clarified to not require isolation time testing of non-automatic valves.

Based on these considerations, (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 issuance of the amendment will not be inimical to the common defense and security or the health and safety of the public.

2.3 TSTF-207-A, Revision 5, "Completion Time for Restoration of Various Excessive Leakage Rates"

Description of Proposed Change

The proposed changes associated with the adoption of TSTF-207-A would incorporate editorial changes to the Actions of TS 3.6.1.3 to be consistent with the typical presentation of Condition exceptions and to make the terminology in the Conditions and Completion Time (CT) consistent. Condition D would be revised from "One or more penetration flow paths with secondary containment bypass leakage rate, main steam isolation valve (MSIV) leakage rate, hydrostatically tested lines leakage rate not within limit" to "One or more secondary containment bypass leakage rate, MSIV leakage rate, hydrostatically tested lines leakage rate not within limit." The CT of Condition D is rewritten to separate the CT by the type of leakage. The associated CTs are changed to be consistent with the ISTS CTs. The CT and Bases are revised to refer to MSIV leakage rate, as used in the Condition, instead of main steam line leakage. Conditions A, B, and C are revised to replace the phrase "except due to leakage not within limit" with the phrase "for reasons other than Condition D," to be consistent with the ISTS format. The proposed changes require an update to the TS Bases.

Differences between Proposed Change and Approved TSTF

As described below, many of the changes proposed in TSTF-207-A have already been adopted into the Columbia TS or are not applicable.

Summary of Approved TSTF Justification

TSTF-207-A was originally developed to revise Condition D to address leakage types other than only secondary containment bypass leakage rate, such as MSIV leakage, purge valve leakage, leakage from hydrostatically tested valves, and excess flow check valve (EFCV) leakage. Prior to TSTF-207-A, if an MSIV, hydrostatically tested valve, or EFCV did not meet leakage limits, Condition A would be entered. Condition A allows the penetration to be isolated but does not require the leakage rate to be restored to within the limit. TSTF-207-A modified Condition D to be applicable to all measured leakage rates and requires restoration of the leakage to within limit.

Differences between Columbia and Approved TSTF Justification

Many of the changes proposed in TSTF-207-A have already been adopted into the Columbia TS or are not applicable. The various types of leakage applicable to the plant's design (secondary containment bypass leakage rate, MSIV leakage rate, and hydrostatically tested lines leakage rate) are already addressed in Condition D. Therefore, this portion of TSTF-207-A is not applicable to Columbia. The changes proposed for Conditions A, B, and C are editorial changes to reference Condition D instead of referring to leakage not within limits.

The proposed change to Condition D of TS 3.6.1.3 would revise the wording from "One or more penetration flow paths with secondary containment bypass leakage rate, MSIV leakage

rate, hydrostatically tested lines leakage rate not within limit" to "One or more secondary containment bypass leakage rate, MSIV leakage rate, hydrostatically tested lines leakage rate not within limit," eliminating the phrase "penetration flow paths with." The change would make the Columbia TS consistent with the ISTS. The CTs in Condition D are revised to provide a separate CT for each type of leakage and the CTs revised to be consistent with the ISTS. In addition, the CT is revised to refer to "MSIV Leakage" instead of "main steam line," so that the CT and the Condition are worded consistently.

Required License Commitments

There are no new regulatory commitments necessary to adopt TSTF-207-A.

NRC Approval

The NRC did not issue a letter approving TSTF-207-A, Revision 5; however, it was incorporated by the NRC into Revision 2 of the ISTS NUREGs.

The provisions of TSTF-207-A have been adopted by many plants as part of complete conversion to ISTS. An example of this is at North Anna Power Station (Reference 19).

List of Affected Pages

3.6.1.3-1
3.6.1.3-3
3.6.1.3-5
B 3.6.1.3-8

Significant Hazards Consideration

Energy Northwest has evaluated the proposed changes to the Columbia TS using the criteria in 10 CFR 50.92 and determined that no significant hazards consideration exists. The following information is provided to support a finding of no significant hazards consideration:

1. <u>The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.</u>

   The proposed change revises the Actions of TS 3.6.1.3 to make the presentation consistent with similar Conditions in the ISTS. Part of this change would extend the CT for hydrostatically tested lines on a closed system to 72 hours for Condition D. Most of the proposed changes do not affect the requirements in the TS and have no affect on the initiation or mitigation of any accident previously evaluated. Leakage of hydrostatically tested lines on a closed system is not an initiator of any accident previously evaluated. The consequences of a previously evaluated accident during the extended CT are the same as the consequences during the existing CT.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

   The proposed change does not involve a physical alteration to the plant (i.e., no new or different type of equipment will be installed) or a change to the methods governing normal plant operation. The changes do not alter the assumptions made in the safety analysis. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed amendment does not involve a significant reduction in a margin of safety.

   The proposed changes are editorial in nature and do not affect the requirements of the TS. Extension of the CT for hydrostatically tested lines on a closed system to 72 hours does not represent a significant reduction in safety given the reliability of closed systems. Nonetheless, leakage can be isolated restored by isolating the penetration with a valve not exceeding the leakage limits.

Applicable Regulatory Requirements/Criteria

Appendix A to 10 CFR 50, "General Design Criteria for Nuclear Power Plants," contains the following pertinent criteria:

> *Criterion 16 - Containment design.* Reactor containment and associated systems shall be provided to establish an essentially leak-tight barrier against the uncontrolled release of radioactivity to the environment and to assure that the containment design conditions important to safety are not exceeded for as long as postulated accident conditions require.
>
> *Criterion 53 - Provisions for containment testing and inspection.* The reactor containment shall be designed to permit (1) appropriate periodic inspection of all important areas, such as penetrations, (2) an appropriate surveillance program, and (3) periodic testing at containment design pressure of the leaktightness of penetrations which have resilient seals and expansion bellows.

Criteria 16 and 53 specify that the reactor containment maintain an essentially leak-tight barrier and be periodically verified. However, these criteria do not contain provisions describing actions to take if leakage rates are exceeded.

The regulations in 10 CFR 50.36 provide general requirements for the establishment of TS, including Limiting Conditions of Operation (LCOs), action requirements, and SRs, but do not provide specific guidance on Actions and CTs when an LCO is not met. The best guidance is that contained in the ISTS, NUREG-1434. The proposed changes associated with the adoption of TSTF-207-A are consistent with NUREG-1434.

2.4 TSTF-269-A, Revision 2, "Allow Administrative Means of Position Verification for Locked or Sealed Valves"

Description of Proposed Change

The proposed changes associated with the adoption of TSTF-269-A would modify TS 3.6.1.3 and TS 3.6.4.2. Both TS 3.6.1.3 and TS 3.6.4.2 require that penetrations with an inoperable isolation valve be isolated and periodically verified to ensure continued isolation. A Note would be added to TS 3.6.1.3, Actions A and C, and TS 3.6.4.2, Action A, to allow isolation devices that are locked, sealed, or otherwise secured to be verified by use of administrative means. The proposed changes require an update to the TS Bases.

Differences between Proposed Change and Approved TSTF

TSTF-269-A also modifies TS 3.6.1.3, Action E, which is optional in the ISTS. As the equivalent of Action E does not exist within Columbia TS, this portion of TSTF-269-A is not applicable.

Summary of Approved TSTF Justification

TSTF-269-A was developed to propose changes to requirements for repetitive verification of the status of locked, sealed, or secured components by allowing verification to be by administrative means. The purpose of the periodic verification that a penetration with an inoperable isolation valve continues to be isolated is to detect and correct inadvertent repositioning of the isolation device. However, the function of locking, sealing, or securing an isolation device ensures that the device is not inadvertently repositioned. Therefore, it is sufficient to assume that the initial establishment of component status (e.g., isolation valves closed) was performed correctly and subsequent periodic re-verification need only be a verification of the administrative control that ensures that the component remains in the required state. It is unnecessary and undesirable to remove the lock, seal, or other means of securing the component solely to perform an active verification of the required state as it would increase the chance of mispositioning due to the frequent manipulation.

Differences between Columbia and Approved TSTF Justification

There are no differences between the justification supporting the approved TSTF and that associated with adoption at Columbia.

Required License Commitments

There are no new regulatory commitments necessary to adopt TSTF-269-A.

NRC Approval

TSTF-269-A, Revision 2 was approved by the NRC in a letter dated July 16, 1998 (Reference 13).

Adoption of TSTF-269-A, Revision 2 has been approved by the NRC at other nuclear facilities. Amendments No. 259 and 262 to Peach Bottom Units 2 and 3 were approved in a letter dated May 10, 2006 (Reference 12). These amendments are considered suitable precedents as the implementation of TSTF-269-A is consistent with that proposed at Columbia.

List of Affected Pages

3.6.1.3-2
3.6.1.3-4
3.6.4.2-2
B 3.6.1.3-6
B 3.6.1.3-8
B 3.6.4.2-4

Significant Hazards Consideration

Energy Northwest has evaluated the proposed changes to the Columbia TS using the criteria in 10 CFR 50.92 and determined that no significant hazards consideration exists. The following information is provided to support a finding of no significant hazards consideration:

1. The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed change modifies TS 3.6.1.3 and TS 3.6.4.2. Both TS 3.6.1.3 and TS 3.6.4.2 require penetrations with an inoperable isolation valve to be isolated and periodically verified to be isolated. A Note is added to TS 3.6.1.3, Actions A and C, and TS 3.6.4.2, Action A, to allow isolation devices that are locked, sealed, or otherwise secured to be verified by use of administrative means. The proposed change does not affect any plant equipment, test methods, or plant operation, and are not initiators of any analyzed accident sequence. The inoperable containment penetrations will continue to be isolated, and hence perform their isolation function. Operation in accordance with the proposed TS will ensure that all analyzed accidents will continue to be mitigated as previously analyzed.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

   The proposed change does not involve a physical alteration to the plant (i.e., no new or different type of equipment will be installed) or a change to the methods governing normal plant operation. The changes do not alter the assumptions made in the safety analysis. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed amendment does not involve a significant reduction in a margin of safety.

   The proposed change will not affect the operation of plant equipment or the function of any equipment assumed in the accident analysis. The PCIVs and SCIVs will continue to be operable or will be isolated as required by the existing specifications.

Applicable Regulatory Requirements/Criteria

Appendix A to 10 CFR 50, "General Design Criteria for Nuclear Power Plants," contains the following pertinent criteria:

Criterion 54 - Piping systems penetrating containment. Piping systems penetrating primary reactor containment shall be provided with leak detection, isolation, and containment capabilities having redundancy, reliability, and performance capabilities which reflect the importance to safety of isolating these piping systems. Such piping systems shall be designed with a capability to test periodically the operability of the isolation valves and associated apparatus and to determine if valve leakage is within acceptable limits.

Criterion 55 - Reactor coolant pressure boundary penetrating containment. Each line that is part of the reactor coolant pressure boundary and that penetrates primary reactor containment shall be provided with containment isolation valves as follows, unless it can be demonstrated that the containment isolation provisions for a specific class of lines, such as instrument lines, are acceptable on some other defined basis:

(1) One locked closed isolation valve inside and one locked closed isolation valve outside containment; or

(2) One automatic isolation valve inside and one locked closed isolation valve outside containment; or

(3) One locked closed isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment; or

(4) One automatic isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment.

Isolation valves outside containment shall be located as close to containment as practical and upon loss of actuating power, automatic isolation valves shall be designed to take the position that provides greater safety.

Other appropriate requirements to minimize the probability or consequences of an accidental rupture of these lines or of lines connected to them shall be provided as necessary to assure adequate safety. Determination of the appropriateness of these requirements, such as higher quality in design, fabrication, and testing, additional provisions for inservice inspection, protection against more severe natural phenomena, and additional isolation valves and containment, shall include consideration of the population density, use characteristics, and physical characteristics of the site environs.

Criterion 56 - Primary containment isolation. Each line that connects directly to the containment atmosphere and penetrates primary reactor containment shall be provided with containment isolation valves as follows, unless it can be demonstrated that the containment isolation provisions for a specific class of lines, such as instrument lines, are acceptable on some other defined basis:

(1) One locked closed isolation valve inside and one locked closed isolation valve outside containment; or

(2) One automatic isolation valve inside and one locked closed isolation valve outside containment; or

(3) One locked closed isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment; or

(4) One automatic isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment.

Isolation valves outside containment shall be located as close to the containment as practical and upon loss of actuating power, automatic isolation valves shall be designed to take the position that provides greater safety.

Criterion 57 - Closed system isolation valves. Each line that penetrates primary reactor containment and is neither part of the reactor coolant pressure boundary nor connected directly to the containment atmosphere shall have at least one containment isolation valve which shall be either automatic, or locked closed, or capable of remote manual operation. This valve shall be outside containment and located as close to the

containment as practical. A simple check valve may not be used as the automatic isolation valve.

Criteria 54, 55, 56, and 57 specify the number, type, and positions of CIVs required for containment piping penetrations. However, these criteria do not contain provisions describing periodic verification of CIV position.

The requirements of 10 CFR 50.36(c)(3), "Surveillance Requirements," state:

> *"Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met."*

The regulations do not specify how frequently or in what manner systems and components are to be tested. The proposed Surveillance Requirements (SRs) are consistent with the NUREG-1433 requirements.

Based on these considerations, (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 issuance of the amendment will not be inimical to the common defense and security or the health and safety of the public.

2.5 TSTF-295-A, Revision 0, "Modify Note 2 to Actions of PAM Table to Allow Separate Condition Entry for Each Penetration"

Description of Proposed Change

The proposed change associated with the adoption of TSTF-295-A would rename Function 7 of TS 3.3.3.1 from "PCIV Position" to "Penetration Flow Path PCIV Position." This proposed change requires an update to the TS Bases.

Differences between Proposed Change and Approved TSTF

TSTF-295-A also modifies the PAM function for suppression pool water temperature. This function does not appear in the Columbia TS table of PAM instrumentation (Table 3.3.3.1-1), and therefore, this portion of TSTF-295-A is not applicable.

The Columbia TS Bases title for Function 7 is modified to be consistent with the change to the title in Table 3.3.3.1-1 made by TSTF-295-A.

Summary of Approved TSTF Justification

TSTF-295 was developed to propose that Function 7 of TS 3.3.3.1 within the ISTS be renamed from "PCIV Position" to "Penetration Flow Path PCIV Position." The proposed change is a clarification which identifies that separate condition entry is allowed for each penetration flow path for the PAM PCIV position indication function and clarifies how to apply the Actions Note to this function. The Actions Note states "Separate Condition entry is allowed for each Function." The changes clarify that separate condition entry is allowed for each penetration flow path for the PAM PCIV position indication function. This change was intended to provide consistency between the PCIV position indication function of the PAM TS (TS 3.3.3.1) and the allowance in the primary containment penetration TS for PCIVs (TS 3.6.1.3). The PAM specification requires a minimum of one channel of PCIV position indication in the control room to be Operable for each active PCIV in a containment penetration flow path. Actions provide appropriate compensatory actions for each inoperable indication channel. The change is intended to reduce the potential for a shutdown of the unit due to misinterpretation of the requirements.

These changes were considered acceptable because they clarify the intended application of action requirements for inoperable channels of the PAM functions and were consistent with the action requirements for PCIVs. They did not reduce any existing action requirements for the PAM functions.

Differences between Columbia and Approved TSTF Justification

There are no differences between the justification supporting the approved TSTF and that associated with adoption at Columbia.

Required License Commitments

There are no new regulatory commitments necessary to adopt TSTF-295-A.

NRC Approval

TSTF-295-A, Revision 0 was approved by the NRC in a letter dated December 21, 1999 (Reference 14).

Adoption of TSTF-295-A, Revision 0 has been approved by the NRC at other nuclear facilities. Amendments No. 259 and 262 to Peach Bottom Units 2 and 3 were approved in a letter dated May 10, 2006 (Reference 12). These amendments are considered suitable precedents as the implementation of TSTF-295-A is consistent with that proposed at Columbia.

List of Affected Pages

3.3.3.1-4
B 3.3.3.1-5
B 3.3.3.1-6

Significant Hazards Consideration

Energy Northwest has evaluated the proposed changes to the Columbia TS using the criteria in 10 CFR 50.92 and determined that no significant hazards consideration exists. The following information is provided to support a finding of no significant hazards consideration:

1. The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed change clarifies the separate condition entry Note in TS 3.3.3.1 for Function 7, "PCIV Position." The proposed change does not affect any plant equipment, test methods, or plant operation, and are not initiators of any analyzed accident sequence. The actions taken for inoperable PAM channels are not changed. Operation in accordance with the proposed TS will ensure that all analyzed accidents will continue to be mitigated as previously analyzed.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

   The proposed change does not involve a physical alteration to the plant (i.e., no new or different type of equipment will be installed) or a change to the methods governing normal plant operation. The changes do not alter the assumptions made in the safety analysis. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed amendment does not involve a significant reduction in a margin of safety.

   The proposed change will not affect the operation of plant equipment or the function of any equipment assumed in the accident analysis. The PAM channels will continue to be operable or the existing, appropriate actions will be followed.

Applicable Regulatory Requirements/Criteria

Appendix A to 10 CFR 50, "General Design Criteria for Nuclear Power Plants," contains the following pertinent criteria:

> *Criterion 13 - Instrumentation and control.* Instrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Appropriate controls shall be provided to maintain these variables and systems within prescribed operating ranges.
>
> *Criterion 64 - Monitoring radioactivity releases.* Means shall be provided for monitoring the reactor containment atmosphere, spaces containing components for recirculation of loss-of-coolant accident fluids, effluent discharge paths, and the plant environs for radioactivity that may be released from normal operations, including anticipated operational occurrences, and from postulated accidents.

The proposed changes are clarifications of the existing requirements and do not affect the design of the PAM instrumentation. Therefore, (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 issuance of the amendment will not be inimical to the common defense and security or the health and safety of the public.

2.6 TSTF-306-A, Revision 2, "Add Action to LCO 3.3.6.1 to Give Option to Isolate the Penetration"

Description of Proposed Change

The proposed changes associated with the adoption of TSTF-306-A would revise TS 3.3.6.1. An Actions Note would be added to allow penetration flow paths to be unisolated intermittently under administrative controls. Additionally, the traversing incore probe (TIP) isolation system would be segregated as a separate Function, allowing 24 hours to isolate the penetration. The proposed changes require an update to the TS Bases.

Differences between Proposed Change and Approved TSTF

The TIP isolation function in TSTF-306-A is identified as Function 7 in Table 3.3.6.1-1 and would be Function 6 in the Columbia TS. In TSTF-306-A, it is assumed that the TIP valves isolate on a Reactor Vessel Water Level – Low, Level 3 signal. In the Columbia design, the TIP valves isolate on a Reactor Vessel Water Level - Low Low, Level 2 signal. The TS and the Bases are revised to reflect this design difference.

Summary of Approved TSTF Justification

TSTF-306-A was developed to modify TS 3.3.6.1 within the ISTS by adding an Actions Note to allow penetration flow paths to be unisolated intermittently under administrative controls. TS 3.6.1.3 contains an allowance to open PCIVs intermittently under administrative controls. The isolation instrumentation described in TS 3.3.6.1 serves as a support system for the PCIVs. The Actions for inoperability of the instrumentation should not be more restrictive than the Actions for inoperability of the PCIVs. Therefore, the allowance to intermittently open penetrations (under administrative control) that are isolated to comply with Actions is added to the Specification 3.3.6.1 Actions as Note 1.

Additionally, TSTF-306 proposed that the TIP isolation system be segregated as a separate isolation Function with the associated Action allowing penetration isolation rather than a unit shutdown. The Actions for inoperable primary containment isolation instrumentation require a unit shutdown and is overly restrictive for inoperable TIP isolation instrumentation. Therefore, the option to isolate the penetration and to continue plant operation is provided. The TIP system uses a small bore penetration, and its isolation in a design basis event is via the manually operated shear valves. The ability to manually isolate the TIP system by either the normal isolation valve or the shear valve would be unaffected by inoperable instrumentation. Therefore, the option to isolate the penetration and to continue plant operation was provided. In order to implement this allowance, a separate isolation instrumentation Function is proposed for the TIP system. The Completion Time (CT) to isolate the penetration (Action G) of 24 hours is the CT provided in the ISTS for penetration isolation when the manual isolation function is inoperable.

Differences between Columbia and Approved TSTF Justification

The difference in the TIP valve isolation signal does not alter the justification for the change, which is based on the size and redundancy of the penetration, not the initiating trip signal.

The segregated TIP isolation function references applicable Surveillance Requirements (SRs) and the Columbia-specific TS equivalent to ISTS SR 3.3.6.1.6 is SR 3.3.6.1.4 and ISTS SR 3.3.6.1.7 is SR 3.3.6.1.6. Furthermore, an optional SR (SR 3.3.6.1.3) appears in TSTF-306-A. As there is no equivalent SR in the Columbia TS, this portion of TSTF-306-A is not applicable. The Allowable Values for the new Function are taken from existing Function 2.b, "Reactor Vessel Water Level – Low Low, Level 2," and Function 2.c, "Drywell Pressure - High."

Required License Commitments

There are no new regulatory commitments necessary to adopt TSTF-306-A.

NRC Approval

The NRC did not issue a letter approving TSTF-306-A, Revision 2; however, it was incorporated by the NRC into Revision 2 of the ISTS NUREGs.

Adoption of TSTF-306-A, Revision 2 has been approved by the NRC at other nuclear facilities. Amendments No. 259 and 262 to Peach Bottom Units 2 and 3 were approved in a letter dated May 10, 2006 (Reference 12). Additionally, Amendment No. 213 and 188 for Susquehanna Units 1 and 2 were approved by the NRC in a letter dated June 5, 2003 (Reference 15). These amendments are considered suitable precedents as the implementation of TSTF-306-A at Peach Bottom and Susquehanna are consistent with that proposed at Columbia.

List of Affected Pages

3.3.6.1-1
3.3.6.1-8
B 3.3.6.1-3
B 3.3.6.1-6
B 3.3.6.1-29
B 3.3.6.1-30
B 3.3.6.1-34

Significant Hazards Consideration

Energy Northwest has evaluated the proposed changes to the Columbia TS using the criteria in 10 CFR 50.92 and determined that no significant hazards consideration exists. The following information is provided to support a finding of no significant hazards consideration:

1. The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed change revises TS 3.3.6.1 by adding an Actions Note that would allow penetration flow paths to be unisolated intermittently under administrative controls. Furthermore, the TIP isolation system is segregated into a separate Function, allowing 24 hours to isolate the penetration. The proposed change does not affect any plant equipment, test methods, or plant operation, and are not initiators of any analyzed accident sequence. The allowance to unisolate a penetration flow path will not have a significant effect on the mitigation of any accident previously evaluated because the penetration flow path can be isolated, if needed, by a dedicated operator. The option to isolate a TIP penetration will ensure the penetration will perform as assumed in the accident analysis. Operation in accordance with the proposed TS will ensure that all analyzed accidents will continue to be mitigated as previously analyzed.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

   The proposed change does not involve a physical alteration to the plant (i.e., no new or different type of equipment will be installed) or a change to the methods governing normal plant operation. The changes do not alter the assumptions made in the safety analysis. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed amendment does not involve a significant reduction in a margin of safety.

   The proposed change will not affect the operation of plant equipment or the function of any equipment assumed in the accident analysis. The allowance to unisolate a penetration flow path will not have a significant effect on a margin of safety because the penetration flow path can be isolated manually, if needed. The option to isolate a TIP penetration will ensure the penetration will perform as assumed in the accident analysis.

Applicable Regulatory Requirements/Criteria

Appendix A to 10 CFR 50, "General Design Criteria for Nuclear Power Plants," contains the following pertinent criteria:

> *Criterion 54 - Piping systems penetrating containment.* Piping systems penetrating primary reactor containment shall be provided with leak detection, isolation, and containment capabilities having redundancy, reliability, and performance capabilities which reflect the importance to safety of isolating these piping systems. Such piping systems shall be designed with a capability to test periodically the operability of the

isolation valves and associated apparatus and to determine if valve leakage is within acceptable limits.

Criterion 55 - Reactor coolant pressure boundary penetrating containment. Each line that is part of the reactor coolant pressure boundary and that penetrates primary reactor containment shall be provided with containment isolation valves as follows, unless it can be demonstrated that the containment isolation provisions for a specific class of lines, such as instrument lines, are acceptable on some other defined basis:

(1) One locked closed isolation valve inside and one locked closed isolation valve outside containment; or

(2) One automatic isolation valve inside and one locked closed isolation valve outside containment; or

(3) One locked closed isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment; or

(4) One automatic isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment.

Isolation valves outside containment shall be located as close to containment as practical and upon loss of actuating power, automatic isolation valves shall be designed to take the position that provides greater safety.

Other appropriate requirements to minimize the probability or consequences of an accidental rupture of these lines or of lines connected to them shall be provided as necessary to assure adequate safety. Determination of the appropriateness of these requirements, such as higher quality in design, fabrication, and testing, additional provisions for inservice inspection, protection against more severe natural phenomena, and additional isolation valves and containment, shall include consideration of the population density, use characteristics, and physical characteristics of the site environs.

Criterion 56 - Primary containment isolation. Each line that connects directly to the containment atmosphere and penetrates primary reactor containment shall be provided with containment isolation valves as follows, unless it can be demonstrated that the containment isolation provisions for a specific class of lines, such as instrument lines, are acceptable on some other defined basis:

(1) One locked closed isolation valve inside and one locked closed isolation valve outside containment; or

(2) One automatic isolation valve inside and one locked closed isolation valve outside containment; or

(3) One locked closed isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment; or

(4) One automatic isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment.

Isolation valves outside containment shall be located as close to the containment as practical and upon loss of actuating power, automatic isolation valves shall be designed to take the position that provides greater safety.

Criterion 57 - Closed system isolation valves. Each line that penetrates primary reactor containment and is neither part of the reactor coolant pressure boundary nor connected directly to the containment atmosphere shall have at least one containment isolation valve which shall be either automatic, or locked closed, or capable of remote manual operation. This valve shall be outside containment and located as close to the containment as practical. A simple check valve may not be used as the automatic isolation valve.

Criteria 54, 55, 56, and 57 specify the number, type, and positions of CIVs required for containment piping penetrations. However, these criteria do not contain provisions describing actions to take if CIVs become inoperable during plant operation.

The regulations in 10 CFR 50.36 provide general requirements for the establishment of TS, including Limiting Conditions of Operation (LCOs), action requirements, and SRs, but do not provide specific guidance on Actions and CTs when an LCO is not met. The best guidance is that contained in the ISTS, NUREG-1433. The proposed changes associated with the adoption of TSTF-306-A are consistent with NUREG-1433.

Based on these considerations, (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 issuance of the amendment will not be inimical to the common defense and security or the health and safety of the public.

2.7 TSTF-323-A, Revision 0, "EFCV Completion Time to 72 hours"

Description of Proposed Change

The proposed changes associated with the adoption of TSTF-323-A would revise Action C of TS 3.6.1.3 to provide a 72 hour Completion Time (CT) instead of a 12 hour CT to isolate an inoperable excess flow check valve (EFCV). The proposed changes require an update to the TS Bases.

Differences between Proposed Change and Approved TSTF

There are no differences between the changes proposed within the scope of this amendment request and those approved in TSTF-323-A.

Summary of the Approved TSTF Justification

TSTF-323 was developed to modify Action C of TS 3.6.1.3 within the ISTS to extend the CT for EFCVs from 12 hours to 72 hours. Certain BWR designs include a class of single-isolation valve penetrations (i.e., instrumentation lines with an EFCV). Approved TSTF-30-A, Revision 3, "Extend the Completion Time for Inoperable Isolation Valve to a Closed System to 72 Hours," (Reference 16) extended the CT to 72 hours for inoperable CIVs where there was only a single valve on the containment penetration for those penetrations that meet the requirements of General Design Criterion (GDC) 57, "Closed System Isolation Valves." TSTF-30-A was approved by the NRC in a letter dated August 16, 1999 (Reference 17). The NRC approval was based on recognition that these penetrations were designed with some other acceptable barrier (e.g., closed system). EFCVs similarly are on penetrations that have been found to have acceptable barrier(s) in the event that the single isolation valve failed. Therefore, Required Action C.1 was revised to provide a CT of 72 hours for inoperable EFCVs.

Differences between Columbia and Approved TSTF Justification

The Columbia design does not include penetrations that meet GDC 57, as discussed in Columbia FSAR Section 6.2.4.3.2.3, and therefore, TSTF-30-A, is not adopted into the Columbia TS. This does not affect the applicability of TSTF-323-A to Columbia.

Required License Commitments

There are no new regulatory commitments necessary to adopt TSTF-323-A.

NRC Approval

TSTF-323-A, Revision 0 was approved by the NRC in a letter dated March 22, 1999 (Reference 18).

Adoption of TSTF-323-A, Revision 0 has been approved by the NRC at other nuclear facilities. Amendments No. 259 and 262 to Peach Bottom Units 2 and 3 were approved in a letter dated May 10, 2006 (Reference 12). These amendments are considered suitable precedents as the implementation of TSTF-323-A at Peach Bottom is consistent with that proposed at Columbia.

List of Affected Pages

3.6.1.3-3
B 3.6.1.3-7

Significant Hazards Consideration

Energy Northwest has evaluated the proposed changes to the Columbia TS using the criteria in 10 CFR 50.92 and determined that the proposed changes do not involve a significant hazards consideration. The following information is provided to support a finding of no significant hazards consideration:

1. The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed change would revise Action C of TS 3.6.1.3 to provide a 72 hour CT instead of a 12 hour CT to isolate an inoperable EFCV. PCIVs are not an initiator of any accident previously evaluated. The consequences of a previously evaluated accident during the extended CT are the same as the consequences during the existing CT.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

   The proposed change does not involve a physical alteration to the plant (i.e., no new or different type of equipment will be installed) or a change to the methods governing normal plant operation. The changes do not alter the assumptions made in the safety analysis. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed amendment does not involve a significant reduction in a margin of safety.

   The PCIVs serve to mitigate the potential for radioactive release from the primary containment following an accident. The design and response of the PCIVs to an accident are not affected by this change. The revised CT is appropriate given the EFCVs are on penetrations that have been found to have acceptable barrier(s) in the event that the single isolation valve failed.

Applicable Regulatory Requirements/Criteria

Appendix A to 10 CFR 50, "General Design Criteria for Nuclear Power Plants," contains the following pertinent criteria:

Criterion 54 - Piping systems penetrating containment. Piping systems penetrating primary reactor containment shall be provided with leak detection, isolation, and containment capabilities having redundancy, reliability, and performance capabilities which reflect the importance to safety of isolating these piping systems. Such piping systems shall be designed with a capability to test periodically the operability of the isolation valves and associated apparatus and to determine if valve leakage is within acceptable limits.

Criterion 55 - Reactor coolant pressure boundary penetrating containment. Each line that is part of the reactor coolant pressure boundary and that penetrates primary reactor containment shall be provided with containment isolation valves as follows, unless it can be demonstrated that the containment isolation provisions for a specific class of lines, such as instrument lines, are acceptable on some other defined basis:

(1) One locked closed isolation valve inside and one locked closed isolation valve outside containment; or

(2) One automatic isolation valve inside and one locked closed isolation valve outside containment; or

(3) One locked closed isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment; or

(4) One automatic isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment.

Isolation valves outside containment shall be located as close to containment as practical and upon loss of actuating power, automatic isolation valves shall be designed to take the position that provides greater safety.

Other appropriate requirements to minimize the probability or consequences of an accidental rupture of these lines or of lines connected to them shall be provided as necessary to assure adequate safety. Determination of the appropriateness of these requirements, such as higher quality in design, fabrication, and testing, additional provisions for inservice inspection, protection against more severe natural phenomena, and additional isolation valves and containment, shall include consideration of the population density, use characteristics, and physical characteristics of the site environs.

Criterion 56 - Primary containment isolation. Each line that connects directly to the containment atmosphere and penetrates primary reactor containment shall be provided with containment isolation valves as follows, unless it can be demonstrated that the containment isolation provisions for a specific class of lines, such as instrument lines, are acceptable on some other defined basis:

(1) One locked closed isolation valve inside and one locked closed isolation valve outside containment; or

(2) One automatic isolation valve inside and one locked closed isolation valve outside containment; or

(3) One locked closed isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment; or

(4) One automatic isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment.

Isolation valves outside containment shall be located as close to the containment as practical and upon loss of actuating power, automatic isolation valves shall be designed to take the position that provides greater safety.

Criterion 57 - Closed system isolation valves. Each line that penetrates primary reactor containment and is neither part of the reactor coolant pressure boundary nor connected directly to the containment atmosphere shall have at least one containment isolation valve which shall be either automatic, or locked closed, or capable of remote manual operation. This valve shall be outside containment and located as close to the containment as practical. A simple check valve may not be used as the automatic isolation valve.

Criteria 54, 55, 56, and 57 specify the number, type, and positions of CIVs required for containment piping penetrations. However, these criteria do not contain provisions describing actions to take if containment isolation valves become inoperable during plant operation.

The regulations in 10 CFR 50.36, "Technical Specifications," provide general requirements for the establishment of TS, including Limiting Conditions of Operation (LCOs), action requirements, and Surveillance Requirements (SRs), but do not provide specific guidance on Actions and CTs when an LCO is not met. The best guidance is that contained in the ISTS, NUREG-1433. The proposed changes associated with the adoption of TSTF-306-A are consistent with NUREG-1433.

Based on these considerations, (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 issuance of the amendment will not be inimical to the common defense and security or the health and safety of the public.

3 Environmental Considerations

A review has determined that the proposed amendment 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, "Standards for Protection Against Radiation," or would change an inspection or surveillance requirement. However, the proposed amendment 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 amendment 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 amendment.

4 References

1. NUREG 1433, Revision 3, "Standard Technical Specifications General Electric Plants, BWR/4," June 2004.

2. NUREG 1434, Revision 3, "Standard Technical Specifications General Electric Plants, BWR/6," June 2004.

3. TSTF-45-A, Revision 2, "Exempt Verification of CIVs that are Not Locked, Sealed or Otherwise Secured," July 26, 1999.

4. TSTF-46-A, Revision 1, "Clarify the CIV Surveillance to Apply Only to Automatic Isolation Valves," March 13, 1997.

5. TSTF-207-A, Revision 5, "Completion Time for Restoration of Various Excessive Leakage Rates," March 24, 2000.

6. TSTF-269-A, Revision 2, "Allow Administrative Means of Position Verification for Locked or Sealed Valves," July 27, 1999.

7. TSTF-295-A, Revision 0, "Modify Note 2 to Actions of PAM Table to Allow Separate Condition Entry for Each Penetration," December 21, 1999.

8. TSTF-306-A, Revision 2, "Add Action to LCO 3.3.6.1 to Give Option to Isolate the Penetration," July 13, 2000.

9. TSTF-323-A, Revision 0, "EFCV Completion Time to 72 hours," March 22, 1999.

10. NEI-06-02, "License Amendment Request Guidelines," December 2006.

11. Letter dated July 26, 1999, W.D. Beckner (NRC) to J. Davis (NEI) (ACN 9907300113).

12. Letter dated May 10, 2005, R.V. Guzman (NRC) to C.M. Cane (Exelon), "Peach Bottom Peach Bottom Atomic Power Station, Units 2 and 3 – Issuance of Amendments Re: Incorporation of Previously NRC Approved Generic Technical Specification Changes (TAC NOs. MC3683, MC3684, MD1516, MD1517, MD1518, MD1519, MD1520, MD1521, MD1522, MD1523, MD1524, MD1525, MD1526, MD1527, MD1528, MD1529, MD1530, MD1531, MD1532, MD1533, MD1534, MD1535, MD1536, MD1537, MD1538, MD1539, MD1540, AND MD1541," (ACN ML061070292).

13. Letter dated July 16, 1998, W.D. Beckner (NRC) to J. Davis (NEI) (ACN 9807280010).

14. Letter dated December 21, 1999, W.D. Beckner (NRC) to J. Davis (NEI) (ACN ML993630256).

15. Letter dated June 5, 2003, R.V. Guzman (NRC) to B.L. Shriver (PPL Susquehanna, LLC), "Susquehanna Steam Electric Station, Units 1 and 2 – Issuance of Amendment Re: Intermittent Opening of Isolated Flow Paths and Tip Isolation (TAC NOs. MB6665 AND MB6666)," (ACN ML031560495).

16. TSTF-30-A, Revision 3, "Extend the Completion Time for Inoperable Isolation Valve to a Closed System to 72 hours," August 16, 1999.

17. Letter dated August 16, 1999, W.D. Beckner (NRC) to J. Davis (NEI) (ACN ML9908250220).

18. Letter dated March 22, 1999, W.D. Beckner (NRC) to J. Davis (NEI) (ACN 9903250187).

19. Letter dated April 5, 2002, S. Monarque (NRC) to D.A. Christian (Dominion), "North Anna Power Station, Units 1 and 2 – Issuance of Amendments Re: Conversion to Improved Technical Specifications (TAC Nos. MB0799 and MB0800)," (ACN ML021200265).

LICENSE AMENDMENT REQUEST FOR PROPOSED CHANGES TO COLUMBIA TECHNICAL SPECIFICATIONS: ADOPTION OF APPROVED GENERIC TECHNICAL SPECIFICATION CHANGES ASSOCIATED WITH CONTAINMENT ISOLATION VALVES
Attachment 2

Proposed Technical Specification Changes

REVISED TECHNICAL SPECIFICATIONS PAGES

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3.3.3.1-4	TSTF-295-A
3.3.6.1-1	TSTF-306-A
3.3.6.1-8	TSTF-306-A
3.6.1.3-1	TSTF-207-A
3.6.1.3-2	TSTF-269-A
3.6.1.3-3	TSTF-207-A, TSTF-323-A
3.6.1.3-4	TSTF-269-A
3.6.1.3-5	TSTF-207-A
3.6.1.3-6	TSTF-45-A
3.6.1.3-7	TSTF-45-A, TSTF-46-A
3.6.4.2-2	TSTF-269-A
3.6.4.2-3	TSTF-45-A, TSTF-46-A

Table 3.3.3.1-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

	FUNCTION	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1
1.	Reactor Vessel Pressure	2	E
2.	Reactor Vessel Water Level		
	a. -150 inches to +60 inches	2	E
	b. -310 inches to -110 inches	2	E
3.	Suppression Pool Water Level		
	a. -25 inches to +25 inches	2	E
	b. 2 ft to 52 ft	2	E
4.	Suppression Chamber Pressure	2	E
5.	Drywell Pressure		
	a. -5 psig to +3 psig	2	E
	b. 0 psig to 25 psig	2	E
	c. 0 psig to 180 psig	2	E
6.	Primary Containment Area Radiation	2	F
7.	PCIV Position	2 per penetration flow path (a)(b)	E
8.	Deleted		
9.	Deleted		
10.	ECCS Pump Room Flood Level	5	E

Penetration Flow Path

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(a) Not required for isolation valves whose associated penetration flow path is isolated by at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.

(b) Only one position indication channel is required for penetration flow paths with only one installed control room indication channel.

3.3 INSTRUMENTATION

3.3.6.1 Primary Containment Isolation Instrumentation

LCO 3.3.6.1 The primary containment isolation instrumentation for each Function in Table 3.3.6.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6.1-1.

ACTIONS

NOTE
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required channels inoperable.	A.1 Place channel in trip.	12 hours for Functions 2.a, 2.c, and 5.d AND 24 hours for Functions other than Functions 2.a, 2.c, and 5.d
B. One or more automatic Functions with isolation capability not maintained.	B.1 Restore isolation capability.	1 hour

1. Penetration flow paths may be unisolated intermittently under administrative controls.

TSTF-306

, and 6.b

(continued)

Table 3.3.6.1-1 (page 4 of 4)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
5. RHR SDC System Isolation					
a. Pump Room Area Temperature – High	3	1 per room	F	SR 3.3.6.1.3 SR 3.3.6.1.4 SR 3.3.6.1.6	≤ 150°F
b. Pump Room Area Ventilation Differential Temperature – High	3	1 per room	F	SR 3.3.6.1.3 SR 3.3.6.1.4 SR 3.3.6.1.6	≤ 70°F
c. Heat Exchanger Area Temperature – High	3	1 per room	F	SR 3.3.6.1.3 SR 3.3.6.1.4 SR 3.3.6.1.6	
Room 505 Area					≤ 140°F
Room 507 Area					≤ 160°F
Room 605 Area					≤ 150°F
Room 606 Area					≤ 140°F
d. Reactor Vessel Water Level – Low, Level 3	3,4,5	2(d)	J	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≥ 9.5 inches
e. Reactor Vessel Pressure – High	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≤ 135 psig
f. Manual Initiation	1,2,3	2	G	SR 3.3.6.1.6	NA

Insert 3.3.6.1-A

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(d) Only one trip system required in MODES 4 and 5 with RHR Shutdown Cooling System integrity maintained.

Insert 3.3.6.1-A

6. Traversing Incore Probe Isolation						
a.	Reactor Vessel Water Level - Low Low, Level 2	1,2,3	2	G	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	$\geq$ -58 inches
b.	Drywell Pressure - High	1,2,3	2	G	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	$\leq$ 1.88 psig

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 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.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ---------NOTE--------- Only applicable to penetration flow paths with two PCIVs. ---------- One or more penetration flow paths with one PCIV inoperable ~~except due to leakage not within limit~~ for reasons other than Condition D.	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 (continued) TSTF-207

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 --------NOTE-------- 1. 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 primary containment AND 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, for isolation devices inside primary containment

S

2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.

TSTF-269

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. ---------NOTE--------- Only applicable to penetration flow paths with two PCIVs. ---------- One or more penetration flow paths with two PCIVs inoperable for reasons other than Condition D. except due to leakage not within limit.	B.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	1 hour TSTF-207
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 D. except due to leakage not within limit.	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 72 12 hours for EFCVs TSTF-323 TSTF-207 (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2 --------NOTE-------- 1. 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 primary containment AND 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, for isolation devices inside primary containment

2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.

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TSTF-269

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more penetration flow paths with secondary containment bypass leakage rate, MSIV leakage rate, or hydrostatically tested lines leakage rate not within limit.	D.1 Restore leakage rate to within limit.	4 hours except for main steam line AND 8 hours for main steam line Insert 3.6.1.3-A TSTF-207
E. Required Action and associated Completion Time of Condition A, B, C, or D not met in MODE 1, 2, or 3.	E.1 Be in MODE 3. AND E.2 Be in MODE 4.	12 hours 36 hours
F. Required Action and associated Completion Time of Condition A, B, C, or D not met for PCIV(s) required to be OPERABLE during MODE 4 or 5.	F.1 Initiate action to suspend operations with a potential for draining the reactor vessel (OPDRVs). OR F.2 Initiate action to restore valve(s) to OPERABLE status.	Immediately Immediately

Insert 3.6.1.3-A

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

72 hours for hydrostatically tested line leakage on a closed system

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.1	----------NOTE---------- Not required to be met when the 24 inch and 30 inch primary containment purge valves are open for inerting, de-inerting, pressure control, ALARA or air quality considerations for personnel entry, or Surveillances that require the valves to be open. ---------- Verify each 24 inch and 30 inch primary containment purge valve is closed.	31 days
SR 3.6.1.3.2	----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. ---------- Verify each primary containment isolation manual valve and blind flange that is located outside primary containment and is required to be closed during accident conditions is closed.	31 days

TSTF-45

and not locked, sealed, or otherwise secured

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.3	----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. ----------	
	Verify each primary containment isolation manual valve and blind flange that is located inside primary containment and is required to be closed during accident conditions is closed. and not locked, sealed, or otherwise secured	Prior to entering MODE 2 or 3 from MODE 4 if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days
SR 3.6.1.3.4	Verify continuity of the traversing incore probe (TIP) shear isolation valve explosive charge.	31 days
SR 3.6.1.3.5	Verify the isolation time of each power operated ~~and each~~ automatic PCIV, except MSIVs, is within limits.	In accordance with the Inservice Testing Program

TSTF-45

TSTF-46

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 --------NOTE-------- (S) (1.) 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
B. ---------NOTE--------- Only applicable to penetration flow paths with two isolation valves. ---------- One or more penetration flow paths with two SCIVs inoperable.	B.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	4 hours
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours
D. Required Action and associated Completion Time of Condition A or B not met during OPDRVs.	D.1 Initiate action to suspend OPDRVs.	Immediately

2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.

TSTF-269

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY	
SR 3.6.4.2.1	----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative controls. 2. Not required to be met for SCIVs that are open under administrative controls. ----------		
	Verify each secondary containment isolation manual valve and blind flange that is not locked, sealed, or otherwise secured, and is required to be closed during accident conditions is closed.	31 days	TSTF-45
SR 3.6.4.2.2	Verify the isolation time of each power operated ~~and each~~ automatic SCIV is within limits.	In accordance with the Inservice Testing Program	TSTF-46
SR 3.6.4.2.3	Verify each automatic SCIV actuates to the isolation position on an actual or simulated automatic isolation signal.	24 months	

LICENSE AMENDMENT REQUEST FOR PROPOSED CHANGES TO COLUMBIA TECHNICAL SPECIFICATIONS: ADOPTION OF APPROVED GENERIC TECHNICAL SPECIFICATION CHANGES ASSOCIATED WITH CONTAINMENT ISOLATION VALVES
Attachment 3

Proposed Technical Specification Bases Changes

REVISED TECHNICAL SPECIFICATION BASES PAGES

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B 3.3.6.1-29	TSTF-306-A
B 3.3.6.1-30	TSTF-306-A
B 3.3.6.1-34	TSTF-306-A
B 3.6.1.3-6	TSTF-269-A
B 3.6.1.3-7	TSTF-323-A
B 3.6.1.3-8	TSTF-207-A, TSTF-269-A
B 3.6.1.3-10	TSTF-45-A
B 3.6.1.3-11	TSTF-45-A
B 3.6.1.3-12	TSTF-46-A
B 3.6.4.2-2	TSTF-46-A
B 3.6.4.2-4	TSTF-269-A
B 3.6.4.2-6	TSTF-45-A
B 3.6.4.2-7	TSTF-46-A

BASES

LCO

5.a, 5.b, 5.c. Drywell Pressure (continued)

that are transmitted from separate pressure transmitters and are continuously recorded and displayed on two control room recorders. The range of recording is from -5 psig to 180 psig. These recorders are the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channel.

6. Primary Containment Area Radiation (High Range)

Primary containment area radiation (high range) is a Category I variable provided to monitor for the potential of significant radiation releases and to provide release assessment for use by operators in determining the need to invoke site emergency plans.

Two detectors are located inside containment that have a range from 10^0 R/hr to 10^7 R/hr. These monitors respond to gamma radiation of 60 KeV as required by Regulatory Guide 1.97 to see the Xe-133 gases. These radiation monitors display on recorders located in the control room. Therefore, the PAM Specification deals specifically with this portion of the instrument channel.

Penetration Flow Path

7. Primary Containment Isolation Valve (PCIV) Position TSTF-295

PCIV (excluding check valves) position is a Category I variable provided for verification of containment integrity. In the case of PCIV position, the important information is the isolation status of the containment penetration. The LCO requires one channel of valve position indication in the control room to be OPERABLE for each active PCIV in a containment penetration flow path, i.e., two total channels of PCIV position indication for a penetration flow path with two active valves. For containment penetrations with only one active PCIV having control room indication, Note (b) requires a single channel of valve position indication to be OPERABLE. This is sufficient to verify redundantly the isolation status of each isolable penetration via indicated status of the active valve, as applicable, and prior knowledge of passive valve or system boundary status. If a

(continued)

BASES

LCO

7. Primary Containment Isolation Valve (PCIV) Position (continued)

Penetration Flow Path

penetration is isolated, position indication for the PCIV(s) in the associated penetration flow path is not needed to determine status. Therefore, the position indication for valves in an isolated penetration is not required to be OPERABLE. TSTF-295

Each penetration is treated separatly and each penetration flow path is considered a separate function. Therefore, separate Condition entry is allowed for each inoperable penetration flow path.

The indication for each PCIV is provided at the valve controls in the control room. Each indication consists of green and red indicator lights that illuminate to indicate whether the PCIV is fully open, fully closed, or in a mid-position. Therefore, the PAM specification deals specifically with this portion of the instrumentation channel.

8, 9. Deleted

10. ECCS Pump Room Flood Level

ECCS pump room flood level is a Type A and Category I variable provided to indicate ECCS pump room flooding. High water level in the ECCS pump rooms is indicated on five (one for each room) separate annunciators in the control room. Each annunciator alarms at a setpoint of 6 inches above the room's floor level. These annunciators are the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channel.

APPLICABILITY

The PAM instrumentation LCO is applicable in MODES 1 and 2. These variables are related to the diagnosis and preplanned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1 and 2. In MODES 3, 4, and 5, plant conditions are such that the likelihood of an event that would require PAM instrumentation is extremely low; therefore, PAM instrumentation is not required to be OPERABLE in these MODES.

(continued)

BASES

BACKGROUND

1. Main Steam Line Isolation (continued)

two associated switch and push buttons are required to actuate the inboard valve trip system and both channels from each of the two associated switch and push buttons are required to actuate the outboard valve trip system).

MSL Isolation Functions isolate the Group 1 valves.

2. Primary Containment Isolation

Most Primary Containment Isolation Functions receive inputs from four channels. The outputs from these channels are arranged into two-out-of-two logic trip systems. For the Manual Initiation Function of the Group 3 PCIVs, four channels are required to actuate a trip system (a four-out-of-four logic trip system). One trip system initiates isolation of all inboard PCIVs, while the other trip system initiates isolation of all outboard PCIVs. Each trip system logic closes one of the two valves on each penetration so that operation of either trip system isolates the penetration.

The exceptions to this arrangement are the Traversing In-core Probe (TIP) System valves/drives and the Group 5 PCIVs. For the TIP System valves and drive mechanisms, only one trip system (the inboard valve system) is provided. When the trip system actuates, the drive mechanisms withdraw the TIPs, and when the TIPs are fully withdrawn, the ball valves close. The Group 5 PCIVs need only one trip system (the inboard valve system) to isolate all Group 5 valves.

Reactor Vessel Level—Low, Level 3 Function isolates the Group 5 valves. Reactor Vessel Water Level—Low, Low, Level 2 Function isolates the Group 2, 3, and 4 valves. Drywell Pressure—High and Manual Initiation Functions isolates the Group 2, 3, 4, and 5 valves. Reactor Building Vent Exhaust Plenum Radiation—High Function isolates the Group 3 valves.

(continued)

BASES

BACKGROUND

5. RHR Shutdown Cooling System Isolation (continued)

trip system, with the channels connected in a two-out-of-two logic. One trip system isolates the inboard valve and the other trip system isolates the outboard valves.

Insert B 3.3.6.1-A

The RHR Shutdown Cooling Isolation Functions isolate the Group 6 valves.

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

The isolation signals generated by the primary containment isolation instrumentation are implicitly assumed in the safety analyses of References 1 and 2 to initiate closure of valves to limit offsite doses. Refer to LCO 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," Applicable Safety Analyses Bases, for more detail.

Primary containment isolation instrumentation satisfies Criterion 3 of Reference 3. Certain instrumentation Functions are retained for other reasons and are described below in the individual Functions discussion.

The OPERABILITY of the primary containment instrumentation is dependent on the OPERABILITY of the individual instrumentation channel Functions specified in Table 3.3.6.1-1. Each Function must have a required number of OPERABLE channels, with their setpoints within the specified Allowable Values, where appropriate. The actual setpoint is calibrated consistent with applicable setpoint methodology assumptions. Each channel must also respond within its assumed response time, where appropriate.

Allowable Values are specified for each Primary Containment Isolation Function specified in the Table. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure that the setpoints do not exceed the Allowable Value between CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value. Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., reactor vessel water level), and when the measured output value of the process parameter exceeds the setpoint,

(continued)

Insert B 3.3.6.1-A

6. Traversing Incore Probe System Isolation

The Reactor Vessel Water Level – Low Low, Level 2 Isolation Function receives input from two reactor vessel water level channels. The Drywell Pressure – High Isolation function receives input from two drywell pressure channels. These channels provide input to two logic trip circuits grouped in one-out-of-two logic. Each of these trip circuits is connected in one-out-of-two taken twice logic such that a Low Low, Level 2 (C) or Drywell Pressure – High (C) input and a Low Low, Level 2 (D) or Drywell Pressure – High (D) input will initiate an isolation of the TIP valves.

When either Isolation Function actuates, the TIP drive mechanisms will withdraw the TIPs, if inserted, and close the inboard TIP system isolation ball valves when the TIPs are fully withdrawn. The outboard TIP system isolation valves are manual shear valves.

TIP System Isolation Functions isolate the inboard isolation ball valves that are in Group 4.

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

5.e. Reactor Vessel Pressure—High (continued)

Dome Pressure—High Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Value was chosen to be low enough to protect the system equipment from overpressurization.

This Function isolates the Group 6 valves.

5.f. Manual Initiation

The Manual Initiation switch and push button channels introduce signals into the RHR Shutdown Cooling System isolation logic that are redundant to the automatic protective instrumentation and provide manual isolation capability. There is no specific FSAR safety analysis that takes credit for this Function. It is retained for overall redundancy and diversity of the isolation function as required by the NRC in the plant licensing basis.

There are two switch and push buttons (with two channels per switch and push button) for the logic, one switch and push button per trip system. Four channels of the Manual Initiation Function are available and are required to be OPERABLE in MODES 1, 2, and 3 since these are the MODES in which the RHR Shutdown Cooling System Isolation automatic Functions are required to be OPERABLE. While certain automatic Functions are required in MODES 4 and 5, the Manual Initiation Function is not required in MODES 4 and 5, since there are other means (i.e., means other than the Manual Initiation switch and push buttons) to manually isolate the RHR Shutdown Cooling System from the control room.

There is no Allowable Value for this Function, since the channels are mechanically actuated based solely on the position of the switch and push buttons.

Insert B 3.3.6.1-B → This Function isolates the Group 6 valves. TSTF-306

(continued)

Insert B 3.3.6.1-B

6. Traversing Incore Probe System Isolation

6.a. Reactor Vessel Water Level — Low Low, Level 2

Low RPV water level indicates that the capability to cool the fuel may be threatened. The valves whose penetrations communicate with the primary containment are isolated to limit the release of fission products. The isolation of the primary containment on Level 2 supports actions to ensure that offsite dose limits of 10 CFR 50.67 are not exceeded. The Reactor Vessel Water Level - Low Low, Level 2 Function associated with isolation is implicitly assumed in the FSAR analysis as these leakage paths are assumed to be isolated post LOCA.

Reactor Vessel Water Level — Low Low, Level 2 signals are initiated from two differential pressure switches that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel. Two channels of Reactor Vessel Water Level — Low Low, Level 2 Function are available and are required to be OPERABLE to ensure that no single instrument failure can initiate an inadvertent isolation actuation. The isolation function is ensured by the manual shear valve in each penetration.

The Reactor Vessel Water Level — Low Low, Level 2 Allowable Value was chosen to be the same as the ECCS Reactor Vessel Water Level — Low Low, Level 2 Allowable Value (LCO 3.3.5.1), since isolation of these valves is not critical to orderly plant shutdown.

This Function isolates the Group 4 valves.

6.b. Drywell Pressure — High

High drywell pressure can indicate a break in the RCPB inside the primary containment. The isolation of some of the primary containment isolation valves on high drywell pressure supports actions to ensure that offsite dose limits of 10 CFR 50.67 are not exceeded. The Drywell Pressure — High Function, associated with isolation of the primary containment, is implicitly assumed in the FSAR accident analysis as these leakage paths are assumed to be isolated post LOCA.

High drywell pressure signals are initiated from pressure transmitters that sense the pressure in the drywell. Two channels of Drywell Pressure — High per Function are available and are required to be OPERABLE to ensure that no single instrument failure can initiate an inadvertent actuation. The isolation function is ensured by the manual shear valve in each penetration.

The Allowable Value was selected to be the same as the ECCS Drywell Pressure — High Allowable Value (LCO 3.3.5.1), since this may be indicative of a LOCA inside primary containment.

This Function isolates the Group 4 valves.

BASES (continued)

ACTIONS

Insert B 3.3.6.1-C

A Note 2 has been provided to modify the ACTIONS related to primary containment isolation instrumentation channels. TSTF-306 Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable primary containment isolation instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable primary containment isolation instrumentation channel.

A.1

Because of the diversity of sensors available to provide isolation signals and the redundancy of the isolation design, an allowable out of service time of 12 hours or 24 hours, depending on the Function (12 hours for those Functions that have channel components common to RPS instrumentation and 24 hours for those Functions that do not have channel components common to RPS instrumentation), has been shown to be acceptable (Refs. 10 and 11) to permit restoration of any inoperable channel to OPERABLE status. This out of service time is only acceptable provided the associated Function is still maintaining isolation capability (refer to Required Action B.1 Bases). If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, the channel must be placed in the tripped condition per Required Action A.1. Placing the inoperable channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue with no further restrictions. Alternately, if it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel in trip would result in an isolation), Condition C must be entered and its Required Action taken.

(continued)

Insert B 3.3.6.1-C

The ACTIONS are modified by two Notes. Note 1 allows penetration flow paths to be unisolated intermittently under administrative controls. These controls consist of stationing a dedicated operator at the controls of the valve, who is in continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for primary containment isolation is indicated.

BASES

ACTIONS (continued)

G.1

If the channel is not restored to OPERABLE status or placed in trip within the allowed Completion Time, plant operations may continue if the affected penetration flow path(s) is isolated. Isolating the affected penetration flow path(s) accomplishes the safety function of the inoperable channel.

The 24 hour Completion Time is acceptable due to the fact that these Functions (either Manual Initiation) are not assumed in any accident or transient analysis in the FSAR. TSTF-306

Insert B 3.3.6.1-D

Alternately, if it is not desired to isolate the affected penetration flow path(s) (e.g., as in the case where isolating the penetration flow path(s) could result in a reactor scram), Condition H must be entered and its Required Actions taken.

H.1 and H.2

If the channel is not restored to OPERABLE status or placed in trip, or any Required Action of Condition F or G is not met and the associated Completion Time has expired, the plant must be placed in a MODE or other specified condition in which the LCO does not apply. This is done by placing the plant in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

I.1 and I.2

If the channel is not restored to OPERABLE status within the allowed Completion Time, the associated SLC subsystem is declared inoperable or the RWCU System is isolated. Since this Function is required to ensure that the SLC System performs its intended function, sufficient remedial measures are provided by declaring the associated SLC subsystem inoperable or isolating the RWCU System.

The Completion Time of 1 hour is acceptable because it minimizes risk while allowing sufficient time for personnel to isolate the RWCU System.

(continued)

Insert B 3.3.6.1-D

or, in the case of the TIP System isolation, the TIP system penetration is a small bore (approximately 3/8 inch), its isolation in a design basis event (with loss of offsite power) would be via the manually operated shear valves, and the ability to manually isolate by either the normal isolation valve or the shear valve is unaffected by the inoperable instrumentation.

BASES

ACTIONS

A.1 and A.2 (continued)

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 PCIVs. For penetration flow paths with one PCIV, Condition C provides appropriate Required Actions.

Required Action A.2 is modified by a Note that 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. Therefore, the probability of misalignment, once they have been verified to be in the proper position, is low.

TSTF-269

Insert B 3.6.1.3-A

B.1

With one or more penetration flow paths with two PCIVs inoperable except for secondary containment bypass leakage rate, MSIV leakage rate, or hydrostatically tested lines leakage rate not within limits, either the inoperable PCIVs must be restored to OPERABLE status or the affected penetration flow path must be isolated within 1 hour. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. The 1 hour Completion Time is consistent with the ACTIONS of LCO 3.6.1.1.

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

(continued)

Insert B 3.6.1.3-A

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.

BASES

ACTIONS (continued)

C.1 and C.2

When one or more penetration flow paths with one PCIV inoperable except for secondary containment bypass leakage rate, MSIV leakage rate, or hydrostatically tested lines leakage rate not within limits, the inoperable valve must be restored to OPERABLE status or the affected penetration flow path must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. A check valve may not be used to isolate the affected penetration. Required Action C.1 must be completed within 4 hours for lines other than excess flow check valve (EFCV) lines and 72 hours for EFCV lines. The 4 hour Completion Time is reasonable considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of supporting primary containment OPERABILITY during MODES 1, 2, and 3. The Completion Time of 72 hours is also reasonable considering the mitigating effects of the small pipe diameter and restricting orifice, and the isolation boundary provided by the instrument. 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. This Required Action does not require any testing or valve 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 valves 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 judgement and is considered reasonable in view of the inaccessibility of the devices and other administrative controls ensuring that device misalignment is an unlikely possibility.

TSTF-323

72 for EFCVs

(continued)

BASES

ACTIONS

C.1 and C.2 (continued)

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.

two s. Note 1

Required Action C.2 is modified by a Note that 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. Therefore, the probability of misalignment, once they have been verified to be in the proper position, is low.

TSTF-269

Insert B 3.6.1.3-B

D.1

SR 3.6.1.3.11 SR 3.6.1.3.10 SR 3.6.1.3.12

With the secondary containment bypass leakage rate, MSIV leakage rate, or hydrostatically tested lines leakage rate not within limit, the assumptions of the safety analysis may not be met. Therefore, the leakage must be restored to within limit within 4 hours (8 hours for main steam lines). Restoration can be accomplished by isolating the penetration that caused the limit to be exceeded by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. When a penetration is isolated, the leakage rate for the isolated penetration is assumed to be the actual pathway leakage through the isolation device. If two isolation devices are used to isolate the penetration, the leakage rate is assumed to be the lesser actual pathway leakage of the two devices. The 4 hour Completion Time is reasonable considering the time required to restore the leakage by isolating the penetration and the relative importance of leakage to the overall containment function. 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.

for hydrostatically tested line leakage not on a closed system and for secondary containment bypass leakage

TSTF-207

MSIV leakage

MSIV leakage

Insert B 3.6.1.3-C

(continued)

Insert B 3.6.1.3-B

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.

Insert B 3.6.1.3-C

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 an associated closed system.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3.1 (continued)

are allowed to be open for limited periods of time. The 31 day Frequency is consistent with other PCIV requirements discussed in SR 3.6.1.3.2.

SR 3.6.1.3.2

This SR verifies that each primary containment isolation manual valve and blind flange that is located outside primary containment and is required to be closed during accident conditions, is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside of the primary containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification that those isolation devices outside primary containment, and not locked, are in the correct position. Since verification of valve position for isolation devices outside primary containment is relatively easy, the 31 day Frequency was chosen to provide added assurance that the isolation devices are in the correct positions.

and not locked, sealed, or otherwise secured

TSTF-45

Insert B 3.6.1.3-D

Two Notes are added to this SR. The first Note applies to valves and blind flanges located in high radiation areas and allows them to be verified by use of administrative controls. Allowing verification by administrative controls is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, and 3 for ALARA reasons. Therefore, the probability of misalignment of these isolation devices, once they have been verified to be in the proper position, is low. A second Note is included to clarify that PCIVs open under administrative controls are not required to meet the SR during the time the PCIVs are open. These controls consist of stationing a dedicated operator at the controls of the valve, who is in continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for primary containment isolation is indicated.

(continued)

Insert B 3.6.1.3-D

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

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.3

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

and not locked, sealed, or otherwise secured

TSTF-45

Insert B 3.6.1.3-E

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 the primary containment is inerted and access to these areas is typically restricted during MODES 1, 2, and 3 for ALARA and personnel safety. Therefore, the probability of misalignment of these isolation devices, 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. These controls consist of stationing a dedicated operator at the controls of the valve, who is in continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for primary containment isolation is indicated.

SR 3.6.1.3.4

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 and operating life, as applicable, 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.

(continued)

Insert B 3.6.1.3-E

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

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.5

Verifying the isolation time of each power operated ~~and each~~ automatic PCIV is within limits is required to demonstrate OPERABILITY. MSIVs may be excluded from this SR since MSIV full closure isolation time is demonstrated by SR 3.6.1.3.6. The isolation time test ensures that each valve will isolate in a time period less than or equal to that assumed in the safety analysis. The Frequency of this SR is in accordance with the Inservice Testing Program.

TSTF-46

SR 3.6.1.3.6

Verifying that the full closure isolation time of each MSIV is within the specified limits is required to demonstrate OPERABILITY. The full closure isolation time test ensures that the MSIV will isolate in a time period that does not exceed the times assumed in the DBA and transient analyses. The Frequency of this SR is in accordance with the Inservice Testing Program.

SR 3.6.1.3.7

Automatic PCIVs close on a primary containment isolation signal to prevent leakage of radioactive material from primary containment following a DBA. This SR ensures that each automatic PCIV will actuate to its isolation position on a primary containment isolation signal. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.6.1, "Primary Containment Isolation Instrumentation," overlaps this SR to provide complete testing of the safety function. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for 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 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

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

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

SCIVs satisfy Criterion 3 of Reference 3.

LCO

SCIVs form a part of the secondary containment boundary. The SCIV safety function is related to control of offsite radiation releases resulting from DBAs.

The automatic power operated isolation valves are considered OPERABLE when their isolation times are within limits and the valves actuate on an automatic isolation signal. The valves covered by this LCO, along with their associated stroke times, are listed in Reference 4. TSTF-46

The normally closed isolation valves or blind flanges are considered OPERABLE when manual valves are closed or open in accordance with appropriate administrative controls, automatic SCIVs are de-activated and secured in their closed position, and blind flanges are in place. These passive isolation valves or devices are listed in Reference 4.

APPLICABILITY

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

In MODES 4 and 5, the probability and consequences of these events are reduced due to pressure and temperature limitations in these MODES. Therefore, maintaining SCIVs

(continued)

BASES

ACTIONS A.1 and A.2 (continued)

secondary containment. This Required Action must be completed within the 8 hour Completion Time. The specified time period is reasonable considering the time required to isolate the penetration and the low probability of a DBA, which requires the SCIVs to close, occurring during this short time.

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

Required Action A.2 is modified by two Notes. Note 1 applies to devices located in high radiation areas and allows them to be verified by use of administrative controls. Allowing verification by administrative controls is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment, once they have been verified to be in the proper position, is low. TSTF-269

Insert B 3.6.4.2-A

B.1

With two SCIVs in one or more penetration flow paths inoperable, the affected penetration flow path must be isolated within 4 hours. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. The 4 hour Completion Time is reasonable,

(continued)

Insert B 3.6.4.2-A

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.

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.6.4.2.1

not locked, sealed, or otherwise secured, and is

This SR verifies each secondary containment isolation manual valve and blind flange that is required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside of the secondary containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification that those SCIVs in secondary containment that are capable of being mispositioned are in the correct position. TSTF-45

Since these SCIVs are readily accessible to personnel during normal unit operation and verification of their position is relatively easy, the 31 day Frequency was chosen to provide added assurance that the SCIVs are in the correct positions.

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.

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

A second Note has been included to clarify that SCIVs that are open under administrative controls are not required to meet the SR during the time the SCIVs are open. These controls consist of stationing a dedicated operator at the controls of the valve, who is in continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for secondary containment isolation is indicated.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.4.2.2

Verifying the isolation time of each power operated and each automatic SCIV listed in Licensee Controlled Specification Table 1.6.4.2-1 is within limits is required to demonstrate OPERABILITY. The isolation time test ensures that the SCIV will isolate in a time period less than or equal to that assumed in the safety analyses. The Frequency of this SR is in accordance with the Inservice Testing Program. TSTF-46

SR 3.6.4.2.3

Verifying that each automatic SCIV closes on a secondary containment isolation signal is required to prevent leakage of radioactive material from secondary containment following a DBA or other accidents. This SR ensures that each automatic SCIV will actuate to the isolation position on a secondary containment isolation signal. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," overlaps this SR to provide complete testing of the safety function. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

REFERENCES

1. FSAR, Section 15.6.5.
2. FSAR, Section 6.2.3.2.
3. 10 CFR 50.36(c)(2)(ii).
4. Licensee Controlled Specifications Manual.