

**MODEL APPLICATION FOR PLANT-SPECIFIC ADOPTION OF TSTF-446, REVISION 3,
“RISK INFORMED EVALUATION OF EXTENSIONS TO CONTAINMENT ISOLATION VALVE
COMPLETION TIMES (WCAP-15791)”**

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

SUBJECT: [PLANT]
DOCKET NO. 50-[XXX]
LICENSE AMENDMENT REQUEST FOR ADOPTION OF TECHNICAL
SPECIFICATIONS TASK FORCE (TSTF) TRAVELER TSTF-446, REVISION 3,
“RISK INFORMED EVALUATION OF EXTENSIONS TO CONTAINMENT
ISOLATION VALVE COMPLETION TIMES (WCAP-15791)”

In accordance with the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.90, “Application for Amendment of License, Construction Permit, or Early Site Permit,” [LICENSEE] is submitting a request for an amendment to [PLANT] Technical Specifications (TS) to incorporate the NRC-approved TSTF-446, Revision 3.

The proposed amendment would modify the TS requirements for completion time changes for containment isolation valves with the implementation of Technical Specifications Task Force (TSTF) Traveler TSTF-446, Revision 3, “Risk Informed Evaluation of Extensions to Containment Isolation Valve Completion Times (WCAP-15791).” This model application addresses implementation of the generic analysis and associated Completion Times contained in Section 8 of WCAP-15791-P-A, Revision 2 (Proprietary).

Attachment 1 provides a description of the proposed change, the requested confirmation of applicability, and plant-specific verifications. Attachment 2 provides the existing TS pages marked to show the proposed change. Attachment 3 provides the proposed TS pages in final typed format. Attachment 4 summarizes the regulatory commitments made in this submittal. Attachment 5 provides the proposed changes to the existing TS Bases. Attachment 6 provides the No Significant Hazards Consideration Determination. Attachment 7 provides plant-specific information.

[LICENSEE] requests approval of the proposed license amendment by [DATE], with the amendment being implemented [BY DATE OR WITHIN X DAYS].

In accordance with 10 CFR 50.91(a)(1), “Notice for public comment,” a copy of this application, with attachments, including the analysis about the issue of no significant hazards consideration using the standards in 10 CFR 50.92 is being provided to the Commission in accordance with the distribution requirements in 10 CFR 50.4.

In accordance with 10 CFR 50.91(b)(1), "State consultation," a copy of this application and the reasoned analysis about no significant hazards consideration is being provided to the designated [STATE] Official.

I declare [or certify, verify, state] under penalty of perjury that the foregoing is correct and true.

Executed on [date] [Signature]

If you should have any questions about this submittal, please contact [NAME, TELEPHONE NUMBER].

Sincerely,

[Name, Title]

Attachments: [As stated or provide list]

cc: [NRR Project Manager]
[Regional Office]
[Resident Inspector]
[State Contact]

ATTACHMENT 1: DESCRIPTION AND ASSESSMENT

1.0 DESCRIPTION

The proposed amendment would modify Technical Specifications (TS) requirements for completion times (CTs) for containment isolation valves (CIVs) with the adoption of Risk Informed Technical Specifications Task Force Initiative 4a regarding TSTF-446, Revision 3, "Risk Informed Evaluation of Extensions to Containment Isolation Valve Completion Times (WCAP-15791)." The changes are consistent with the U.S. Nuclear Regulatory Commission (NRC) approved TSTF-446, Revision 3. The *Federal Register* notice published on [DATE] ([] FR []) announced the availability of this TS improvement.

2.0 ASSESSMENT

2.1 Applicability of Published Safety Evaluation

[LICENSEE] has reviewed the model safety evaluation (SE) dated [DATE]. [LICENSEE] has also reviewed the NRC staff SE (ADAMS Accession No. ML080170680) approving Topical Report (TR) WCAP-15791-P-A, Revision 2, and the requirements specified in Nuclear Energy Institute (NEI) 99-04, "Guidelines for Managing NRC Commitment Changes." [LICENSEE] has concluded that the justifications and Probabilistic Risk Assessment (PRA) assumptions presented in the TR and the SE are applicable to [PLANT] and justifies this amendment for the incorporation of the changes based on the generic analysis to the [PLANT] TS.

2.2 Optional Changes and Variation

[LICENSEE] is not proposing any variations or deviations from the Standard Technical Specifications (STS) changes described in TSTF-446, Revision 3, and the NRC staff model SE, dated [DATE], for implementation of the completion times based on the generic analysis. [If the licensee proposes variations or deviations, then the licensee will describe and justify these variations/deviations and include a statement, such as, the proposed amendment is consistent with the STS changes described in TSTF-446, Revision 3, but [LICENSEE] proposes variations or deviations from TSTF-446, as identified and justified below.]

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration

[LICENSEE] has submitted a No Significant Hazards Consideration (NSHC) analysis applicable to [PLANT] as Attachment [] to this amendment request pursuant to the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.91(a). Also, pursuant to the requirements of 10 CFR Section 50.91(b), [LICENSEE] has notified the appropriate State officials by providing them with a copy of its application and reasoned analysis about the NSHC.

{REVIEWER'S NOTE: The model application contains a model No Significant Hazards Consideration analysis as an example for the licensee to consider in preparing the NSHC for Plant-Specific adoption of TSTF-446.}

3.2 Verifications, Commitments, and Additional Information Needed

[LICENSEE] has demonstrated the applicability of the generic completion times contained in TSTF-446, Revision 3, to [PLANT] by addressing requirements specified in TR WCAP-15791-P-A, Revision 2 (Proprietary), in this license amendment request (LAR). This LAR provides the plant-specific information on limitations and conditions specified in Section 4.0 and the additional information specified in Section 5.0 of the SE approving TR WCAP-15791-P-A, Revision 2. In addition, consistent with TSTF-446, [LICENSEE] must provide information for Items 3.2.1 through 3.2.8 as discussed below in this amendment request.

{REVIEWER'S NOTE: Section 4.0 of the SE approving TR WCAP-15791-P-A, Revision 2, is addressed by implementing TSTF-446, Revision 3, which includes new Condition D. Section 5.0 of the SE approving TR WCAP-15791-P-A, Revision 2, is addressed by items 3.2.1 through 3.2.8 below.}

3.2.1 Demonstration (Penetration and CIV Configuration)

[LICENSEE] has confirmed that (a) the penetration and CIV configurations for [PLANT] match the configurations in TR WCAP-15791-P-A, Revision 2, and (b) the input parameter values used in the TR are representative or bounding for [PLANT].

{REVIEWER'S NOTE: Not all penetrations have the same impact on core damage frequency (CDF), large early release frequency (LERF), incremental conditional core damage probability (ICCDP or ICDP), or incremental conditional large early release probability (ICLERP or ILERP), therefore, the licensee needs to address the applicability of TR WCAP-15791-P-A, Revision 2, to the specific plant. This Penetration and CIV configuration assessment must include verification that (a) the Penetration and CIV configurations for the specific plant match the configurations in the TR and (b) the input parameter values used in the TR are bounding for the specific plant.}

3.2.2 Demonstration (Tier 2 Evaluation)

[LICENSEE] has confirmed the conclusion in the TR that no Tier 2 requirements are needed other than a requirement to ensure that before maintenance or corrective maintenance (repair) is performed on a CIV, any other CIVs in the penetration flow path have been checked to ensure that they are in their proper position.

{REVIEWER'S NOTE: A Tier 2 conclusion of the TR as applicable to the specific plant, or the plant specific Tier 2 requirements must be provided by the licensee.}

3.2.3 Demonstration (Tier 3 Evaluation)

[LICENSEE] has addressed a Tier 3 evaluation for [PLANT] by demonstrating conformance to the requirements of the maintenance rule (i.e., 10 CFR 50.65(a)(4)) as the requirements relate to the proposed CIV CTs and the guidance contained in the Nuclear Management and Resources Council (NUMARC) document, NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2, Section 11, issued April 1996, as endorsed by RG 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants," issued May 2000. In Attachment 7, [LICENSEE] has provided

documentation on the [LICENSEE'S] maintenance rule program, with respect to CIVs, which includes a LERF/ICLERP (i.e., ILERP as defined in NUMARC 93-01) assessment as part of the maintenance rule process, and that the PRA quality is adequate for performing a Tier 3 evaluation.

{REVIEWER'S NOTE: The licensee should describe in Attachment 7 the configuration risk management program (CRMP) or maintenance rule (10 CFR 50.65(a)(4)) program (as appropriate), including how it reflects the current PRA model, any simplifications or deviations in the CRMP model from the current plant PRA model, and methods to update the CRMP to reflect the current plant-specific PRA model associated with implementing the CIV completion time changes.}

The licensee will address the Tier 3 aspects of RG 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," August 1998, including a description of the CRMP, and confirm that the licensee's CRMP meets all aspects of Section 2.3.7.2, "Key Components of the CRMP," of RG 1.177, including the referenced four key components, associated with implementing the CIV completion time changes.

Additionally, the licensee will confirm that the plant (units) conforms to the requirements of the maintenance rule, as they relate to the proposed CIV CTs and the guidance contained in NUMARC 93-01, Section 11, as endorsed by RG 1.182, including verification that the maintenance rule program, with respect to CIVs, includes a LERF and ICLERP assessment, as part of the maintenance rule process, and that the CRMP is adequate, as part of the basis for evaluating the risk impact of CIV maintenance configurations. The licensee needs to confirm that its CRMP model calculates ICCDP (or ICDP) and ICLERP (or ILERP) and that the licensee's model is capable of modeling CIVs or will be modified to include CIVs.}

3.2.4 Demonstration (Plant-Specific PRA Quality)

[LICENSEE] has demonstrated in Attachment 7 that the plant-specific PRA quality is acceptable for Tier 3 assessments associated with implementing the CIV completion time changes in this application, in accordance with the guidelines given in RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," November 2002, and RG 1.177.

{REVIEWER'S NOTE: The licensee should describe in Attachment 7 the scope of the plant-specific PRA and justify its technical adequacy for performing a Tier 3 evaluation in accordance with the guidance provided in RG 1.174 and RG 1.177. Specifically, the supporting documentation needs to address each area in sufficient detail to satisfy the following:

- Assurance that the plant-specific PRA reasonably reflects the as-built, as-operated plant.
- Assurance that plant-specific PRA updates, including any plant improvements or commitments cited and credited in the analysis, have been implemented from the individual plant evaluation (IPE) and the IPE for external events (IPEEE) and subsequent peer reviews and self-

assessments. Reference to past submittals discussing this information is acceptable.

- Assurance that conclusions from the peer review, including facts and observations (A and B, currently referred to as Findings), that are applicable to proposed extended CTs for CIVs were considered and resolved associated with the parameters used to demonstrate the applicability of the generic analysis and associated completion times. If not resolved, the licensee must provide the justification for the acceptability of the conclusions (e.g., sensitivity studies showing negligible impact). The licensee should indicate the PRA revisions that underwent the peer review and were used in the plant-specific application.
- Assurance that there is PRA configuration control and updating, including PRA quality assurance programs, associated procedures, and PRA revision schedules.
- Assurance that there is PRA adequacy, completeness, and applicability with respect to evaluating the risk associated with the proposed CIV CT extensions, i.e., that the model is capable of supporting a CRMP assessment when a CIV is inoperable.
- Assurance that plant design or operational modifications that are related to or could affect the proposed CT extensions are reflected in the PRA revision used in the plant-specific application or that a justification is provided for not including these modifications in the PRA.}

3.2.5 Demonstration (external events risk)

[LICENSEE] has demonstrated in Attachment 7 that external events risk is bounded by the assumptions in TR WCAP-15791-P-A, Revision 2, and will not have an adverse impact on the conclusions of the [PLANT] analysis for extending the CIV CTs.

{REVIEWER'S NOTE: External events may include seismic, tornados or high winds, internal or external fires, floods, or other related events applicable to each licensee. The licensee needs to demonstrate, by either quantitative or qualitative means, that external event risk is consistent with the generic analysis. For some participating plants, internal fires and other external event risks may contribute significantly to the overall plant baseline risk, which may affect TR WCAP-15791-P-A, Revision 2, so that a plant-specific application of the TR methodology may not be found acceptable in all cases. Specifically, the risk from external events should not make the total baseline risk exceed 1E-4/yr CDF or 1E-5/yr LERF without justification.}

3.2.6 Demonstration (CIV Availability Monitoring)

[LICENSEE] has demonstrated in Attachment 7 for [PLANT] how plant-specific CIV availability is monitored and assessed at the plant, and that, performance continues to be consistent with the CIV availability analysis assumptions used to justify extended CIV CTs, including the assumptions in TR WCAP-15791-P-A, Revision 2.

{REVIEWER'S NOTE: The licensee should address how CIV availability is monitored and assessed, which includes confirmation that performance continues to be consistent with the CIV availability analysis assumptions used to justify extended CIV CTs and needs to describe what actions are to be taken if the CIV availability is not consistent with the generic analysis assumptions.}

3.2.7 Demonstration (Cumulative Risk Evaluation)

[LICENSEE] has demonstrated in Attachment 7 that the cumulative risk has been evaluated for [PLANT] in accordance with guidance in RG 1.174, with respect to past [PLANT] license amendments or additional [PLANT] applications for a TS change under the NRC review that have not been incorporated into the baseline PRA.

{REVIEWER'S NOTE: The cumulative risk impact of the proposed CT extensions for CIVs must be addressed in the plant-specific application, in accordance with the acceptance guidelines in RG 1.174. The cumulative risk impact must include both previous plant license changes and additional plant applications still under review.}

3.2.8 Demonstration (Regulatory commitment)

[LICENSEE] has incorporated a regulatory commitment addressing how LERF/ICLERP is assessed and has provided documentation in the [PLANT] submittal.

{REVIEWER'S NOTE: The licensee should address the plant CRMP, including the maintenance rule program implemented under 10 CFR 50.65(a)(4) as appropriate, and explain how the LERF/ICLERP is assessed in the program.}

4.0 ENVIRONMENTAL EVALUATION

[LICENSEE] has reviewed the environmental evaluation included in the model safety evaluation dated [DATE]. [LICENSEE] has concluded that the proposed determination presented in the notice is applicable to [PLANT] and the determination is provided as an attachment to this LAR to satisfy the requirements of 10 CFR 50.91(a).

ATTACHMENT 2: PROPOSED TECHNICAL SPECIFICATIONS CHANGES (MARK-UP)
(to be provided by the licensee)

**ATTACHMENT 3: PROPOSED TECHNICAL SPECIFICATIONS CHANGES IN FINAL
TYPED FORMAT (to be provided by the licensee)**

ATTACHMENT 4: LIST OF REGULATORY COMMITMENTS

The following table identifies those actions committed to by [LICENSEE] in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments. Please direct questions regarding these commitments to [CONTACT NAME.]

REGULATORY COMMITMENTS	DUE DATE
[LICENSEE] commits to implementing the capability to assess the effect on incremental large early release probability when using the extended completion times for containment isolation valves in the program for managing risk in accordance with 10 CFR 50.65(a)(4) and the plant-specific configuration risk management program.	[Complete, implemented with amendment, OR within X days of implementation of amendment]

**ATTACHMENT 5: PROPOSED TECHNICAL SPECIFICATIONS BASES CHANGES
(MARK-UP) (to be provided by the licensee)**

ATTACHMENT 6: NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Description of Amendment Request: The change requests the adoption of an approved change to the standard technical specifications (STS) for Westinghouse plants (NUREG-1431), to allow modification of containment isolation valve (CIV) completion times associated with the adoption of Technical Specifications Task Force (TSTF) Traveler TSTF-446, Revision 3, "Risk Informed Evaluation of Extensions to Containment Isolation Valve Completion Times (WCAP-15791)," dated February 19, 2008. The Notice of Availability published in the *Federal Register* on [Date] [FR] described the proposed change.

The proposed change extends the completion times for containment penetration flow paths with one CIV inoperable from 4 hours up to 168 hours (7 days) for Westinghouse plants. This change is applicable to containment penetrations with one or more CIVs, in which one CIV is inoperable [for reasons other than shield building bypass or purge valve leakage not within limit] and where the CIV is either intact or not intact. In addition, this change addresses conditions where there are two or more penetration flow paths with one CIV inoperable (for reasons other than that the shield building bypass or purge valve leakage are not within limits).

Basis for no significant hazards consideration determination: As required by Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.91(a), [LICENSEE] analysis of the issue of no significant hazards consideration is presented below:

1. Does the Proposed Change Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated?

Response: No

The proposed changes to the completion times do not change the response of the plant to any accidents, have no impact on the reliability of the CIV, and have an insignificant impact on the availability of the CIVs. The proposed changes will not result in a significant increase in the risk of plant operation. This is demonstrated by showing that the impact on plant safety, as measured by core damage frequency (CDF) and large early release frequency (LERF), is not significantly increased, and is acceptable. In addition, for the completion time change, the incremental conditional core damage probabilities (ICCDP or ICCDP) and incremental conditional large early release probabilities (ICLERP or ILERP) are also acceptable. These changes are consistent with the acceptance guidelines in Regulatory Guide (RG) 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk Informed Decisions on Plant-Specific Changes to the Licensing Basis," and RG 1.177, "An Approach for Plant-Specific, Risk Informed Decision-making: Technical Specifications."

The proposed changes do not adversely affect accident initiators or precursors nor do they alter the design assumptions, conditions, or configuration of the facility or the manner in which the plant is operated and maintained. The proposed changes do not alter or prevent the structures, systems, and components from performing their intended function to mitigate the consequences of an initiating event within the assumed acceptance limits. The proposed changes do not affect

the source term, containment isolation, or radiological release assumptions used in evaluating the radiological consequences of an accident previously evaluated. Furthermore, the proposed changes do not increase the types or amounts of radioactive effluent that may be released offsite, nor do they significantly increase individual or cumulative occupational or public radiation exposures.

The proposed changes do not invalidate the safety analysis assumptions and resultant consequences.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the Proposed Change Create the Possibility of a New or Different Kind of Accident from any Accident Previously Evaluated?

Response: No

The proposed changes do not result in a change in the manner in which the CIVs provide plant protection. No design changes are associated with the proposed changes. The changes to completion times do not change any existing accident scenarios nor do they create any new or different accident scenarios. The changes do not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. In addition, the changes do not alter assumptions made in the safety analysis and do not invalidate the safety analysis assumptions and current plant operating practice.

3. Does the Proposed Change Involve a Significant Reduction in a Margin of Safety?

Response: No

The proposed changes do not alter the manner in which safety limits, limiting safety system settings, or limiting conditions for operation are determined. The safety analysis acceptance criteria are not affected by these changes. The proposed changes will not result in plant operation in a configuration outside the design basis. The calculated impact on risk is consistent with the acceptance guidelines contained in RG 1.174 and RG 1.177.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Based upon the reasoning presented above, [LICENSEE] concludes that the requested change involves no significant hazards consideration, as set forth in 10 CFR 50.92(c), "Issuance of Amendment."

ATTACHMENT 7: PLANT-SPECIFIC INFORMATION
(to be provided by the licensee)

**MODEL SAFETY EVALUATION FOR PLANT-SPECIFIC ADOPTION OF TSTF-446, REVISION
3, “RISK INFORMED EVALUATION OF EXTENSIONS TO CONTAINMENT ISOLATION
VALVE COMPLETION TIMES (WCAP-15791)”**

1.0 INTRODUCTION

By letter dated [DATE], [LICENSEE] (the licensee) proposed changes to the Technical Specifications (TS) for [PLANT]. The requested change is the adoption of NRC-approved Technical Specifications Task Force (TSTF) Traveler TSTF-446, Revision 3, “Risk Informed Evaluation of Extensions to Containment Isolation Valve Completion Times (WCAP-15791),” dated February 19, 2008. TSTF-446 proposes a generic change to NUREG-1431, Revision 3, “Standard Technical Specifications – Westinghouse Plants,” issued June 2004, to implement containment isolation valve (CIV) completion time changes justified in Topical Report (TR) WCAP-15791-P-A, Revision 2 (Proprietary), “Risk Informed Evaluation of Extensions to Containment Isolation Valve Completion Times,” dated June 2008. When implemented, the proposed change would extend the CIV completion times for TS Limiting Condition for Operation (LCO) 3.6.3, “Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual),” from 4 hours up to 168 hours (7 days). (For containment isolation valves where acceptable results could not be demonstrated for 168 hours, shorter times are considered and evaluated).

2.0 REGULATORY EVALUATION

In Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36, “Technical Specifications,” the NRC established its regulatory requirements related to the content of TS. Pursuant to 10 CFR 50.36, TS are required to include items in the following five specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings, (2) LCOs, (3) surveillance requirements, (4) design features, and (5) administrative controls. However, the regulation does not specify the particular TS to be included in a plant’s license. TSTF-446 is proposing changes to the TS LCO that concerns containment isolation valves. The LCOs are the lowest functional capability, or performance levels, of equipment required for safe operation of the facility. When an LCO of a nuclear reactor is not met, the licensee shall follow any remedial actions permitted by the TS until the condition can be met or shall shut down the reactor.

Furthermore, the completion times specified in the TS must be based on the reasonable protection of public health and safety. As set forth in 10 CFR 50.36, a licensee’s TS must establish the LCOs that are the lowest functional capability, or performance levels, of equipment required for safe operation of the facility. The TS specify completion times for structures, systems, and components (SSCs), such as CIVs. These completion times allow a certain amount of time in which to correct a condition that does not meet the LCO before the reactor must be brought to a condition that exits the mode of applicability, in most cases resulting in the reactor being shut down.

The Maintenance Rule, 10 CFR 50.65, “Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” requires licensees to monitor the performance, or

condition, of SSCs against licensee-established goals in a manner sufficient to provide reasonable assurance that SSCs are capable of fulfilling their intended functions. The implementation and monitoring program guidance in Section 2.3 of Regulatory Guide (RG) 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk Informed Decisions on Plant-Specific Changes to the Licensing Basis," states that monitoring performed in conformance with the Maintenance Rule can be used when such monitoring is sufficient for the SSCs affected by the risk informed application recognizing the additional guidance for a configuration risk management program (CRMP) identified in RG 1.177. In addition, 10 CFR 50.65(a)(4), as it relates to the proposed extension of CIV completion times, requires the assessment and management of the increase in risk that may result from the proposed maintenance activity.

The CIVs help ensure that adequate primary containment boundaries are maintained during and after accidents by minimizing potential pathways to the environment and help ensure that the primary containment function assumed in the safety analysis is maintained. The following general design criteria (GDC) apply to this change and establish the necessary design, fabrication, construction, testing, and performance requirements for SSCs important to safety, which provide reasonable assurance that the facility can be operated without undue risk to the health and safety of the public. [Pre-GDC (PGDC) facilities not licensed under the GDC in Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," are licensed under similar plant-specific design criteria, as described in the facility's licensing-basis documents (such as updated final safety analysis reports).]

- GDC 54 (or PGDC), "Piping Systems Penetrating Containment," requires the following:

Piping systems penetrating primary reactor containment shall be provided with leak detection, isolation, and containment capabilities having redundancy, reliability, and performance capabilities that 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.

- GDC 55 (or PGDC), "Reactor Coolant Pressure Boundary Penetrating Containment," requires the following:

Each line that is part of the reactor coolant pressure boundary and that penetrates primary reactor containment shall be provided with CIVs 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.

- GDC 56 (or PGDC), "Primary Containment Isolation," requires the following:

Each line that connects directly to the containment atmosphere and penetrates primary reactor containment shall be provided with CIVs 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.

- GDC 57 (or PGDC), "Closed System Isolation Valves," requires the following:

Each line that penetrates the 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 CIV 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.

3.0 TECHNICAL EVALUATION

3.1 Probabilistic Risk Assessment (PRA) for the Proposed Changes

[LICENSEE] adoption of TSTF-446, Revision 3, would allow extending CIV completion times specified in TS [LCO 3.6.3, "Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual)"]. TR WCAP-15791-P-A, Revision 2, referenced in TSTF-446, Revision 3, describes a method to revise the completion time for specific conditions in TS LCO 3.6.3. The NRC staff reviewed the risk impact using the three-tiered approach referenced in RG 1.174 and RG 1.177 associated with the proposed TS changes. The first tier evaluates the probabilistic risk assessment and the impact of the proposed extension of completion times for CIVs on plant operational risk. The second tier addresses the need to preclude potentially high-risk plant equipment outage configurations by identifying the need for additional controls or compensatory actions to be implemented during the time a CIV is unavailable because of maintenance. The third tier evaluates the licensee's overall configuration risk management program and confirms that risk insights are incorporated into the decision-making process before equipment is taken out of service before or during CIV maintenance.

The NRC staff determined that the risk analysis methodology and approach used by TR WCAP-15791-P-A, Revision 2, to estimate the risk impact was reasonable. The NRC staff stated in the TR's safety evaluation (SE) that the risk impact of the proposed extended completion times for CIVs, as estimated by the change in CDF, the change in LERF, the ICCDP (or ICDP) and ICLERP (or ILERP), is consistent with the acceptance guidelines specified in RG 1.174 and RG 1.177 and the associated NRC guidance outlined in Sections 16.1, 19.1, and 19.2 of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants." CIV configurations, completion times, or nonbounding risk analysis parameters not evaluated by TR WCAP-15791-P-A, Revision 2, require additional justification of the specific penetrations for the proposed CIV completion times.

The NRC staff also noted that Tier 2, as presented in TR WCAP-15791-P-A, Revision 2, did not identify generic Tier 2 risk significant configurations as a result of the proposed CIV completion times. In its review of TR WCAP-15791-P-A, Revision 2, the NRC staff identified TS and analysis bases that allow only one CIV to be in maintenance with an extended completion time at any given time. In addition, before maintenance or corrective maintenance is performed, other CIVs in the penetration flow path shall be checked for proper position and the licensee will ensure that any inoperable CIVs will not result in a risk significant configuration. The NRC staff SE also noted that, for licensees adopting TR WCAP-15791-P-A, Revision 2, a plant-specific Tier 2 evaluation should be performed to confirm the conclusions of the subject WCAP concerning that this conclusion of no Tier 2 requirements is applicable to the licensee's plant.

TR WCAP-15791-P-A, Revision 2, did not address Tier 3, and therefore, the NRC SE concluded that licensees adopting the subject TR would need to include an evaluation with respect to Tier 3

in their plant-specific application in accordance with the principles in RG 1.177.

The NRC-approved TR WCAP-15791-P-A, Revision 2, for referencing in license applications to the extent specified and under the limitations and conditions stated in the TR and Section 4.0 of the NRC SE. In addition, per the SE, applications referencing TR WCAP-15791-P-A, Revision 2, must address items specified in Section 3.4, "Regulatory Commitments," and Section 5.0, "Additional Information Needed" of the SE.

The licensee's plant-specific application requesting adoption of TSTF-446 evaluated the conditions, limitations, and additional information needed that are referenced in the Sections 3.4, 4.0, and 5.0 of the NRC SE of TR WCAP-15791-P-A, Revision 2, consistent with implementation of the generic completion time changes. In its application dated [DATE], the licensee provided supporting information for each of the conditions, limitations, and additional information needed that are referenced in the NRC SE. The licensee's supporting information for each condition and limitation, as well as for the additional information needed, met the NRC staff expectations and acceptance criteria [with the following exceptions: list any exceptions to the conditions and limitations or additional information required, as stated in the licensee's submittal, and include the NRC staff evaluation and conclusions.]

Technical Assessment for the Proposed Changes:

[LICENSEE] adoption of TSTF-446, Revision 3, would make changes to the TS [LCO 3.6.3, "Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual),"] as follows:

- TSTF-446 revises [LCO 3.6.3], which states "Each containment isolation valve shall be OPERABLE," to read, "Each containment isolation valve (CIV) shall be OPERABLE." Adding the abbreviation "(CIV)" to the LCO statement is editorial in nature and does not change the LCO requirement; therefore, this change is acceptable.
- TSTF-446 deletes the Condition A NOTE, which states "Only applicable to penetration flow paths with two [or more] containment isolation valves." The existing Condition C, which is applicable to penetration flow paths with only one CIV and a closed system, is being deleted and replaced by a new Condition B. The new Condition B, along with the revised Condition A, accounts for all of the CIVs covered under existing Condition C; therefore, the Condition A NOTE is no longer required. Revised Condition A and new Condition B apply to all penetration flow paths with at least one CIV. This is consistent with the NRC SE of TR WCAP-15791-P-A, Revision 2, and is therefore acceptable.
- TSTF-446 revises Condition A's applicability from "[for reasons other than Condition[s] D [and E]]" to "[for reasons other than Condition[s] E [and F]]." This change is required by the addition of new Conditions B and D, which results in renumbering the conditions that follow Condition D. This change is editorial and does not result in a technical change; therefore, it is acceptable.
- TSTF-446 adds a new requirement to Condition A, which states "Containment

isolation valve pressure boundary intact.” This is required to meet the entry condition for Condition A. This requirement is necessary, along with the addition of new Condition B, which is applicable when the CIV pressure boundary is not intact, because existing Condition C is being deleted. Existing Condition C is applicable to penetration flow paths with only one CIV and a closed system. In addition, revised Condition A and new Condition B are applicable to all conditions in which a CIV may be inoperable. Revised Condition A, along with new Condition B, encompasses existing Condition C and is consistent with the NRC SE for WCAP-15791-P-A, Revision 2; therefore, it is acceptable.

- TSTF-446 revises the existing 4 hour completion time for Condition A to completion times that range from 4 hours up to 7 days, depending upon the category of the applicable CIV (Category 1 through 7). This change has been evaluated and documented in the SE of TR WCAP-15791-P-A, Revision 2. This change proposed by TSTF-446 is consistent with the NRC SE of TR WCAP-15791-P-A, Revision 2, and is therefore acceptable.
- TSTF-446 adds a new Condition B, which states “One or more penetration flow paths with one containment isolation valve inoperable [for reasons other than Condition[s] E [and F]] AND containment isolation valve pressure boundary not intact.” This new condition, in conjunction with revised Condition A, addresses all situations where one CIV is inoperable in one or more penetration flow paths. The new Condition B required actions and completion times are the same as those in the revised Condition A, with the exception of the Condition B category of valves. Condition A completion times apply to Category 1 through 7 valves and Condition B completion times apply to Category 8 through 14 valves. The addition of new Condition B has been evaluated and documented in the NRC SE of TR WCAP-15791-P-A, Revision 2. This change proposed by TSTF-446 is consistent with the NRC SE of TR WCAP-15791-P-A, Revision 2, and is therefore acceptable.
- TSTF-446 renames existing Condition B and Required Action B.1 as Condition C and Required Action C.1. In addition, existing Condition B wording, which states “[for reasons other than Condition[s] D [and E]]” is changed to “[for reasons other than Condition[s] E [and F]].” These changes are editorial in nature, are caused by adding conditions proposed by TSTF-446 that have been evaluated and documented in the NRC SE of TR WCAP-15791-P-A, Revision 2, and are therefore acceptable.
- TSTF-446 deletes the existing Condition C and Required Actions C.1 and C.2, which are applicable to penetration flow paths with only one CIV and a closed system. The existing Condition C entry condition is “One or more penetration flow paths with one containment isolation valve inoperable.” With revised Condition A and the addition of Condition B, this covers all CIVs that would have been applicable to existing Condition C. The Required Actions for revised Condition A and new Condition B are identical to the existing Condition C. The completion times for revised Condition A and new Condition B are changed from the existing Condition C time of 72 hours and have been evaluated and documented in the

NRC SE of TR WCAP-15791-P-A, Revision 2. The deletion of existing Condition C is consistent with WCAP-15791-P-A, Revision 2, is accounted for by the revision to Condition A, and the addition of new Condition B, and is therefore acceptable.

- TSTF-446 adds a new Condition D, which states “Two or more penetration flow paths with one containment isolation valve inoperable [for reasons other than Condition[s] E [and F]].” This condition requires isolating all but one of the affected penetrations within 4 hours (the existing completion time for Condition A). Once this completion time is satisfied, and since revised Condition A and new Condition B will still be applicable, this essentially limits the completion times in Condition A and B to a single penetration. This added requirement enforces the basis of WCAP-15791-P-A, Revision 2, that only one CIV should be in maintenance at a time. This change addresses Section 4.0, “Limitations and Conditions,” items 1 and 2, in the NRC SE of TR WCAP-15791-P-A, Revision 2, and is therefore acceptable.
- TSTF-446 renames Conditions D, E, and F, along with Required Actions D.1, E.1, E.2, E.3, F.1, and F.2, as Conditions E, F, and G, along with Required Actions E.1, F.1, F.2, F.3, G.1, and G.2. With the addition of new Conditions B and D, and the deletion of current Condition C, the remaining Conditions and Required Actions need to be renumbered. This change is editorial, results in no technical change, and is therefore acceptable.

4.0 SUMMARY AND CONCLUSIONS

The NRC staff has reviewed the [LICENSEE] proposed adoption of TSTF-446, Revision 3, to modify the TS requirements for completion time for CIVs associated with the implementation of TR WCAP-15791-P-A, Revision 2, and found the changes to be consistent with the approved Topical Report.

The NRC staff has concluded, on the basis of the considerations discussed above, that (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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

5.0 STATE CONSULTATION

In accordance with the Commission’s regulations, the [STATE NAME] State official was notified of the proposed issuance of the amendment. The State official had [(1) no comments or (2) the following comments with subsequent disposition by the NRC staff].

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20, “Standards for Protection Against Radiation.” The NRC staff has determined that the amendment involves no

significant increase in the amounts and no significant change in the types of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards considerations, and there has been no public comment on the finding [FR]. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

7.0 REFERENCES

1. "Forwarding of TSTFs," dated October 21, 2002 (ADAMS Package Accession No. ML022960409).
2. TSTF-446, Revision 1, "Risk Informed Evaluation of Extensions to Containment Isolation Valve Completion Times (WCAP-15791)," dated January 31, 2005 (ADAMS Accession No. ML050460293).
3. WCAP-15791-NP-A, Revision 2 (Non-Proprietary), "Risk Informed Evaluation of Extensions to Containment Isolation Valve Completion Times," June 2008 (ADAMS Accession No. ML082120239).
4. TSTF-446, Revision 2, "Risk Informed Evaluation of Extensions to Containment Isolation Valve Completion Times (WCAP-15791)," dated January 11, 2007 (ADAMS Accession No. ML070110620).
5. TSTF-446, Revision 3, "Risk Informed Evaluation of Extensions to Containment Isolation Valve Completion Times (WCAP-15791)," dated February 19, 2008 (ADAMS Accession No. ML080510164).
6. NUREG-1431, "Standard Technical Specifications – Westinghouse Plants," Revision 3, June 2004 (ADAMS Accession No. ML041830612).
7. Nuclear Energy Institute 99-04, Revision 0, "Guidelines for Managing NRC Commitment Changes," July 1999 (ADAMS Accession No. ML003680088).
8. Final Safety Evaluation (SE) of Westinghouse Owners Group (WOG) Topical Report (TR) WCAP-15791-P, Revision 2, "Risk Informed Evaluation of Extensions to Containment Isolation Valve Completion Times," dated February 13, 2008 (ADAMS Accession No. ML080170680).
9. WCAP-15791-P-A, Revision 2 (Proprietary), "Risk Informed Evaluation of Extensions to Containment Isolation Valve Completion Times," June 2008 (ADAMS Accession No. ML082120240).