November 10, 2003 TSTF-03-10

Dr. William D. Beckner, Director
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Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Response to June 23, 2003 Request for Additional Information on TSTF-422, Revision 1, "Change in Technical Specifications End States (CE NPSD-1186)"

Dear Dr. Beckner:

On June 3, 2002, the TSTF transmitted to the NRC for review TSTF-422, "Change in Technical Specifications End States (CE NPSD-1186)." Based on comments from the NRC, the justification was expanded and Revision 1 of TSTF-422 was transmitted on January 21, 2003. On June 23, 2003 the NRC provided a Request for Additional Information (RAI). This letter responds to that request.

Our responses are included in Attachment 1.

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

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Enclosure

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**Attachment 1**

**Response to NRC Request for Additional Information Dated June 23, 2003 Regarding TSTF-422, Revision 1, Change in Technical Specifications End States (CE NPSD-1186)**

NRC Comment 1

A statement similar to the following paragraph should appear in the TS Bases for each required action that includes a revised end state (i.e., table item numbers 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28 and 29 in the "Evaluation of Each Specification" table):

"TS required entry into shutdown modes that are within the applicability of the limiting condition for operation (LCO), such as this required action, are intended for the length of time it takes to restore the LCO conditions; generally for short term durations only. Since corrective maintenance will be necessary, the 10 CFR 50.65(a)(4) requirement to assess and manage risk will apply, and should confirm that remaining in the shutdown mode that is within the applicability of the LCO is acceptable for the plant specific configuration. NRC Reg Guide 1.182 endorses NUMARC 93-01 section 11 guidance for implementation of 10 CFR 50.65(a)(4), and shall be followed; including the conduct of an (a)(4) reevaluation for emergent conditions."

Response

We agree that the Bases for the revised end states should provide a discussion of the reasons for staying in the Applicability. The Bases addition proposed in TSTF-422 states: "Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. X). In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state." Reference "X" is the Topical Report.

We believe that this discussion adequately describes the reasons for the end state and meets the 10 CFR 50.36(a) description of Technical Specification Bases as, "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."

We do not believe the phrase "generally for short term durations only" should be included in the Bases as it is too vague and would be confusing as "short term" is undefined and "generally" and "only" are contradictory. This information is adequately captured in the Traveler and the Safety Evaluation. For instance, Attachment 1 of TSTF-422, General discussion, item 1.a, states the following: "As stated in the Topical, the revised end states were requested in order to minimize the time in which a plant is not in power operation. Longer duration repairs will often necessitate entry into MODE

5 either due to decreasing decay heat or to accomplish other maintenance in parallel with the original repair."

We agree that a 10 CFR 50.65(a)(4) assessment will be required. However, the provisions of 10 CFR 50.65(a)(4) are always applicable we believe that invoking 50.65(a)(4) in the Bases for a particular Required Action could be confusing. Similarly, we don't believe that stating that plants must utilize Regulatory Guide 1.182 in the Bases is appropriate. Plants must follow 10 CFR 50.65(a)(4) and to our knowledge all plants have committed to follow Regulatory Guide 1.182. The Bases of 25 Required Actions in the Technical Specifications is not the appropriate location to capture how a plant will meet the regulation when it applies at all times and to all systems, whether or not the system is governed by the Technical Specifications.

NRC Comments 2, 3, 5, 6, 7, 8, 9, 10, 11, and 12

NRC comments 2, 3, 5, 6, 7, 8, 9, 10, 11, and 12 request that the Bases of the Required Actions allowing the preferred end state be modified to contain other actions and considerations discussed in the Topical Report and the NRC's Safety Evaluation. Several of the comments also state that the licensees must commit to incorporating the additional actions and considerations into operating documentation.

Response

Several of the Staff's comments were similar in nature. A generic response is given below. This justification will be referenced when addressing specific comments.

The other actions and considerations that the Staff is requesting be added to the Technical Specifications or Bases were provided in the Topical Report under the heading "Tier 2 Restrictions." Section 5.6.2 of the Topical Report states, "For some risk-informed TSs, specific Tier 2 restrictions may be required. These restrictions are intended to provide a "defense in depth" approach to the risk-informed process. The Tier 2 restrictions are intended to preclude scheduled preventive maintenance on risk significant equipment combinations and operational activities. Tier 2 items apply only to planned maintenance situations or planned operational activities...The occurrence of Tier 2 equipment combinations during unplanned maintenance situations is not restricted.... No other specific Tier 2 items were identified to support the proposed Mode 4 changes. However, in several instances enhanced guidance is provided. This additional guidance is intended to be administratively controlled within the scope of the plant Maintenance Rule or Analogous Program." (emphasis added) The information contained in the Tier 2 discussions was not an assumption of the analysis or actions required to justify the modified end states. The information provided additional "defense in depth" guidance and is not appropriate to be included in the Technical Specifications.

Furthermore, the majority of the recommendations listed under "Tier 2 Restrictions" were prefaces with the word "None." According the authors, the intent in this

presentation was to provide information that could be more clearly described as Tier 3 restrictions. Section 5.6.3 of the Topical describes Tier 3 restrictions as "Entry and use of the proposed changes will be performed in accordance with the requirements of 10CFR50.65(a)(4). This regulation requires licensees to assess and mange the risk that may result from maintenance activities and applies to all modes of reactor operation."

The recommendations described under the "Tier 2 Restrictions" are not Technical Specification Bases material. As described above, 10 CFR 50.36(a) describes Technical Specification Bases as a summary statement of the bases or reasons for such specifications. In other words, the purpose of the Bases is to explain the Technical Specifications, not to contain additional requirements. This is amplified in NEI 01-03, "Writer's Guide for the Improved Standard Technical Specifications", Section 4.2.6, "Bases Content - Actions (or Safety Limit Violation)," which states that the Bases for each Required Action should explain why it is an acceptable deviation from the LCO, why Completion Times are acceptable, why MODE changes are required and why this is acceptable from a plant safety concern, and the basis of all numbers in the Required Action (e.g., Completion Times, parameter values or component requirements).

Licensee's adopting this Traveler are required to review and implement the Topical Report, which includes this additional guidance. Licensee's are responsible for assessing and incorporating the recommendations in the Topical Report into the appropriate plant processes used to implement 10 CFR 50.65(a)(4).

NRC Comment 2

Specification 3.3.8 (digital), Containment Purge Isolation Signal (CPIS), (table item 4): In accordance with the CEOG topical and staff SE, when the CPIS is disabled, the operating staff should be alerted and operation of the containment mini-purge should be restricted; and, consideration should be given to maintain availability of Containment Isolation Actuation Signal (CIAS) during CPIS Mode 4 repair. Practically this means that, a statement to this effect should appear in the TS Bases for the applicable required action. In addition, licensees must commit to incorporating suitable guidance into operating documentation.

Response

The table in Attachment 1 of TSTF-422, item 4, discusses this specification. The statements repeated in the SE appear in the Tier 2 discussions in the Topical Report. As stated in the response to NRC Comments 2, 3, 5, 6, 7, 8, 9, 10, 11, and 12, these statements are not appropriate for inclusion in the Technical Specification Bases. As stated in the Topical Report and the Attachment 1 Table, these recommendations will be managed through the program in place to implement 10 CFR 50.65(a)(4).

NRC Comment 3

Specification 3.3.8 (analog) & 3.3.9 (digital), Control Room Isolation Signal (CRIS), (table item 5): In accordance with the CEOG topical and staff SE, it would be prudent to minimize unavailability of Safety Injection Actuation Signal (SIAS) and alternate shutdown panel and/or remote shutdown capabilities during Mode 4 operation with CRIS unavailable. Practically this means that, a statement to this effect should appear in the TS Bases for the applicable required action. In addition, licensees must commit to incorporating suitable guidance into operating documentation.

Response

The table in Attachment 1 of TSTF-422, item 5, discusses this specification. The statements repeated in the SE appear in the Tier 2 discussions in the Topical Report. As stated in the response to NRC Comments 2, 3, 5, 6, 7, 8, 9, 10, 11, and 12, these statements are not appropriate for inclusion in the Technical Specification Bases. As stated in the Topical Report and the Attachment 1 Table, these recommendations will be managed through the program in place to implement 10 CFR 50.65(a)(4).

NRC Comment 4

Specification 3.6.3, Containment Isolation Valves (CIVs), (table item 12): In accordance with the staff SE, the revised end state applies when containment leakage is within limits but some portion of the containment isolation function is impaired (e.g., one valve in a two valve path inoperable or containment purge valves have leakage in excess of TS limits). The CIVs must still be functional under conditions anticipated to be credible during Mode 4 operation. Practically this means that, end state Mode 4 operation should only apply to TS Conditions A, D and E; TSTF-422 needs to be revised accordingly.

Response

There is a conflict between the justification given in the Topical Report and the Safety Evaluation. The Topical states that the new end state applies when “one or more penetration flow paths exist with one or more containment isolation valves inoperable” and the affected penetration flow path cannot be isolated with the prescribed AOT/CT.

The SE states that the new end state applies for any penetration having one CIV inoperable. The SE then states, “The issue of concern in the TS is the appropriate action/end state for extended repair of an inoperable CIV when one CIV in a single line is inoperable.”

In summary, the Topical asked for a revision to NUREG-1432, Revision 2, LCO 3.6.3, Condition F, for several conditions, including two CIVs in one or more penetrations inoperable. The SE proposes an entirely new condition for a single CIV in a single line inoperable. However, LCO 3.6.3 does not require a MODE change for a single CIV in a

single line inoperable. Therefore, there is no need for a modified end state for the condition described by the Staff in the SE.

The comment states that "the revised end state applies when containment leakage is within limits but some portion of the containment isolation function is impaired." This is a true statement as the Traveler is proposed. If containment leakage is not within limits, LCO 3.6.1 is not met and a plant shutdown to MODE 5 is required. Therefore, we do not believe a revision to TSTF-422 is needed.

NRC Comment 5

Specification 3.6.4, Containment Pressure, (table item 13): In accordance with the staff SE, "plants with steel shell containments, if the lower limit pressure specification is violated, the operators are to confirm operability of the vacuum breakers. .For all plants, when entering this action statement for violation of low containment pressure limit for a period projected to exceed one day, one containment spray pump is to be secured.'' Practically this means that: a statement should be added to the TS Bases of plants with steel shell containments to confirm vacuum breaker operability, since vacuum breakers are required to be operable in Modes 1 through 4 by TS; and, a required action is to be added to secure one containment spray pump when in the low pressure required action statement for a day ( 24 hour completion time).

Response

The table in Attachment 1 of TSTF-422, item 13, discusses this specification. The statements repeated in the SE appear in the Tier 2 discussions in the Topical Report. As stated in the response to NRC Comments 2, 3, 5, 6, 7, 8, 9, 10, 11, and 12, these statements are not appropriate for inclusion in the Technical Specification Bases. As stated in the Topical Report and the Attachment 1 Table, these recommendations will be managed through the program in place to implement 10 CFR 50.65(a)(4).

Note that LCO 3.6.12, Vacuum Relief Valves (Dual) requires the vacuum breaker valves to be OPERABLE in MODES 1, 2, 3, and 4. Therefore a Required Action to verify the vacuum relief valves are OPERABLE is redundant.

We do not believe that the proposed changes are consistent with the evaluation presented in the Topical Report. The Topical simply requests changing Required Action B.2 from "Be in MODE 5" to "Be in MODE 4" with a change to the Completion Time from 36 hours to 12 hours. This Required Action applies when Containment Pressure is not within limits and is not restored within 1 hour.

The SE repeats the requested change and states that it is acceptable. However, in the "Assessment" portion, the SE repeats "defense in depth" information provided in the Topical Report under Tier 2 restrictions. This information was not the basis for demonstrating the acceptability of the reviewed end state, but additional measures that

could be put in place to further lower the risk. These additional risk management actions are not appropriate for inclusion in the Technical Specifications or Bases as they are not the basis of the new end state.

NRC Comment 6

Specification 3.7.7, Component Cooling Water (CCW), (table item 19): In accordance with the CEOG topical and staff SE, when CCW is lost to the Reactor Coolant Pump (RCP) seals, reactor shutdown is required and the RCS Loops operating TS is entered. Limited duration natural circulation operation is acceptable, but extended plant operation in higher Mode 4 temperatures may degrade RCP elastomers. Mode 5 operation ensures adequately low RCS temperatures so that any RCP seal challenges would be avoided. Prior to entry into Mode 5 due to loss of CCW to RCP seals, the redundant CCW train should be confirmed to be operable and backup cooling water systems should be confirmed to be available for emergency use. SG inventory should be retained to assure a diverse and redundant heat removal source if CCW should fail. Practically this means that, in addition to the TS Bases stating the above, a condition/required action should be added to the TS that requires Mode 5 entry if CCW flow is lost to the RCP seals.

Response

The table in Attachment 1 of TSTF-422, item 19, discusses this specification. The statements repeated in the SE appear in the Tier 2 discussions in the Topical Report.

We agree that loss of RCP seal cooling should be considered when using the revised end state. The Bases proposed in TSTF-422 state, “If CCW flow is lost to the RCP seals, entering MODE 5 and lowering the RCS temperature should be considered in order to avoid possible damage to the RCP seal materials.”

However, adding a Required Action that addresses loss of CCW to the RCP seals will not provide the desired result. SR 3.7.7.1 contains a Note which states, “Isolation of CCW flow to individual components does not render the CCW System inoperable.” Loss of CCW flow to a particular component, such as the RCP seals, does not render the CCW LCO not met. Therefore a Condition that applies to loss of CCW flow to the RCP seals would never be entered unless a CCW train is also inoperable.

If a CCW train is inoperable, 72 hours is provided to restore the train to OPERABLE status. If the train is not restored, 6 hours is provided to be in MODE 3 and 12 hours to be in MODE 4. Therefore, the preferred end state will not apply until 90 hours after the train is inoperable. We do not believe it is possible for a plant to operate for 90 hours without CCW cooling to the RCP seals. A plant that has lost RCP seal cooling will have shutdown long before the preferred end state is entered.

Given that the recommendations were given as Tier 2 “defense in depth” statements and are not the basis of the revised end state, we don’t believe a Required Action is necessary.

NRC Comment 7

Specification 3.7.10, Essential Chill Water (ECW), (table item 22): A TS Bases statement should be added to the Bases on the required action with the revised end state, in accordance with the CEOG topical, advising that reduced pressure operation in Mode 4 should be considered to reduce the potential of a Loss of Coolant Accident (LOCA).

Response

The table in Attachment 1 of TSTF-422, item 22, discusses this specification. The statements repeated in the SE appear in the Tier 2 discussions in the Topical Report. As stated in the response to NRC Comments 2, 3, 5, 6, 7, 8, 9, 10, 11, and 12, these statements are not appropriate for inclusion in the Technical Specification Bases. As stated in the Topical Report and the Attachment 1 Table, these recommendations will be managed through the program in place to implement 10 CFR 50.65(a)(4).

NRC Comment 8

Specification 3.7.11, Control Room Emergency Air Cleanup System (CREACS), (table item 23): A TS Bases statement should be added to the Bases on the required action with the revised end state, in accordance with the CEOG topical, advising that regardless of the CREACS status, the risks of Mode 4 are lower (or equivalent) to the similar Mode 5 operating state, and that the availability of the alternate/local shutdown panels should be ensured.

Response

The table in Attachment 1 of TSTF-422, item 23, discusses this specification. The statements repeated in the SE appear in the Tier 2 discussions in the Topical Report. As stated in the response to NRC Comments 2, 3, 5, 6, 7, 8, 9, 10, 11, and 12, these statements are not appropriate for inclusion in the Technical Specification Bases. As stated in the Topical Report and the Attachment 1 Table, these recommendations will be managed through the program in place to implement 10 CFR 50.65(a)(4).

The proposed Bases for the modified Required Action already state, “Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5.”

NRC Comment 9

Specification 3.7.12, Control Room Emergency Air Temperature Control System (CREATCS), (table item 24): A TS Bases statement should be added to the Bases on the required action with the revised end state, in accordance with the CEOG topical, that the availability of the alternate/local shutdown panels should be ensured.

Response

The table in Attachment 1 of TSTF-422, item 24, discusses this specification. The statements repeated in the SE appear in the Tier 2 discussions in the Topical Report. As stated in the response to NRC Comments 2, 3, 5, 6, 7, 8, 9, 10, 11, and 12, these statements are not appropriate for inclusion in the Technical Specification Bases. As stated in the Topical Report and the Attachment 1 Table, these recommendations will be managed through the program in place to implement 10 CFR 50.65(a)(4).

NRC Comment 10

Specification 3.7.13, Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS), (table item 25): A TS Bases statement should be added to the Bases on the required action with the revised end state, in accordance with the CEOG topical, advising that regardless of the ECCS PREACS status, the risks of Mode 4 are lower (or equivalent) to the similar Mode 5 operating state. In addition, units adopting this change must have adopted the preplanned compensatory measures required for the NUREG-1432 TS condition for an inoperable ECCS boundary.

Response

The table in Attachment 1 of TSTF-422, item 25, discusses this specification. The proposed Bases for the modified Required Action already state, “Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5.”

Any plant adopting TSTF-287, Revision 5, which added Condition B and provides a condition for two ECCS PREACS trains inoperable due to an inoperable ECCS pump room boundary, is bound by the following Reviewer’s Note in TSTF-287: “[Reviewer’s Note: Adoption of Condition B is dependent on a commitment from the licensee to have written procedures available describing compensatory measures to be taken in the event of an intentional or unintentional entry into Condition B.] “ If a plant has not adopted TSTF-287, an inoperable ECCS pump room boundary will result in immediate entry into LCO 3.0.3 and the modified end state does not apply.

NRC Comment 11

Specification 3.7.15, PREACS, (table item 26): A TS Bases statement should be added to the Bases on the required action with the revised end state, in accordance with the CEOG topical, advising that regardless of the PREACS status, the risks of Mode 4 are lower (or equivalent) to the similar Mode 5 operating state. In addition, units adopting this change must have adopted the preplanned compensatory measures required for the NUREG-1432 TS condition for an inoperable penetration room boundary.

Response

The table in Attachment 1 of TSTF-422, item 26, discusses this specification. The proposed Bases for the modified Required Action already state, "Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5."

Any plant adopting TSTF-287, Revision 5, which added Condition B and provides a condition for two PREACS trains inoperable due to an inoperable penetration room boundary, is bound by the following Reviewer's Note in TSTF-287: "[Reviewer's Note: Adoption of Condition B is dependent on a commitment from the licensee to have written procedures available describing compensatory measures to be taken in the event of an intentional or unintentional entry into Condition B.] " If a plant has not adopted TSTF-287, an inoperable penetration room boundary will result in immediate entry into LCO 3.0.3 and the modified end state does not apply.

NRC Comment 12

Specification 3.8.1 , AC Sources Operating, (table item 27): In accordance with the CEOG topical and staff SE, switchyard activities during revised end state Mode 4 operation, other than those necessary to restore offsite power should be prohibited. Practically this means that, a statement to this effect should appear in the TS Bases for the applicable required action. In addition, licensees must commit to incorporating suitable guidance into operating documentation.

Response

The table in Attachment 1 of TSTF-422, item 27, discusses this specification. The statements repeated in the SE appear in the Tier 2 discussions in the Topical Report. As stated in the response to NRC Comments 2, 3, 5, 6, 7, 8, 9, 10, 11, and 12, these statements are not appropriate for inclusion in the Technical Specification Bases. As stated in the Topical Report and the Attachment 1 Table, these recommendations will be managed through the program in place to implement 10 CFR 50.65(a)(4).