August 2, 2017

TSTF-17-10
PROJ0753

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

SUBJECT: TSTF Comments on Draft Safety Evaluation for Traveler TSTF-551, Revision 3, "Revise Secondary Containment Surveillance Requirements"

REFERENCE: Letter from Jennifer Whitman (NRC) to the TSTF, "Draft Safety Evaluation of Technical Specifications Task Force Traveler TSTF-551, Revision 3, 'Revise Secondary Containment Surveillance Requirements'," dated July 3, 2017 (ADAMS Accession No. ML17080A409).

On October 3, 2016, the TSTF submitted traveler TSTF-551, Revision 3, " Revise Secondary Containment Surveillance Requirements," to the Nuclear Regulatory Commission (NRC) for review (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16277A226). In the referenced letter, the NRC provided the draft Safety Evaluations for TSTF-551 for comment.

Attachment 1 contains a summary table providing the TSTF's comments on the draft Safety Evaluations. Attachment 2 contains a mark-up reflecting the TSTF's comments.

Should you have any questions, please contact us.

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Attachment 1 TSTF Comments on the TSTF-551 Draft Safety Evaluations
Attachment 2 TSTF Markup of Draft Safety Evaluations

cc: Michelle Honcharik, Technical Specifications Branch, NRC
Robert Tjader, Technical Specifications Branch, NRC
Jennifer Whitman, Technical Specifications Branch, NRC

Attachment 1
TSTF Comments on the TSTF-551 Draft Safety Evaluations

Page(s)	Line(s)[1]	Comment
Traveler Draft Safety Evaluation		
1	9, 13	The ADAMS Accession numbers for the Revision 0 and Revision 1 submittals of TSTF-551 are incorrect. The correct numbers are ML14304A034 and ML15246A131, respectively.
1	26	Recommend adding a footnote explaining why "secondary" is bracketed.
1 2	27 45	In some locations, the SE refers to the SR 3.6.4.1.3 note as pertaining to "ingress and egress" instead of "entry and exit." This is an unnecessary departure from the TS wording and contrary to plain language. Recommend using the TSTF-551 and TS wording of "entry and exit."
5 6 8 9 10	11-46 23-25 3-4, 46 46-47 25-26	The SE discusses only radiological consequence analysis using alternative source term (AST), 10 CFR 50.67, and Regulatory Guide 1.183. TSTF-551 is applicable to all BWR plants regardless of whether the Loss of Coolant Accident and Fuel Handling Accident analyses are based on AST or traditional source terms. The SE should be revised to encompass any plant's source term licensing basis. The TSTF proposes eliminating references to AST and using the phrase from page 7, line 20, "the current radiological consequence analyses."
Draft Model Safety Evaluation for Plant-Specific Adoption		
--	--	The model SE is written as a plant-specific SE instead of evaluating the licensee's adoption of TSTF-551. The model SE repeats all of the generic evaluation of TSTF-551 and does not discuss variations from the approved traveler. The TSTF believes this approach undermines the efficiency of the traveler process. The TSTF has not provided a rewrite, but we recommend the NRC revise the technical evaluation to confirm that the traveler SE assumptions and conclusions are applicable.
1	6	Recommend adding note explaining the use of brackets.
1	15	The bolded phrase "Month, Day, 2017 (ADAMS Accession No. MLXXXX)" should be placed in brackets, consistent with similar information in the paragraph.
1 2	27 45	In some locations, the model SE refers to the SR 3.6.4.1.3 note as pertaining to "ingress and egress" instead of "entry and exit." This is an unnecessary departure from the TS wording and contrary to plain language. Recommend using the TSTF-551 and TS wording of "entry and exit."

[1] Line numbers correspond to the documents provided by the NRC and not to the attached proposed revision.

1	19	In discussing the SR 3.6.4.1.1 note, the model SE states, "provided that the standby gas treatment (SGT) system remains capable of establishing the required [secondary] containment vacuum within the [specified time]." The SR note does not refer to the time required to establish containment vacuum. Reference to time should be eliminated to be consistent with the TS.
2 2	29 41	In the model SE, the TSTF recommends not referring to the Standard Technical Specifications NUREGs, but to instead refer to the applicable BWR types.
3 4 5 6 9 9	39-49 1-20 12 39-40 4-5 25-26	The model SE discusses only radiological consequence analysis using alternative source term (AST), 10 CFR 50.67, and Regulatory Guide 1.183. TSTF-551 is applicable to all BWR plants regardless of whether the Loss of Coolant Accident and Fuel Handling Accident analyses are based on AST or traditional source terms. The SE should be revised to encompass any plant's source term licensing basis. The TSTF proposes eliminating references to AST and using the phrase from page 7, line 20, "the current radiological consequence analyses."
5	5	Remove the unmatched bracket before the word "which."
9	13	Recommend adding a section "Variations from the Approved Traveler," similar to other recent model SEs. The section should include example discussions of the variations included in the TSTF-551 model application.

Attachment 2
TSTF Markup of Draft Safety Evaluations

July 3, 2017

Technical Specifications Task Force
11921 Rockville Pike, Suite 100
Rockville, MD 20852

SUBJECT: DRAFT SAFETY EVALUATION OF TECHNICAL SPECIFICATIONS TASK FORCE TRAVELER TSTF-551, REVISION 3, "REVISE SECONDARY CONTAINMENT SURVEILLANCE REQUIREMENTS" (TAC NO. MF5125)

Dear Members of the Technical Specifications Task Force:

By letter dated October 3, 2016 (Agencywide Documents Access and Management System Accession No. ML16277A226), the Technical Specifications Task Force submitted to the U.S. Nuclear Regulatory Commission (NRC) for review and approval traveler TSTF-551, Revision 3, "Revise Secondary Containment Surveillance Requirements." The NRC staff's draft safety evaluation (SE) of the traveler and a draft model SE are enclosed.

Thirty calendar days are provided to you to comment on any factual errors or clarity concerns contained in the enclosed draft SEs. The final SEs will be issued after making any necessary changes. The NRC staff's disposition of your comments on the draft SEs will be discussed in the final SEs. To facilitate the NRC staff's review of your comments, please provide a marked-up copy of the draft SEs showing proposed changes and provide a summary table of the proposed changes.

If you have any questions, please contact Michelle Honcharik at 301-415-1774 or via e-mail at Michelle.Honcharik@nrc.gov.

Sincerely,

/RA/

Jennifer M. Whitman, Acting Chief
Technical Specifications Branch
Division of Safety Systems
Office of Nuclear Reactor Regulation

Project No. 753

Enclosures:
As stated

cc: See next page

DRAFT SAFETY EVALUATION OF TECHNICAL SPECIFICATIONS TASK FORCE TRAVELER TSTF-551, REVISION 3, "REVISE SECONDARY CONTAINMENT SURVEILLANCE REQUIREMENTS" (TAC NO. MF5125)

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ADAMS Accession No.: Package: ML17080A409, Cover letter and Draft traveler SE: ML17080A414, Draft Model SE: ML17080A415; *concurred via e-mail
****from internal memos ML16062A426 and ML16340A067** **NRR-106**

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DRAFT SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

TECHNICAL SPECIFICATIONS TASK FORCE TRAVELER

TSTF-551, REVISION 3,

"REVISE SECONDARY CONTAINMENT SURVEILLANCE REQUIREMENTS"

1.0 INTRODUCTION

By letter dated September 3, 2015 (Agencywide Document Access and Management System (ADAMS) Accession No. *ML14304A034* ~~ML15246A131~~), the Technical Specifications (TS) Task Force (TSTF) submitted traveler TSTF-551, "Reactor Pressure Vessel Water Inventory Control," Revision 0, for U.S. Nuclear Regulatory Commission (NRC) review and approval. By letter dated January 26, 2016, the TSTF submitted Revision 1 to traveler TSTF-551 (ADAMS Accession No. *ML15246A131*~~ML16026A026~~), and by letter dated May 12, 2016, the TSTF submitted Revision 2 to the traveler (ADAMS Accession No. ML16133A536). By letter dated October 3, 2016 (ADAMS Accession No. ML16277A226), the TSTF submitted Revision 3 of the Traveler TSTF-551.

Traveler TSTF-551 proposes changes to the Standard Technical Specifications (STS) and Bases for boiling water reactor (BWR) designs BWR/4 and BWR/6.[1] The changes would be incorporated into future revisions of NUREG-1433, Volumes 1 and 2 and NUREG-1434, Volumes 1 and 2. NUREG-1433 is based on the BWR/4 plant design, but is also representative of the BWR/2, BWR/3, and, in some cases, BWR/5 designs. NUREG-1434 is based on the BWR/6 plant design, and is representative, in many cases, of the BWR/5 design.

The proposed changes would allow the [secondary][2] containment vacuum limit to not be met provided the standby gas treatment (SGT) system remains capable of establishing the required [secondary] containment vacuum and revises NUREG-1433 to permit [secondary] containment

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[1] U.S. Nuclear Regulatory Commission, "Standard Technical Specifications, General Electric BWR/4 Plants," NUREG-1433, Vol. 1, "Specifications," Revision 4.0, April 2012, ADAMS Accession No. ML12104A192.

U.S. Nuclear Regulatory Commission, "Standard Technical Specifications, General Electric BWR/4 Plants," NUREG-1433, Vol. 2, "Bases," Revision 4.0, April 2012, ADAMS Accession No. ML12104A193.

U.S. Nuclear Regulatory Commission, "Standard Technical Specifications, General Electric BWR/6 Plants," NUREG-1434, Vol. 1, "Specifications," Revision 4.0, April 2012, ADAMS Accession No. ML12104A195.

U.S. Nuclear Regulatory Commission, "Standard Technical Specifications, General Electric BWR/6 Plants," NUREG-1434, Vol. 2, "Bases," Revision 4.0, April 2012, ADAMS Accession No. ML12104A196.

[2] Plants of BWR/4 design have differing names for the secondary containment. As a result, the BWR/4 ISTS uses the convention, "[secondary] containment." In the ISTS, brackets indicate plant-specific information. BWR/6 plants also have differing names for secondary containment, or the primary containment serves a similar function. The BWR/6 ISTS uses the convention "[secondary containment]." In this discussion, the phrase "[secondary] containment" applies to both BWR/4 and BWR/6 plants.

access opening to be open to permit *entry and exit* ~~ingress and egress~~ similar to the corresponding statements in NUREG-1434.

Throughout this safety evaluation (SE), items that are enclosed in square brackets signify plant-specific nomenclature or values. Individual licensees would furnish plant-specific nomenclature or values for bracketed items when submitting a license amendment request (LAR) to adopt the changes described in this SE.

2.0 REGULATORY EVALUATION

2.1 SYSTEM DESCRIPTION

The [secondary] containment is a structure that encloses the primary containment, including components that may contain primary system fluid. The safety function of the [secondary] containment is to contain, dilute, and hold up fission products that may leak from primary containment following a design basis accident (DBA) to ensure the control room operator and offsite doses are within the regulatory limits. There is no redundant train or system that can perform the [secondary] containment function should the [secondary] containment be inoperable.

The [secondary] containment boundary is the combination of walls, floor, roof, ducting, doors, hatches, penetrations and equipment that physically form the [secondary] containment. A routinely used [secondary] containment access opening contains at least one inner and one outer door in an airlock configuration. In some cases, [secondary] containment access openings are shared such that there are multiple inner or outer doors. All [secondary] containment access doors are normally kept closed, except when the access opening is being used for entry and exit of personnel, equipment, or material.

[Secondary] containment operability is based on its ability to contain, dilute, and hold up fission products that may leak from primary containment following a DBA. To prevent ground level exfiltration of radioactive material while allowing the [secondary] containment to be designed as a mostly conventional structure, the [secondary] containment requires support systems to maintain the pressure at less than atmospheric pressure. During normal operation, non-safety related systems are used to maintain the [secondary] containment at a slight negative pressure to ensure any leakage is into the building and that any [secondary] containment atmosphere exiting is via a pathway monitored for radioactive material. However, during normal operation it is possible for the [secondary] containment vacuum to be momentarily less than the required vacuum for a number of reasons, such as during wind gusts or swapping of the normal ventilation subsystems.

During emergency conditions, the SGT system is designed to be capable of drawing down the [secondary] containment to a required vacuum within a prescribed time and continue to maintain the negative pressure as assumed in the accident analysis. The leak tightness of the [secondary] containment together with the SGT system ensure that radioactive material is either contained in the [secondary] containment or filtered through the SGT system filter trains before being discharged to the outside environment via the elevated release point.

2.2 CHANGES TO THE STS

The proposed changes would allow the [secondary] containment vacuum limit to not be met provided the SGT system remains capable of establishing the required [secondary] containment vacuum and revises NUREG-1433 to permit [secondary] containment access opening to be open to permit *entry and exit* ~~ingress and egress~~ similar to the corresponding statements in NUREG-1434.

Corresponding changes are proposed to the STS Bases. A summary of the revised STS Bases and the NRC staff's evaluation of the revised Bases are provided in an attachment to this SE.

2.2.1 Revision to Surveillance Requirement 3.6.4.1.1

Surveillance requirement (SR) 3.6.4.1.1 requires verification that [secondary] containment vacuum is ≥ [0.25] inch of vacuum water gauge. This SR would be modified by a note that states:

> Not required to be met for 4 hours if analysis demonstrates one standby gas treatment (SGT) subsystem is capable of establishing the required [secondary] containment vacuum.

This change is applicable to NUREG-1433 and -1434.

2.2.2 Revision to Surveillance Requirement 3.6.4.1.3

SR 3.6.4.1.3 requires verification that one [secondary] containment access door in each access opening is closed. This SR would be modified by adding the following phrase to the end of the SR statement, "…except when the access opening is being used for entry and exit."

This change is applicable to NUREG-1433 only. This provision already exists in NUREG-1434, Revision 4.

2.2.3 Revision to Surveillance Requirement 3.6.4.1.4

An editorial change is made to SR 3.6.4.1.4 in which the words "standby gas treatment" are replaced with the initialism "SGT."

2.3 APPLICABLE REGULATORY REQUIREMENTS AND GUIDANCE

Section IV, "The Commission Policy," of the Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors (58 *Federal Register* 39132), dated July 22, 1993, states in part:

> The purpose of Technical Specifications is to impose those conditions or limitations upon reactor operation necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety by identifying those features that are of controlling importance to safety and establishing on them certain conditions of operation which cannot be changed without prior Commission approval.

> [T]he Commission will also entertain requests to adopt portions of the improved STS [(e.g., TSTF-551)], even if the licensee does not adopt all STS improvements…
>
> The Commission encourages all licensees who submit Technical Specification related submittals based on this Policy Statement to emphasize human factors principles…
>
> In accordance with this Policy Statement, improved STS have been developed and will be maintained for [BWR designs]. The Commission encourages licensees to use the STS as the basis for plant-specific Technical Specifications…
>
> [I]t is the Commission intent that the wording and Bases of the improved STS be used [] to the extent practicable.

As described in the Commission's Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors, recommendations were made by NRC and industry task groups for new STS that include greater emphasis on human factors principles in order to add clarity and understanding to the text of the STS, and provide improvements to the Bases of STS, which provides the purpose for each requirement in the specification. Subsequently, improved vendor-specific STS were developed and issued by the NRC in September 1992.

The regulation at Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36(a)(1) requires an applicant for an operating license to include in the application proposed TS in accordance with the requirements of 10 CFR 50.36. The applicant must include in the application, a "summary statement of the bases or reasons for such specifications, other than those covering administrative controls." However, per 10 CFR 50.36(a)(1), these technical specification bases "shall not become part of the technical specifications."

Additionally, 10 CFR 50.36(b) requires:

> Each license authorizing operation of a … utilization facility … will include technical specifications. The technical specifications will be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to 10 CFR 50.34 ["Contents of applications; technical information"]. The Commission may include such additional technical specifications as the Commission finds appropriate.

The categories of items required to be in the TSs are provided in 10 CFR 50.36(c). As required by 10 CFR 50.36(c)(2)(i), the TSs will include limiting conditions for operation (LCOs), which are the lowest functional capability or performance levels of equipment required for safe operation of the facility. Per 10 CFR 50.36(c)(2)(i), when an LCO of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met.

The regulation at 10 CFR 50.36(c)(3) requires TSs to include items in the category of SRs, which 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 LCOs will be met.

Per 10 CFR 50.90, whenever a holder of a license desires to amend the license, application for an amendment must be filed with the Commission, fully describing the changes desired, and following as far as applicable, the form prescribed for original applications.

Per 10 CFR 50.92(a), in determining whether an amendment to a license will be issued to the applicant, the Commission will be guided by the considerations which govern the issuance of initial licenses to the extent applicable and appropriate.

The NRC staff's guidance for review of TSs is in Chapter 16, *Technical Specifications*, of NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants" (SRP), dated March 2010 (ADAMS Accession No. ML100351425). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared STS for each of the light-water reactor nuclear designs.

~~NUREG-0800, SRP Section 15.0.1, "Radiological Consequence Analyses Using Alternative Source Terms," Revision 0, dated July 2000, provides guidance to the NRC staff for the review of AST amendment requests. SRP 15.0.1 states that the NRC reviewer should evaluate the proposed change against the guidance in RG 1.183.~~

~~Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," Revision 0, dated July 2000, provides acceptable methodology for analyzing the radiological consequences of several design basis accidents to show compliance with 10 CFR 50.67. RG 1.183 provides guidance to licensees on acceptable application of alternate source term (AST) (also known as the accident source term) submittals, including acceptable radiological analysis assumptions for use in conjunction with the accepted AST.~~

~~10 CFR 50.67, "Accident source term," states that:~~

> ~~(i) An individual located at any point on the boundary of the exclusion area for any 2-hour period following the onset of the postulated fission product release, would not receive a radiation dose in excess of 0.25 Sv (25 rem) total effective dose equivalent (TEDE),~~
> ~~(ii) An individual located at any point on the outer boundary of the low population zone, who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage), would not receive a radiation dose in excess of 0.25 Sv (25 rem) TEDE, and~~
> ~~(iii) Adequate radiation protection is provided to permit access to and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 0.05 Sv (5 rem) TEDE for the duration of the accident.~~

In the evaluation of plant-specific LARs adopt TSTF-551 changes, the NRC staff will confirm the current licensing basis~~, which reflects the AST methodology for analyzing the radiological consequences of the design basis accidents using RG 1.183. The NRC staff will also consider relevant information~~ in the updated Final Safety Analysis Report (FSAR), which describes the DBAs and evaluation of their radiological consequences for a specific licensee.

3.0 TECHNICAL EVALUATION

3.1 PROPOSED CHANGE TO SURVEILLANCE REQUIREMENT 3.6.4.1.1

A note is being added to SR 3.6.4.1.1. The note allows the SR to not be met for up to 4 hours if an analysis demonstrates that one SGT subsystem is capable of establishing the required [secondary] containment vacuum. During normal operation, conditions may occur that result in SR 3.6.4.1.1 not being met for short durations. For example, wind gusts that lower external pressure or loss of the normal ventilation system that maintains [secondary] containment vacuum may affect [secondary] containment vacuum. These conditions may not be indicative of degradations of the [secondary] containment boundary or of the ability of the SGT system to perform its specified safety function.

The note provides an allowance for the licensee to confirm [secondary] containment operability by confirming that one SGT subsystem is capable of performing its specified safety function. This confirmation is necessary to apply the exception to meeting the SR acceptance criterion. While the duration of these occurrences is anticipated to be very brief, the allowance is permitted for a maximum of 4 hours, which is consistent with the time permitted for [secondary] containment to be inoperable per Condition A of LCO 3.6.4.1.

The NRC staff intends to evaluate the impact of this note on the licensee's design basis radiological consequence dose analyses to ensure that the proposed change will not result in an increase in the dose consequences and that the resulting calculated doses remain within *the current radiological consequence analyses*~~the design criteria specified in 10 CFR 50.67 and the accident specific design criteria outlined in RG 1.183~~.

The proposed addition of the note to SR 3.6.4.1.1 does not change the STS requirement to meet SR 3.6.4.1.4 and SR 3.6.4.1.5. SR 3.6.4.1.4 requires verification that the [secondary] containment can be drawn down to ≥ [0.25] inch of vacuum water gauge in ≤ [120] seconds using one SGT subsystem. SR 3.6.4.1.5 requires verification that the [secondary] containment can be maintained ≥ [0.25] inch of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate ≤ [4000] cubic feet per minute. In addition, TS LCO 3.6.4.3, "Standby Gas Treatment (SGT) System," must be met; otherwise a licensee shall shut down the reactor or follow any remedial action permitted by STS until the condition can be met.

As discussed above, [secondary] containment operability is based on its ability to contain, dilute, and hold up fission products that may leak from primary containment following a DBA. To prevent ground level exfiltration of radioactive material the [secondary] containment pressure must be maintained at a pressure that is less than atmospheric pressure. The [secondary] containment requires support systems to maintain the control volume pressure less than atmospheric pressure. Following an accident, the SGT system ensures the [secondary] containment pressure is less than the external atmospheric pressure. During normal operation, non-safety related systems are used to maintain the [secondary] containment at a negative

pressure. However, during normal operation it is possible for the [secondary] containment vacuum to be momentarily less than the required vacuum for a number of reasons. These conditions are not indicative of degradations of the [secondary] containment boundary or of the ability of the SGT system to perform its specified safety function. Since the licensee meets the requirements of SR 3.6.4.1.4, SR 3.6.4.1.5, meets the LCO or is following the Actions of TS LCO 3.6.4.3, and the licensee's analysis confirms [secondary] containment operability by confirming that one SGT subsystem is capable of performing its specified safety function, then there is reasonable assurance that the [secondary] containment and SGT subsystem will maintain the vacuum requirements during a DBA.

Therefore, the NRC staff has determined that: if the conditions do not affect (1) the ability to maintain the [secondary] containment pressure during an accident, at a pressure that is less than atmospheric, and (2) the time assumed in the accident analyses to draw down the [secondary] containment pressure, then the [secondary] containment can perform its safety function and may be considered TS operable. This is evident by being able to successfully perform and meet SR 3.6.4.1.4 and SR 3.6.4.1.5. These SRs require the SGT system to establish and maintain the required vacuum in the [secondary] containment as assumed in the accident analyses.

If the specified safety functions of the [secondary] containment and SGT subsystem can be performed in the time assumed in the accident analysis, then the fission products that bypass or leak from primary containment, or are released from the reactor coolant pressure boundary components located in [secondary] containment prior to release to the environment, will be contained and processed as assumed in the design basis radiological consequence dose analyses. If the above statement is true for a plant-specific amendment, then the NRC staff finds that the proposed change does not affect the current radiological consequence analyses. Therefore, the NRC staff concludes this change is acceptable with respect to the radiological consequences of DBAs.

3.2 PROPOSED CHANGE TO SURVEILLANCE REQUIREMENT 3.6.4.1.3

[NOTE: The proposed change is not applicable if the radiological dose consequence analysis assumes the [secondary] containment pressure is below atmospheric pressure prior to or coincident with the time at which the accident or event occurs. Such an analysis assumption would require a revised radiological dose consequence analysis considering the new release point (the open [secondary] containment doors), with appropriate atmospheric dispersion factors, and any other necessary revisions to the accident or event analysis.]

The NRC staff review of SR 3.6.4.1.3 was limited to the request to provide an allowance for the brief, inadvertent, simultaneous opening of redundant [secondary] containment access doors during normal entry and exit conditions. Planned activities that could result in the simultaneous opening of redundant [secondary] containment access openings, such as maintenance of a [secondary] containment personnel access door or movement of large equipment through the openings that would take longer than the normal transit time, will be considered outside the scope of the NRC staff's review.

The NRC staff reviewed the changes to SR 3.6.4.1.3. The NRC staff determined that the SR continues to provide appropriate confirmation that [secondary] containment boundary doors are properly positioned and capable of performing their function in preserving the [secondary]

containment boundary. The NRC staff determined that the SRs continue to appropriately verify the operability of the [secondary] containment and provide assurance that the necessary quality of systems and components are maintained in accordance with 10 CFR 50.36(c)(3).

Additionally, the NRC staff evaluated the impact of modifying STS to allow [secondary] containment access openings to be open for entry and exit on the design basis radiological consequence dose analyses to ensure that the modification will not result in an increase in the radiation dose consequences and that the resulting calculated radiation doses will remain within *the current radiological consequence analyses*~~the design criteria specified in 10 CFR 50.67 and the accident specific design criteria outlined in RG 1.183~~. The NRC staff review of these DBAs determined that there are two DBAs that take credit for the [secondary] containment, and are possibly impacted by the brief, inadvertent, simultaneous opening of both an inner and outer access door during normal entry and exit conditions, the loss-of-coolant accident (LOCA) and the fuel handling accident (FHA) in [secondary] containment.

3.2.1 LOCA

Following a LOCA, the [secondary] containment structure is maintained at a negative pressure ensuring that leakage from primary containment to [secondary] containment can be collected and filtered prior to release to the environment. The SGT system performs the function of maintaining a negative pressure within the [secondary] containment, as well as collecting and filtering the leakage from primary containment. The SGT system is credited for mitigation of the radiological releases from the [secondary] containment. In the LOCA analysis, the [secondary] containment draw down analysis assumes that SGT system can draw down the [secondary] containment within [5 minutes]. STS SR 3.6.4.1.4 requires one SGT subsystem to draw down the [secondary] containment, to greater than or equal to [0.25] inches of vacuum water gauge in a maximum allowable time of [120] seconds.

Conservatively, the DBA LOCA radiological consequence analysis in [UFSAR Chapter 15] assumes that following the start of a DBA LOCA the [secondary] containment pressure of [0.25] inches of vacuum water gauge is achieved at approximately [10] minutes. It is assumed that releases into the [secondary] containment prior to the [10]-minute draw down time leak directly to the environment as a ground level release with no filtration. After the assumed [10]-minute draw down these releases are filtered by the SGT system and released via the SGT system exhaust vent.

Based on this information, the NRC staff concludes that the DBA LOCA analysis has sufficient conservatism by assuming a draw down time of [10] minutes from the start of the DBA LOCA. Margin exists to ensure that the [secondary] containment can be reestablished during a brief, inadvertent, simultaneous opening of the inner and outer doors, and there is reasonable assurance that a failure of a safety system needed to control the release of radioactive material to the environment will not result. The brief, inadvertent, simultaneous opening of the secondary containment access doors does not impact the design bases and will not result in an increase in any on-site or off-site dose.

Based on the above discussion, the NRC staff finds that the proposed change to the STSs does not impact the design basis LOCA radiological consequence analysis, will not result in an increase in any onsite or offsite dose, and is consistent with regulatory requirements and guidance identified in Section 2.3 of this safety evaluation. The NRC staff finds, that the

proposed change to the STSs will continue to comply with these criteria and that that the estimates of the dose consequences of the postulated DBAs will comply with *the current radiological consequence analyses*~~the requirements of 10 CFR 50.67 and the accident specific dose guidelines specified in RG 1.183~~. Therefore, the proposed changes are acceptable with regard to the radiological consequences of the postulated DBAs.

3.2.2 FHA in [Secondary] Containment

During normal operation, non-safety related systems are used to maintain the [secondary] containment at [0.25] inches of vacuum water gauge to ensure that any leakage is into the building and that any [secondary] containment atmosphere exiting the building is via a monitored pathway. The refueling floor, which is inside the [secondary] containment, is maintained at a negative [0.25] inches of vacuum water gauge by normal operating ventilation systems. The refueling floor exhaust ductwork in the [secondary] containment is equipped with radiation monitors to detect a fuel handling accident. When a radiological release is sensed by the radiation monitors, a [secondary] containment isolation signal is generated. This initiates the SGT system and the normal ventilation system isolates. The radiation monitor is positioned such that it will detect the release and send a closure signal to the [secondary] containment isolation dampers.

Following a FHA, the [secondary] containment structure is maintained at a negative pressure by the SGT system ensuring that fission products released from the spent fuel pool to [secondary] containment can be collected and filtered prior to release to the environment. In the FHA analysis, the [secondary] containment draw down analysis demonstrates that SGT system can draw down the [secondary] containment within [5 minutes]. The SGT system is credited for mitigation of the radiological releases from the [secondary] containment. STS SR 3.6.4.1.4 requires one SGT subsystem to draw down the [secondary] containment, to greater than or equal to [0.25] inches of vacuum water gauge in a maximum allowable time of [120] seconds.

Conservatively, the DBA FHA radiological consequence analysis in [UFSAR Chapter 15] assumes that following the start of a DBA FHA the [secondary] containment pressure of [0.25] inches of vacuum water gauge is achieved at approximately [10] minutes. It is assumed that releases into the [secondary] containment prior to the [10]-minute draw down time leak directly to the environment as a ground level release with no filtration. After the assumed [10]-minute draw down these releases are filtered by the SGT system and released via the SGT system exhaust vent.

Based on this information, the NRC staff concludes that the DBA FHA analysis has sufficient conservatism by assuming a draw down time of [10] minutes from the start of the DBA FHA. Margin exists to ensure that the [secondary] containment can be reestablished during brief, inadvertent, simultaneous opening of the inner and outer doors, and there is reasonable assurance that a failure of a safety system needed to control the release of radioactive material to the environment will not result. The brief, inadvertent, simultaneous opening of the [secondary] containment access doors does not impact the design bases and will not result in an increase in any on-site or off-site dose.

Based on the above discussion, the NRC staff finds that the proposed change to the STSs does not impact the design basis FHA radiological consequence analysis, will not result in an increase in any onsite or offsite dose, and is consistent with regulatory requirements and guidance

identified in Section 2.3 of this safety evaluation. The NRC staff finds, that the proposed change to the STSs will continue to comply with these criteria and that that the estimates of the dose consequences of the postulated DBAs will comply with *the current radiological consequence analyses*~~the requirements of 10 CFR 50.67 and the accident specific dose guidelines specified in RG 1.183~~. Therefore, the proposed changes are acceptable with regard to the radiological consequences of the postulated DBAs.

3.3 PROPOSED CHANGE TO SURVEILLANCE REQUIREMENT 3.6.4.1.4

The changes to SR 3.6.4.1.4 are editorial only and do not change any technical aspects of SR 3.6.4.1.4. The NRC staff determined that the change is acceptable.

4.0 CONCLUSION

The NRC staff reviewed traveler TSTF-551, Revision 3, which proposed changes to NUREG-1433, Volumes 1 (STS) and 2 (Bases) and NUREG-1434 Volumes 1 (STS) and 2 (Bases). The NRC staff determined that the proposed changes to the STS met the standards for TS in 10 CFR 50.36(b). The proposed SRs assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be met, and satisfy 10 CFR 50.36(c)(3). Additionally, the changes to the STS were reviewed for technical clarity and consistency with customary terminology and format in accordance with SRP Chapter 16.

The proposed bases, which will be added to future revisions to NUREG-1433, Volume 2, and NUREG-1434, Volume 2, satisfy the Commission's Policy Statement by addressing the questions specified in the policy statement, and cite references to appropriate licensing documentation to support the Bases.

Additionally, the NRC staff has evaluated the impact of the proposed changes on the design basis radiological consequence analyses against the regulatory requirements and guidance identified in Section 2.3 of this SE. The NRC staff finds, with reasonable assurance that the changes to the STSs will continue to comply with the *current radiological consequence analyses*~~requirements of 10 CFR 50.67 and the guidelines specified in RG 1.183~~. Therefore, the proposed changes are acceptable with regard to the radiological consequences of the postulated DBAs.

Technical contacts: Kristy Bucholtz, NRR/DRA/ARCB
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Attachment: Basis for Accepting the Proposed Changes to the Standard Technical Specification Bases, Volume 2 of NUREGs-1433 and -1434

Date:

ATTACHMENT

BASIS FOR ACCEPTING THE PROPOSED CHANGES TO THE STANDARD TECHNICAL SPECIFICATION BASES, VOLUME 2 OF NUREGS-1433 AND -1434

1.0 INTRODUCTION

Traveler TSTF-551 proposes changes to "Standard Technical Specifications, General Electric BWR/4 Plants, BWR/4" NUREG-1433, Volume 2, "Bases," Revision 4.0, April 2012, ADAMS Accession No. ML12104A193 and "Standard Technical Specifications, General Electric BWR/6 Plants, BWR/6" NUREG-1434, Volume 2, "Bases," Revision 4.0, April 2012, ADAMS Accession No. ML12104A196. The changes would be incorporated into future revisions of NUREG-1433, Volume 2, and NUREG-1434, Volume 2. A summary of the changes and the NRC staff's evaluation of those changes are presented in this attachment.

2.0 REGULATORY EVALUATION

2.1 APPLICABLE REGULATIONS AND GUIDANCE

The regulation at 10 CFR 50.36(a)(1) states that each applicant for a license authorizing operation of a production or utilization facility shall include in his application proposed technical specifications in accordance with the requirements of this section. A summary statement of the bases or reasons for such specifications, other than those covering administrative controls, shall also be included in the application, but shall not become part of the technical specifications.

In its Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors, the Commission presented its policy on the scope and purpose of the Technical Specifications. The Commission explained how implementation of the policy statement through implementation of the improved STS is expected to produce an improvement in the safety of nuclear power plants through the use of more operator-oriented TS, improved TS Bases, reduced action-statement-induced plant transients, and more efficient use of NRC and industry resources.

The Final Policy Statement provides the following description of the scope and the purpose of the Technical Specification Bases:

> Appropriate Surveillance Requirements and Actions should be retained for each LCO which remains or is included in the Technical Specifications. Each LCO, Action, and Surveillance Requirement should have supporting Bases. The Bases should at a minimum address the following questions and cite references to appropriate licensing documentation (e.g., FSAR, Topical Report) to support the Bases.
>
> 1. What is the justification for the Technical Specification, i.e., which Policy Statement criterion requires it to be in the Technical Specifications?

2. What are the Bases for each LCO, i.e., why was it determined to be the lowest functional capability or performance level for the system or component in question necessary for safe operation of the facility and, what are the reasons for the Applicability of the LCO?

3. What are the Bases for each Action, i.e., why should this remedial action be taken if the associated LCO cannot be met; how does this Action relate to other Actions associated with the LCO; and what justifies continued operation of the system or component at the reduced state from the state specified in the LCO for the allowed time period?

4. What are the Bases for each Safety Limit?

5. What are the Bases for each Surveillance Requirement and Surveillance Frequency; i.e., what specific functional requirement is the surveillance designed to verify? Why is this surveillance necessary at the specified frequency to assure that the system or component function is maintained, that facility operation will be within the Safety Limits, and that the LCO will be met?

   Note: In answering these questions the Bases for each number (e.g., Allowable Value, Response Time, Completion Time, Surveillance Frequency, etc.), state, condition, and definition (e.g., operability) should be clearly specified. As an example, a number might be based on engineering judgment, past experience, or PSA insights; but this should be clearly stated.

The NRC staff used the guidance contained in the Final Policy Statement during its review of the proposed changes to the Bases.

2.2 DESCRIPTION OF CHANGES

Volume 2 of NUREGs-1433 and -1434 contain the Bases for each Safety Limit and each LCO contained in Volume 1. The Bases for each LCO is organized into sections:

Background
Applicable Safety Analyses, LCO, and Applicability
Actions
Surveillance Requirements
References

The Bases for SR 3.6.4.1.1 in NUREGs-1433 and -1434 is being revised, and the Bases for SR 3.6.4.1.3 in NUREG-1433 is being revised. The following discussion provides a summary of the revised Bases, followed by the NRC staff's evaluation of the revised Bases.

3.0 TECHNICAL EVALUATION

3.1 REVISION TO SR 3.6.4.1.1 BASES

The Bases for SR 3.6.4.1.1 is revised by the addition of a description of the modification to the applicability of the SR acceptance criterion. The revised Bases describe conditions that could lead to the required vacuum not being met and provides a discussion of why these conditions do not indicate a change in the leaktightness of the [secondary] containment boundary. It also provides a description of the analysis needed to determine whether one train of SGT could establish the assumed [secondary] containment vacuum in the unlikely event of an accident occurring.

The NRC staff reviewed the revised Bases and determined that it adequately provides the basis for the SR, and provides an appropriate description of the note which modifies the SR.

3.2 REVISION TO SR 3.6.4.1.3 BASES

The Bases for SR 3.6.4.1.3 are revised in their entirety to describe that the verification of one door being closed is necessary to provide assurance that exfiltration from the [secondary] containment does not occur. The revised bases also provide an explanation that the intent is not to breach the [secondary] containment boundary, but the access openings may be used for entry and exit.

The NRC staff reviewed the revised Bases and determined that it adequately provides the purpose and the basis for the SR.

4.0 CONCLUSION

The NRC staff determined that TS Bases changes are consistent with the proposed TS changes and provide an explanation and supporting information for each of the SRs. Therefore, the NRC staff determined that the revised Bases are consistent with the Commission's Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors, dated July 2, 1993 (58 *Federal Register* 39132).

DRAFT MODEL SAFETY EVALUATION

BY THE OFFICE OF NUCLEAR REACTOR REGULATION

TECHNICAL SPECIFICATIONS TASK FORCE TRAVELER

TSTF-551, REVISION 3,

"REVISE SECONDARY CONTAINMENT SURVEILLANCE REQUIREMENTS"

[NOTE: Throughout this safety evaluation (SE), items that are enclosed in square brackets signify plant-specific nomenclature or values to be taken from the licensee's submittal.]

1.0 INTRODUCTION

By application dated **[enter date]**, (Agencywide Documents Access and Management System (ADAMS) Accession No. **[MLXXXXXXXXX]**, **[name of licensee]** (the licensee) requested changes to the technical specifications (TS) for **[name of facility]**. Specifically, the licensee requested changes to the TSs to adopt Technical Specifications Task Force (TSTF) traveler, TSTF-551, Revision 3, "Revise Secondary Containment Surveillance Requirements," dated October 3, 2016 (ADAMS Accession No. ML16277A226). The NRC approved the traveler on *[***Month, Day, 2017 (ADAMS Accession No. MLXXXX***]*).

The proposed changes would allow the **[secondary]** containment vacuum limit to not be met provided that the standby gas treatment (SGT) system remains capable of establishing the required **[secondary]** containment vacuum ~~within the **[specified time]**~~ and revises the TS to permit **[secondary]** containment access opening to be open to permit ingress and egress.

2.0 REGULATORY EVALUATION

2.1 SYSTEM DESCRIPTION

The **[secondary]** containment is a structure that encloses the primary containment, including components that may contain primary system fluid. The safety function of the **[secondary]** containment is to contain, dilute, and hold up fission products that may leak from primary containment following a design basis accident (DBA) to ensure the control room operator and offsite doses are within the regulatory limits. There is no redundant train or system that can perform the **[secondary]** containment function should the **[secondary]** containment be inoperable.

The **[secondary]** containment boundary is the combination of walls, floor, roof, ducting, doors, hatches, penetrations and equipment that physically form the **[secondary]** containment. Routinely used **[secondary]** containment access openings contain at least one inner and one outer door in an airlock configuration. In some cases, **[secondary]** containment access openings are shared such that there are multiple inner or outer doors. All **[secondary]** containment access doors are normally kept closed, except when the access opening is being used for entry and exit of personnel, equipment, or material.

[Secondary] containment operability is based on its ability to contain, dilute, and hold up fission products that may leak from primary containment following a DBA. To prevent ground level exfiltration of radioactive material while allowing the **[secondary]** containment to be designed as a mostly conventional structure, the **[secondary]** containment requires support systems to maintain the pressure at less than atmospheric pressure. During normal operation, non-safety related systems are used to maintain the **[secondary]** containment at a slight negative pressure to ensure any leakage is into the building and that any **[secondary]** containment atmosphere exiting is via a pathway monitored for radioactive material. However, during normal operation it is possible for the **[secondary]** containment vacuum to be momentarily less than the required vacuum for a number of reasons, such as during wind gusts or swapping of the normal ventilation subsystems.

During emergency conditions, the SGT system is designed to be capable of drawing down the **[secondary]** containment to a required vacuum within a prescribed time and continue to maintain the negative pressure as assumed in the accident analysis. For **[name of facility]**, the SGT must be able to establish the required vacuum within **[insert time requirement]**. The leak tightness of the **[secondary]** containment together with the SGT system ensure that radioactive material is either contained in the **[secondary]** containment or filtered through the SGT system filter trains before being discharged to the outside environment via the elevated release point.

2.2 PROPOSED TECHNICAL SPECIFICATION CHANGES

The proposed changes would allow the **[secondary]** containment vacuum limit to not be met provided the SGT system remains capable of establishing the required **[secondary]** containment vacuum. The proposed changes would also allow for the temporary opening of the inner and outer doors of [**secondary**] containment for the purpose of ingress and egress (i.e., normal opening and prompt closure of a door for transit).

2.2.1 Revision to Surveillance Requirement 3.6.4.1.1

[*NOTE: This change is applicable to all BWR types.~~NUREGs-1433 and -1434.~~*]

Surveillance requirement (SR) 3.6.4.1.1 requires verification that **[secondary]** containment vacuum is ≥ **[0.25]** inch of vacuum water gauge. This SR would be modified by a note that states:

> Not required to be met for 4 hours if analysis demonstrates one standby gas treatment (SGT) subsystem is capable of establishing the required **[secondary]** containment vacuum.

2.2.2 Revision to Surveillance Requirement 3.6.4.1.3

[*NOTE: This change is applicable to BWR/2, BWR/3, BWR/4, and BWR/5 plants ~~NUREG-1433~~ only*.]

SR 3.6.4.1.3 requires verification that one **[secondary]** containment access door in each access opening is closed. This SR would be modified by adding the following phrase to the end of the SR statement, "…except when the access opening is being used for entry and exit."

2.2.3 Revision to Surveillance Requirement 3.6.4.1.4

An editorial change is made to SR 3.6.4.1.4 in which the words "standby gas treatment" are replaced with the initialism "SGT."

2.3 REGULATORY REQUIREMENTS AND GUIDANCE

The regulation at Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36(a)(1) requires an applicant for an operating license to include in the application proposed TS in accordance with the requirements of 10 CFR 50.36. The applicant must include in the application, a "summary statement of the bases or reasons for such specifications, other than those covering administrative controls." However, per 10 CFR 50.36(a)(1), these technical specification bases "shall not become part of the technical specifications."

Additionally, 10 CFR 50.36(b) requires:

> Each license authorizing operation of a … utilization facility … will include technical specifications. The technical specifications will be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to 10 CFR 50.34 ["Contents of applications; technical information"]. The Commission may include such additional technical specifications as the Commission finds appropriate.

The categories of items required to be in the TSs are provided in 10 CFR 50.36(c). As required by 10 CFR 50.36(c)(2)(i), the TSs will include limiting conditions for operation (LCOs), which are the lowest functional capability or performance levels of equipment required for safe operation of the facility. Per 10 CFR 50.36(c)(2)(i), when an LCO of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met.

The regulation at 10 CFR 50.36(c)(3) requires TSs to include items in the category of SRs, which 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 LCOs will be met.

The NRC staff's guidance for review of TSs is in Chapter 16, *Technical Specifications*, of NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants" (SRP), dated March 2010 (ADAMS Accession No. ML100351425).

~~NUREG-0800, SRP Section 15.0.1, "Radiological Consequence Analyses Using Alternative Source Terms," Revision 0, dated July 2000 (ADAMS Accession No. ML003734190), provides guidance to the NRC staff for the review of alternate source term (AST) amendment requests. SRP 15.0.1 states that the NRC reviewer should evaluate the proposed change against the guidance in Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," Revision 0, dated July 2000 (ADAMS Accession No. ML003716792).~~

~~RG 1.183 provides acceptable methodology for analyzing the radiological consequences of several design basis accidents to show compliance with 10 CFR 50.67. RG 1.183 provides guidance to licensees on acceptable application of AST (also known as the accident source term) submittals, including acceptable radiological analysis assumptions for use in conjunction with the accepted AST.~~

~~10 CFR 50.67, "Accident source term," states that:~~

> ~~(i) An individual located at any point on the boundary of the exclusion area for any 2-hour period following the onset of the postulated fission product release, would not receive a radiation dose in excess of 0.25 Sv (25 rem) total effective dose equivalent (TEDE),~~
> ~~(ii) An individual located at any point on the outer boundary of the low population zone, who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage), would not receive a radiation dose in excess of 0.25 Sv (25 rem) TEDE, and~~
> ~~(iii) Adequate radiation protection is provided to permit access to and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 0.05 Sv (5 rem) TEDE for the duration of the accident.~~

3.0 TECHNICAL EVALUATION

The NRC staff evaluated the licensee's application to determine if the proposed changes are consistent with the guidance, regulations, and licensing information discussed in Section 2.3 of this safety evaluation (SE). In determining whether an amendment to a license will be issued, the Commission is guided by the considerations that govern the issuance of initial licenses to the extent applicable and appropriate. In making its determination as to whether to amend the license, the NRC staff considered those regulatory requirements that are automatically conditions of the license through 10 CFR 50.54.

The regulation at 10 CFR 50.36(a)(1) states, in part: "A summary statement of the bases or reasons for such specifications … shall also be included in the application, but shall not become part of the technical specifications." Accordingly, along with the proposed TS changes, the licensee also submitted TS Bases changes that correspond to the proposed STS changes for information only.

3.1 PROPOSED CHANGE TO SURVEILLANCE REQUIREMENT 3.6.4.1.1

A note is being added to SR 3.6.4.1.1. The note allows the SR to not be met for up to 4 hours if an analysis demonstrates that one SGT subsystem is capable of establishing the required **[secondary]** containment vacuum. During normal operation, conditions may occur that result in SR 3.6.4.1.1 not being met for short durations. For example, wind gusts that lower external pressure or loss of the normal ventilation system that maintains **[secondary]** containment vacuum may affect **[secondary]** containment vacuum. These conditions may not be indicative

of degradations of the **[secondary]** containment boundary or of the ability of the SGT system to perform its specified safety function.

The note provides an allowance for the licensee to confirm **[secondary]** containment operability by confirming that one SGT subsystem is capable of performing its specified safety function. This confirmation is necessary to apply the exception to meeting the SR acceptance criterion. While the duration of these occurrences is anticipated to be very brief, the allowance is permitted for a maximum of 4 hours, ~~[~~which is consistent with the time permitted for **[secondary]** containment to be inoperable per [Condition A of LCO 3.6.4.1 or the corresponding Condition for the plant-specific TS].

The NRC staff has evaluated the impact of this note on the licensee's design basis radiological consequence analyses to ensure that the proposed change will not result in an increase in the dose consequences and that the resulting calculated doses remain within the *current radiological consequence analyses*~~design criteria specified in 10 CFR 50.67 and the accident specific design criteria outlined in RG 1.183~~.

The proposed addition of the note to SR 3.6.4.1.1 does not change the TS requirement to meet SR 3.6.4.1.4 and SR 3.6.4.1.5. SR 3.6.4.1.4 requires verification that the **[secondary]** containment can be drawn down to ≥ [0.25] inch of vacuum water gauge in ≤ [120] seconds using one SGT subsystem. SR 3.6.4.1.5 requires verification that the **[secondary]** containment can be maintained ≥ [0.25] inch of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate ≤ [4000] cubic feet per minute. In addition, TS LCO 3.6.4.3, "Standby Gas Treatment (SGT) System," must be met; otherwise the licensee shall shut down the reactor or follow any remedial action permitted by TSs until the condition can be met.

As discussed above, **[secondary]** containment operability is based on its ability to contain, dilute, and hold up fission products that may leak from primary containment following a DBA. To prevent ground level exfiltration of radioactive material the **[secondary]** containment pressure must be maintained at a pressure that is less than atmospheric pressure. The **[secondary]** containment requires support systems to maintain the control volume pressure less than atmospheric pressure. Following an accident, the SGT system ensures the **[secondary]** containment pressure is less than the external atmospheric pressure. During normal operation, non-safety related systems are used to maintain the **[secondary]** containment at a negative pressure. However, during normal operation it is possible for the **[secondary]** containment vacuum to be momentarily less than the required vacuum for a number of reasons. These conditions may not be indicative of degradations of the **[secondary]** containment boundary or of the ability of the SGT system to perform its specified safety function. Since the licensee meets the requirements of SR 3.6.4.1.4, SR 3.6.4.1.5, meets the LCO or is following the Actions of TS LCO 3.6.4.3, and the licensee's analysis confirms **[secondary]** containment operability by confirming that one SGT subsystem is capable of performing its specified safety function, then there is reasonable assurance that the **[secondary]** containment and SGT subsystem will maintain the vacuum requirements during a DBA.

Therefore, the NRC staff has determined that: if the conditions do not affect (1) the ability to maintain the **[secondary]** containment pressure during an accident, at a pressure that is less than atmospheric, and (2) the time assumed in the accident analyses to draw down the **[secondary]** containment pressure, then the **[secondary]** containment can perform its safety

function and may be considered TS operable. This is evident by being able to successfully perform and meet SR 3.6.4.1.4 and SR 3.6.4.1.5. These SRs require the SGT system to establish and maintain the required vacuum in the **[secondary]** containment as assumed in the accident analyses.

Furthermore, because the specified safety functions of the **[secondary]** containment and SGT subsystem can be performed in the time assumed in the licensee's accident analysis, then the fission products that bypass or leak from primary containment, or are released from the reactor coolant pressure boundary components located in **[secondary]** containment prior to release to the environment, will be contained and processed as assumed in the licensee's design basis radiological consequence dose analyses. The NRC staff finds that the proposed change does not affect the current radiological consequence analyses and concludes that the proposed change is acceptable with respect to the radiological consequences of DBAs.

3.2 PROPOSED CHANGE TO SURVEILLANCE REQUIREMENT 3.6.4.1.3

[NOTE: The proposed change is not applicable if the radiological dose consequence analysis assumes the [secondary] containment pressure is below atmospheric pressure prior to or coincident with the time at which the accident or event occurs. Such an analysis assumption would require a revised radiological dose consequence analysis considering the new release point (the open [secondary] containment doors), with appropriate atmospheric dispersion factors, and any other necessary revisions to the accident or event analysis.]

The NRC staff review was limited to the licensee's request to provide an allowance for the brief, inadvertent, simultaneous opening of redundant **[secondary]** containment access doors during normal entry and exit conditions. Planned activities that could result in the simultaneous opening of redundant **[secondary]** containment access openings, such as maintenance of a **[secondary]** containment personnel access door or movement of large equipment through the openings that would take longer than the normal transit time, will be considered outside the scope of the NRC staff's review.

The NRC staff reviewed the changes to SR 3.6.4.1.3. The NRC staff determined that the SR continues to provide appropriate confirmation that **[secondary]** containment boundary doors are properly positioned and capable of performing their function in preserving the **[secondary]** containment boundary. The NRC staff determined that the SRs continue to appropriately verify the operability of the **[secondary]** containment and provide assurance that the necessary quality of systems and components are maintained in accordance with 10 CFR 50.36(c)(3).

Additionally, the NRC staff evaluated the impact of modifying the TS to allow **[secondary]** containment access openings to be open for entry and exit on the licensee's design basis radiological consequence dose analyses to ensure that the modification will not result in an increase in the radiation dose consequences and that the resulting calculated radiation doses will remain within the design criteria specified in *the current radiological consequence analyses*~~10 CFR 50.67 and the accident specific design criteria outlined in RG 1.183~~. The NRC staff review of these DBAs determined that there are two DBAs that take credit for the **[secondary]** containment, and are possibly impacted by the brief, inadvertent, simultaneous opening of both an inner and outer access door during normal entry and exit conditions, the loss of coolant accident (LOCA) and the fuel handling accident (FHA) in **[secondary]** containment.

3.2.1 LOCA

Following a LOCA, the **[secondary]** containment structure is maintained at a negative pressure ensuring that leakage from primary containment to **[secondary]** containment can be collected and filtered prior to release to the environment. The SGT system performs the function of maintaining a negative pressure within the **[secondary]** containment, as well as collecting and filtering the leakage from primary containment. The licensee credits the SGT system for mitigation of the radiological releases from the **[secondary]** containment. In the LOCA analysis, the **[secondary]** containment draw down analysis assumes that SGT system can draw down the **[secondary]** containment within **[5 minutes]**. TS SR 3.6.4.1.4 requires one SGT subsystem to draw down the **[secondary]** containment, to greater than or equal to **[0.25]** inches of vacuum water gauge in a maximum allowable time of **[120]** seconds.

Conservatively, the DBA LOCA radiological consequence analysis in **[Updated Final Safety Analysis Report (UFSAR) Chapter 15]** assumes that following the start of a DBA LOCA the **[secondary]** containment pressure of **[0.25]** inches of vacuum water gauge is achieved at approximately **[10]** minutes. The license assumes that releases into the **[secondary]** containment prior to the **[10]**-minute draw down time leak directly to the environment as a ground level release with no filtration. After the assumed **[10]**-minute draw down these releases are filtered by the SGT system and released via the SGT system exhaust vent.

Based on this information, the NRC staff concludes that the licensee's DBA LOCA analysis has sufficient conservatism by assuming a draw down time of **[10]** minutes from the start of the DBA LOCA. Margin exists to ensure that the **[secondary]** containment can be reestablished during a brief, inadvertent, simultaneous opening of the inner and outer doors, and there is reasonable assurance that a failure of a safety system needed to control the release of radioactive material to the environment will not result. The brief, inadvertent, simultaneous opening of the **[secondary]** containment access doors does not impact the design bases and will not result in an increase in any on-site or off-site dose.

Based on the above discussion, the NRC staff finds that the licensee's proposed change to the TSs does not impact the licensee's design basis LOCA radiological consequence analysis and will not result in an increase in any onsite or offsite dose. Therefore, the NRC staff concludes that this change is acceptable with respect to the radiological consequences of the DBAs.

[The licensee was approved for AST methodology and the radiological dose consequences analyses for DBAs via license amendment[s] **[insert license amendment number]** for **[name of facility]**.] The NRC staff reviewed the impact of the proposed changes to **[name of facility]** TS, on all DBAs currently analyzed in the **[name of facility]** Updated Final Safety Analysis Report (UFSAR) that could have the potential for significant dose consequences. **[Chapter 15]** of the **[name of facility]** UFSAR describes the DBAs and their radiological consequence analysis results.]

3.2.2 FHA in **[Secondary]** Containment

During normal operation, non-safety related systems are used to maintain the **[secondary]** containment at **[0.25]** inches of vacuum water gauge to ensure that any leakage is into the building and that any **[secondary]** containment atmosphere exiting the building is via a monitored pathway. The refuel floor, which is inside the **[secondary]** containment, is

maintained at a negative **[0.25]** inches of vacuum water gauge by normal operating ventilation systems. The refueling floor exhaust ductwork in the **[secondary]** containment is equipped with radiation monitors to detect a fuel handling accident. When a radiological release is sensed by the radiation monitors, a **[secondary]** containment isolation signal is generated. This initiates the SGT system and the normal ventilation system isolates. The radiation monitor is positioned such that it will detect the release and send a closure signal to the **[secondary]** containment isolation dampers.

Following a FHA, the **[secondary]** containment structure is maintained at a negative pressure by the SGT system ensuring that fission products released from the spent fuel pool to **[secondary]** containment can be collected and filtered prior to release to the environment. In the FHA analysis, the **[secondary]** containment draw down analysis demonstrates that SGT system can draw down the **[secondary]** containment within **[5 minutes]**. The licensee credits the SGT system for mitigation of the radiological releases from the **[secondary]** containment. TS SR 3.6.4.1.4 requires one SGT subsystem to draw down the **[secondary]** containment, to greater than or equal to **[0.25]** inches of vacuum water gauge in a maximum allowable time of **[120]** seconds.

Conservatively, the DBA FHA radiological consequence analysis in **[UFSAR Chapter 15]** assumes that following the start of a DBA FHA the **[secondary]** containment pressure of **[0.25]** inches of vacuum water gauge is achieved at approximately **[10]** minutes. The license assumes that releases into the **[secondary]** containment prior to the **[10]**-minute draw down time leak directly to the environment as a ground level release with no filtration. After the assumed **[10]-**minute draw down these releases are filtered by the SGT system and released via the SGT system exhaust vent.

Based on this information, the NRC staff concludes that the licensee's DBA FHA analysis has sufficient conservatism by assuming a draw down time of **[10]** minutes from the start of the DBA FHA. Margin exists to ensure that the **[secondary]** containment can be reestablished during brief, inadvertent, simultaneous opening of the inner and outer doors, and there is reasonable assurance that a failure of a safety system needed to control the release of radioactive material to the environment will not result. The brief, inadvertent, simultaneous opening of the **[secondary]** containment access doors does not impact the design bases and will not result in an increase in any on-site or off-site dose.

Based on the above discussion, the NRC staff finds that the licensee's proposed change to the TSs does not impact the licensee's design basis FHA radiological consequence analysis and will not result in an increase in any onsite or offsite dose. Therefore, the NRC staff concludes that this change is acceptable with respect to the radiological consequences of the DBAs.

The NRC staff review was limited to the licensee's request to provide an allowance for the brief, inadvertent, simultaneous opening of redundant **[secondary]** containment access doors during normal entry and exit conditions. Planned activities that could result in the simultaneous opening of redundant **[secondary]** containment access openings, such as maintenance of a **[secondary]** containment personnel access door or movement of large equipment through the openings that would take longer than the normal transit time, will be considered outside the scope of the NRC staff's review.

3.2.3 Conclusion

As described above, the NRC staff reviewed the technical basis provided by the licensee to assess the radiological impacts of the changes to the **[secondary]** containment in the licensee's TSs. The NRC staff finds that the licensee proposed change to SR 3.6.4.1.3 is consistent with regulatory requirements and guidance identified in Section 2.3 of this SE. The NRC staff finds, with reasonable assurance that the licensee's change to the TSs will continue to comply with these criteria and that that the licensee's estimates of the dose consequences of a design basis LOCA and FHA will comply with the requirements of *the current radiological consequence analyses~~10 CFR 50.67 and the accident specific dose guidelines specified in RG 1.183~~*. Therefore, the proposed changes are acceptable with regard to the radiological consequences of the postulated DBAs.

3.3 PROPOSED CHANGE TO SURVEILLANCE REQUIREMENT 3.6.4.1.4

The changes to SR 3.6.4.1.4 are editorial only and do not change any technical aspects of SR 3.6.4.1.4. The NRC staff determined that the change is acceptable.

3.4 VARIATIONS FROM THE APPROVED TRAVELER

[NOTE: Technical reviewers and/or project manager to discuss variations from the approved traveler and whether they are acceptable. Choose the applicable paragraphs based on information provided in the LAR.]

[The licensee is not proposing any variations from the TS changes described in TSTF-551 or the applicable parts of the NRC staff's safety evaluation of TSTF-551.]

[The licensee is proposing the following variations from the TS changes described in TSTF-551 or the applicable parts of TSTF-551 or the NRC staff's safety evaluation. These variations do not affect the applicability of TSTF-551 or the NRC staff's safety evaluation to the proposed license amendment.]

[The [PLANT] TS do not contain an SR equivalent to SR 3.6.4.1.1 modified by TSTF-551. Therefore, the addition of the SR 3.6.4.1.1 Note is not applicable.]

[The [PLANT] TS already contains an allowance similar to that made to SR 3.6.4.1.3. Therefore, the proposed change does not contain this portion of TSTF-551.]

[The [PLANT] TS utilize different [numbering][and][titles] than the Standard Technical Specifications on which TSTF-551 was based. Specifically, [describe differences between the plant-specific TS numbering and/or titles and the TSTF-551 numbering and titles.] These differences are administrative and do not affect the applicability of TSTF-546 to the [PLANT] TS.]

[The Traveler discusses the applicable regulatory requirements and guidance, including the 10 CFR 50, Appendix A, General Design Criteria (GDC). [PLANT] was not licensed to the 10 CFR 50, Appendix A, GDC. The [PLANT] equivalents of the referenced GDC are [discussion from licensee's application.] These differences do not alter the conclusion that the proposed change is applicable to [PLANT].]

3.~~4~~ SUMMARY

The NRC staff reviewed the proposed changes and determined that changes to the TS meet the standards for TS in 10 CFR 50.36(b). The proposed SRs assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be met, and satisfy 10 CFR 50.36(c)(3). Additionally, the changes to the TS were reviewed for technical clarity and consistency with customary terminology and format in accordance with SRP Chapter 16.

Additionally, the NRC staff has evaluated the impact of the proposed changes on the design basis radiological consequence analyses against the regulatory requirements and guidance identified in Section 2.3 of this SE. The NRC staff finds, with reasonable assurance that the licensee's change to the TSs will continue to comply with the requirements of *the current radiological consequence analyses*~~10 CFR 50.67 and the guidelines specified in RG 1.183~~. Therefore, the proposed changes are acceptable with regard to the radiological consequences of the postulated DBAs.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the **[Name of State]** State official was notified of the proposed issuance of the amendment on **[enter date]**. The State official had **[no]** comments. **[If comments were provided, they should be addressed here]**.

5.0 ENVIRONMENTAL CONSIDERATION

[Note: *This section is to be prepared by the PM. As needed, the PM should coordinate with NRR's Environmental Review and Projects Branch (RERP) to determine the need for an EA. Specific guidance on preparing EAs and considering environmental issues is contained in NRR Office Instruction LIC-203, "Procedural Guidance for Preparing Categorical Exclusions, Environmental Assessments, and Considering Environmental Issues."*]

The amendment changes requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and changes SRs. 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 consideration, and there has been no public comment on such finding published in the *Federal Register* on **[DATE (XX FR XXX)]**. 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 amendment.

6.0 CONCLUSION

The Commission has concluded, based on 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) there is reasonable assurance that 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 to the health and safety of the public

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Date: