

March 31, 2015

TSTF-14-16
PROJ0753

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

SUBJECT: Proposed Modifications to the Notice of Availability for TSTF-493, Revision 4,
"Clarify Application of Setpoint Methodology for LSSS Functions"

TSTF Traveler TSTF-493, Revision 4, "Clarify Application of Setpoint Methodology for LSSS Functions," was approved by the NRC in a Notice of Availability dated May 11, 2010. The TSTF-493 approval was the culmination of five years of research and discussions by the NRC and the industry to resolve the issues discussed in Regulatory Issue Summary 2006-17, dated August 24, 2006, "NRC Staff Position on the Requirements of 10 CFR 50.36, 'Technical Specifications,' Regarding Limiting Safety System Settings During Periodic Testing and Calibration of Instrument Channels." TSTF-493, Revision 4, was based on concepts described in a letter from the TSTF to the NRC dated February 23, 2009 (ADAMS accession number ML090540849), which were accepted in a letter from the NRC to the TSTF dated March 9, 2009 (ADAMS accession number ML090560592). TSTF-493, Revision 4, was submitted on July 31, 2009 (ADAMS Accession number ML100060064).

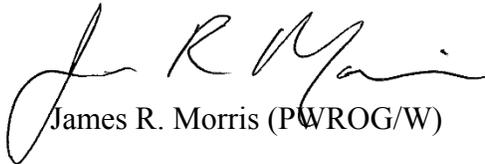
Since the approval of TSTF-493, Revision 4, differences of opinion have arisen on the intent of the model application and the model Safety Evaluation included in the Notice of Availability. TSTF-493 provides for two separate options. The first option (Option A) results in the placement of Notes in Technical Specification Tables for the agreed upon functions. The second option (Option B) adds a program to the Administrative Controls section of the Technical Specifications. The new program, titled the "Setpoint Control Program," references an NRC-approved methodology for determining and verifying instrument setpoints. In addition to addressing the NRC's concern, Option B allows the relocation of the instrument setpoint values from the Technical Specifications to licensee control.

A discussion of the issues and proposed resolutions related to Option A of TSTF-493 are discussed in Attachment A of this letter. Issues and an industry proposal to form the basis for further TSTF / NRC discussions related to Option B of TSTF-493 are discussed in Attachment B of this letter.

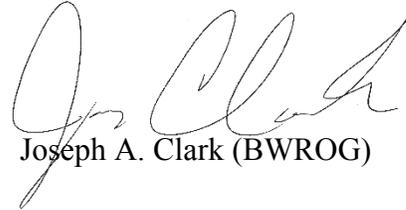
The TSTF proposes to work with the NRC to resolve these issues and recommends the NRC subsequently issue a revised Notice of Availability for TSTF-493, Revision 4, documenting the

agreements. We do not anticipate the need to revise TSTF-493, Revision 4. We recommend that the NRC and TSTF schedule a meeting to discuss this issue.

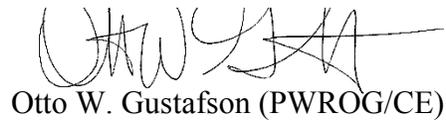
Should you have any questions, please do not hesitate to contact us.



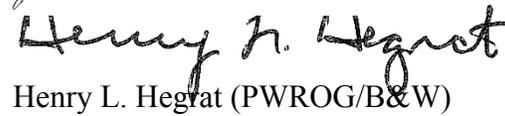
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Attachments

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Attachment A

Proposed Resolution of Issues Related to Option A of TSTF-493, Revision 4

Background

In the Improved Standard Technical Specifications (ISTS) (NRC NUREG-1430 through NUREG-1434), required instrumentation actuation limits are called "Allowable Values." In the case of some Westinghouse designed plants, the Technical Specifications also contain another set of limits called "Nominal Trip Setpoints." In TSTF-493, the generic term "setpoint" was used to describe the Allowable Value or Nominal Trip Setpoint limit in the Technical Specifications. For example (emphasis added):

- Option B of TSTF-493 created a "Setpoint Control Program," in the Administrative Controls section of the Technical Specifications (TS). Section 2 of the justification, first paragraph states, "In addition to addressing the NRC's concern, Option B allows the relocation of the *instrument setpoint values from the Technical Specifications to licensee control.*"
- In the No Significant Hazards Consideration, it states, "The proposed change also allows the relocation of the *plant-specific setpoints to licensee control* provided the Nuclear Regulatory Commission (NRC) has approved the methodology used to calculate the *setpoints* and that future changes to the *setpoints* are controlled under a Technical Specification Setpoint Control Program."
- Section 2 of the justification states, "In NUREG-1430, 1432, 1433, and 1434, the Notes are added to the Channel Calibration SRs, and to Channel Functional Test SRs *that verify trip setpoints*. In NUREG-1431, the Notes are added to the Channel Calibration, and Channel Operational Test (COT), SRs *that verify trip setpoints.*"

TSTF 493, Revision 4, was based on a letter from the TSTF to the NRC dated February 23, 2009 (ADAMS accession number ML090540849). The TSTF letter included several statements that make clear the intent of the proposed Traveler:

- The letter stated that the method for establishing as-left and as-found settings, which are under licensee control, would be subject to NRC inspection. Even if the licensee proposed a change to a TS Allowable Value or Nominal Trip Setpoint, the letter stated that the licensee is not required to provide the setpoint methodology for review; only a summary calculation would be required.
- Under "Adoption of TSTF-493 with No Changes to Setpoint Values," the letter stated "No changes to setpoint values are proposed. Since no setpoint values are being revised, the licensee is not required to provide the setpoint methodology for review or to provide any full or summary calculations."

The intent of the term "setpoint," as used in the TSTF letter, is the TS Allowable Value or Nominal Trip Setpoint, since changing a licensee-controlled value would not require prior NRC review and approval.

Attachment A

Proposed Resolution of Issues Related to Option A of TSTF-493, Revision 4

In the Option A model application (ADAMS ML100710442), which was written by the NRC, the agreements documented in the TSTF and NRC letters are implemented and the term "setpoint" is used to describe the information to be submitted to the NRC to support the requested amendment. For example:

- NOTE: This paragraph is applicable only for adoption of TSTF-493 Option A with changes to *setpoint* values.} ... Attachment 3 provides summary calculations for the revised *setpoints*.
- NOTE: This paragraph is applicable only for adoption of TSTF-493 Option A without changes to *setpoint* values.} [In this case, there was no attachment for providing summary calculations.]

From the context, it is apparent that the term "setpoint" used in the model application refers to a TS Allowable Value or Nominal Trip Setpoint, which can only be changed with NRC approval.

Problem Statement

In retrospect, the use of the term "setpoint" in the TSTF letter and the NRC's model application as a generic term for "Allowable Value or Nominal Trip Setpoint" was poorly chosen. In common usage, the "setpoint" or "trip setpoint" is the value calculated by the licensee to ensure an instrument actuates prior to reaching the TS Allowable Value or Nominal Trip Setpoint. Therefore, even if a license amendment request does not propose a change to a TS Allowable Value or Nominal Trip Setpoint, the licensee may, without prior NRC review and approval, revise a setpoint. In addition, the TS footnotes added under Option A may result in a licensee revising a licensee-controlled setpoint, but not an Allowable Value or Nominal Trip Setpoint.

When a licensee submits a license amendment request to adopt TSTF-493 and one or more TS values (Allowable Value or Nominal Trip Setpoint) are changed, the model application provides the appropriate guidance to licensees regarding the information to be submitted.

When a licensee submits a license amendment request to adopt TSTF-493 and no TS values (Allowable Value or Nominal Trip Setpoint) are changed, the model application is unclear. The industry intent is that no methodology or calculation information is to be submitted, but the the method for establishing the licensee-controlled settings would be subject to NRC inspection. Recently, the NRC staff has interpreted the model application as requiring submittal of details of the methodology or the calculation of licensee-controlled setpoint values.

One of the footnotes added under Option A states, "The Limiting Trip Setpoint and the methodologies used to determine the as-found and the as-left tolerances are specified in [insert the name of a document controlled under 10 CFR 50.59 such as the Technical Requirements Manual or any document incorporated into the facility FSAR]." The intent of the footnote is to refer to a methodology used to calculate as-left and as-found values in order to ensure a degraded instrument would be detected. The wording was specific and was not intended to refer to the entire setpoint methodology. This footnote has been interpreted by the NRC as bringing into the NRC's review scope the licensee's referenced setpoint methodology, which is used to calculate

Attachment A

Proposed Resolution of Issues Related to Option A of TSTF-493, Revision 4

licensee-controlled setpoints. However, as stated in the February 23, 2009 letter, the intent is that the as-left and as-found methodology would be the subject of inspection, but would not be required to be submitted for NRC review as part of a license amendment to adopt TSTF-493, Option A.

Recommended Action

To clarify the intent of the TSTF-493, Option A, model application, the TSTF recommends the following changes be made to the model application referenced in the Federal Register Notice of Availability (removed text is struck out, added text is in italics).

Cover Letter

{NOTE: This paragraph is applicable only for adoption of TSTF-493 Option A with changes to *the TS Allowable Values or Nominal Trip Setpoints* ~~setpoint values~~.} Attachment 1 provides a description and assessment of the proposed changes including the requested confirmation of applicability and plant-specific verifications; technical analyses; regulatory analyses; and environmental considerations. Attachment 2 provides the plant-specific list of instrument Functions to be annotated with the TSTF-493 Surveillance Notes. Attachment 3 provides summary calculations for the revised *Allowable Values [or Nominal Trip Setpoints]* ~~setpoints~~. Attachment 4 provides markup pages of existing TS and TS Bases to show the proposed change in accordance with TSTF-493, Revision 4, Option A. Attachment 5 provides revised (clean) TS pages.

{NOTE: This paragraph is applicable only for adoption of TSTF-493 Option A without changes to *TS Allowable Values or Nominal Trip Setpoints* ~~setpoint values~~.} Attachment 1 provides a description and analysis of the proposed changes including the requested confirmation of applicability and plant-specific verifications; technical analyses; regulatory analyses; and environmental considerations. No changes to any *TS Allowable Values [or Nominal Trip Setpoints]* ~~setpoint values~~ are proposed. Attachment 2 provides the plant-specific evaluation identifying the list of instrument Functions to be annotated with the TSTF-493 Surveillance Notes. Attachment 3 provides markup pages of existing TS and TS Bases to show the proposed change in accordance with TSTF-493, Revision 4, Option A. Attachment 4 provides revised (clean) TS pages.

Attachment 1, Section 2.0

{NOTE: This paragraph is applicable only for adoption of TSTF-493 Option A with changes to *TS Allowable Values or Nominal Trip Setpoints* ~~setpoint values~~.} [LICENSEE] proposes to add TSTF-493, Revision 4, Option A TS surveillance Notes with changes to *Allowable Values [or Nominal Trip Setpoints]* ~~setpoint values~~ to [PLANT] instrumentation Functions.

{NOTE: This paragraph is applicable only for adoption of TSTF-493 Option A with no changes to *TS Allowable Values or Nominal Trip Setpoints* ~~setpoint values~~.} [LICENSEE] proposes to add TSTF-493, Revision 4, Option A TS surveillance Notes

Attachment A

Proposed Resolution of Issues Related to Option A of TSTF-493, Revision 4

with no changes to *Allowable Values [or Nominal Trip Setpoints]* ~~setpoint values~~ to [PLANT] instrumentation Functions.

Attachment 1, Section 5.1

{For ~~setpoint~~ changes to *TS Allowable Values or Nominal Trip Setpoints*: The change involves a physical alteration of the plant, i.e., a change in instrument setpoint.} {No ~~setpoint~~ changes to *TS Allowable Values or Nominal Trip Setpoints*: The change does not involve a physical alteration of the plant, i.e., no new or different type of equipment will be installed.}

Attachment 3

SUMMARY CALCULATIONS FOR THE REVISED [*TS ALLOWABLE VALUES OR NOMINAL TRIP SETPOINTS*] ~~SETPOINTS~~

Attachment 3 describes the calculation basis for the LTSP, NTSP, AV, AFT band, and ALT band for changed *Allowable Values [or Nominal Trip Setpoints]* ~~instrumentation function setpoints~~. Summary calculations are provided for the revised *Allowable Values [or Nominal Trip Setpoints]* ~~setpoints~~. {NOTE: If multiple similar *Allowable Values [or Nominal Trip Setpoints]* ~~setpoints~~ are proposed to be revised, the licensee may provide a summary calculation for each type of *value setpoint* being revised provided that the amendment request contains a reasoned quantitative or qualitative analysis, as appropriate, of how the summary calculation(s) represent the type of ~~setpoint~~ values proposed to be changed.}

To clarify the intent of the TSTF-493, Option A, the TSTF recommends the following changes be made to the model Safety Evaluation referenced in the Federal Register Notice of Availability (removed text is struck out, added text is in italics).

Section 3.2

{REVIEWER'S NOTE: Section 3.2.1 is applicable only for adoption of TSTF-493 Option A with changes to *TS Allowable Values [or Nominal Trip Setpoints]* ~~setpoint values~~}

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

Background

In the NRC's July 25, 2007, Request for Additional Information (RAI) on TSTF-493, the NRC requested that TSTF-493 contain a second option (Option B) which would relocate the trip setpoints to a licensee-controlled program. The NRC suggested that the format and content of Option B should be modeled after the Section 3.3 "Instrumentation," TS in the Economic Simplified Boiling Water Reactor (ESBWR) Design Control Document, Tier 2, Chapter 16, Technical Specifications and Bases dated 12/15/2006. A Setpoint Control Program (SCP) is added to the programmatic requirements in Section 5.0, "Administrative Controls." The SCP contains the TSTF-493 Option A footnotes, a reference to the NRC staff Safety Evaluation for the approved licensee setpoint methodology, and identifies the licensee-controlled document that contains the relocated values and the calculated limiting trip setpoints. After adoption of the Setpoint Control Program, the licensee can revise these values using the approved methodology without NRC review or approval. In a January 18, 2008 letter from the TSTF to the NRC, the TSTF acknowledged that Option B had many merits, but declined to pursue this second Option as it would add to the complexity of an already extended NRC review of TSTF-493.

In a letter from the NRC to the TSTF dated March 9, 2009 (ADAMS accession number ML090560592), the TSTF agreed to include the Option B, "Setpoint Control Program." option in TSTF-493, Revision 4. However, TSTF stated that the TSTF would propose an SCP which may be different from that proposed for the ESBWR. Should a licensee pursue Option B, the licensee may relocate the TS Section 3.3, "Instrumentation," Limiting Trip Setpoints, Nominal Trip Setpoints, and/or Allowable Values from the Technical Specifications to a licensee-controlled program. The requirements for the SCP will be described in Chapter 5, "Administrative Controls." The licensee will either provide regulatory approval citations for their setpoint methodologies or, as applicable, will submit their setpoint methodology or methodologies used to calculate the relocated parameters for NRC review and approval.

The approach proposed in the TSTF letter was accepted in a letter from the NRC to the TSTF dated March 9, 2009 (ADAMS accession number ML090560592). The NRC letter stated, "The NRC staff finds that the letter meets the agreed course of action as discussed at the January 8, 2009 public meeting between the NRC and the industry for resolving the TSTF-493 setpoint issue."

TSTF-493, Revision 4, includes a TS Administrative Controls Setpoint Control Program which references the NRC-approved methodology:

- b. The program shall require the Limiting Trip Setpoint (LTSP), Nominal Trip Setpoint (NTSP), Allowable Value (AV), As-Found Tolerance (AFT), and As-Left Tolerance (ALT) (as applicable) of the Functions described in Paragraph a. are calculated using the NRC approved setpoint methodology, as listed below. In addition, the program shall list the value of the LTSP, NTSP, AV, AFT, and ALT (as applicable) for each Function described in paragraph a. and shall identify the setpoint methodology used to calculate these values.

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

----- Reviewer's Note -----
List the NRC safety evaluation report by letter, date, and ADAMS accession number (if available) that approved the setpoint methodologies.

1. [Insert reference to NRC safety evaluation that approved the setpoint methodology.]

The Notice of Availability for TSTF-493, Revision 4, was published in the Federal Register on May 11, 2010, and references the model application and model Safety Evaluation written by the NRC for Option B (ADAMS accession number ML100710443). These documents provide guidance on how a licensee should describe their setpoint methodology.

The NRC model application for Option B states:

4.4 Setpoint Methodology

{NOTE: For Option B applications that submit a setpoint methodology for NRC staff approval, Attachments 4 and 5 of the application can be submitted using brackets in place of the SCP Paragraph b requirement to specify the reference for the NRC safety evaluation that approved the setpoint methodology. The NRC staff will provide the approved methodology safety evaluation reference, which will include the date and ADAMS accession number, to be inserted into SCP Paragraph b before the amendment is issued.}

The [PLANT or LICENSEE] [proposed] setpoint methodology in Attachment 3 includes the content and application requirements of the TSs SCP Paragraphs b and c. The program includes the calculation basis for the LTSP, NTSP, AV, AFT band, and ALT band for each automatic protection instrumentation function.

The affected TSs SRs are: [insert plant specific SRs list].

The affected [PLANT] TS Tables are: [insert plant-specific list].

{NOTE: To support NRC assessment of the acceptability of the Attachment 3 [PLANT] Setpoint Calculation Methodology provide documentation (including sample calculations) of the methodology used for establishing the LTSP and the limiting acceptable values for the allowable value and the as-found and as-left tolerances as measured in periodic surveillance testing as described below. Indicate the related AL and other limiting design values (and the sources of these values) for each setpoint.}

Attachment 3, "[PLANT] Setpoint Methodology," states:

Attachment 3 provides the [PLANT] setpoint methodology(ies), for NRC staff review, that were used to establish instrument values of TSs 5.5.[18] Paragraph b for the Functions described in TSs 5.5.[18] Paragraph a.

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

{NOTE: To support NRC staff assessment of the acceptability of the Attachment 3, provide documentation (including sample calculations) of the methodology used for establishing the LTSP, NTSP, AV and the limiting acceptable values for the as-found and as-left tolerances as measured in periodic surveillance testing as described below. Indicate the related Analytical Limits and other limiting design values (and the sources of these values) for each setpoint.}

While TSTF-493, Revision 4 and the model application did not provide a detailed description of what constitutes an adequate level of description of a licensee's setpoint methodology, it was recognized that the NRC had reviewed and approved vendor and licensee setpoint methodologies in the past. These were thought to be adequate guides for licensees desiring to adopt Option B.

Kewaunee Option B Submittal

On August 24, 2009, Dominion Energy Kewaunee submitted a license amendment request to convert to TS consistent with the Standard Technical Specifications (NUREG-1431) (ADAMS accession number ML092440398). The submittal included adoption of TSTF-493, Option B. By letter dated October 22, 2009, (ADAMS Accession number ML093070092), Dominion submitted Kewaunee's setpoint methodology for NRC review. The NRC staff determined that the setpoint methodology for Kewaunee did not include sufficient information. In order to allow completion of the NRC review in a timely manner, Dominion modified the submittal to not allow setpoint changes under the Setpoint Control Program. The Kewaunee conversion amendment was approved on February 2, 2011 (ADAMS accession number ML103350500).

The Kewaunee experience demonstrated that the NRC and the industry did not have a common understanding of what was required for a successful NRC review of a licensee setpoint methodology sufficient to support adoption of TSTF-493, Option B.

Proposed Supplement to the TSTF-493 Notice of Availability

At the January 17, 2013 TSTF/NRC public meeting, the NRC provided to the TSTF for comment a draft supplement of the TSTF-493 Notice of Availability, titled "Notice of Availability Supplement to NRC-2009-0487, NRC Staff Guidance for License Amendment Requests to Implement a TSTF-493 Option B Setpoint Control Program." The purpose of the draft document was to propose guidance on the required content of an acceptable licensee amendment request to adopt TSTF-493, Option B. The document described the TSTF-493, Option B, submittal contents and the required level of detail of the setpoint calculation methodology and the setpoint control program.

TSTF Comments on the Proposed Supplement

The TSTF has reviewed the draft supplement and has developed a proposal to be used as the basis of further discussions with the NRC staff. We recommend that the supplement be limited to replacing the existing Attachment 3 published in the Option B model application. The published Attachment 3 states:

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

Attachment 3 provides the [PLANT] setpoint methodology(ies), for NRC staff review, that were used to establish instrument values of TSs 5.5.[18] Paragraph b for the Functions described in TSs 5.5.[18] Paragraph a.

{NOTE: To support NRC staff assessment of the acceptability of the Attachment 3, provide documentation (including sample calculations) of the methodology used for establishing the LTSP, NTSP, AV and the limiting acceptable values for the as-found and as-left tolerances as measured in periodic surveillance testing as described below. Indicate the related Analytical Limits and other limiting design values (and the sources of these values) for each setpoint.}

The supplement is revised to replace the Note above, in order to provide sufficient direction for a licensee to submit an adequate level of detail for the NRC staff to review the methodology.

The draft supplement refers in several locations to the licensee submitting procedures that describe or implement the setpoint methodology. The TSTF does not recommend that approach. Instead, the licensee should submit a description of the setpoint methodology in sufficient detail that the NRC staff can determine the methodology is acceptable. There are several advantages to this approach:

- Regardless of NRC review, procedures and calculations remain licensee-controlled documents. This places the burden on the NRC staff to document in their Safety Evaluation each important aspect of the licensee's setpoint methodology implemented in the calculations. The burden of describing the methodology should be on the licensee, not on the NRC staff.
- The NRC staff may choose to audit the licensee's setpoint methodology, any implementing programs and procedures, and resulting calculations to ensure compliance with the methodology description.
- A description of the licensee setpoint methodology, reviewed and approved by the NRC, allows the licensee to revise their calculations, setpoint methodology and any implementing procedures as needed, as long as these documents continue to implement the approved methodology description.
- This approach is consistent with NRC review and approval and licensee implementation of other methodologies, such as those described in Topical Reports or those subject of 10 CFR 50.90 review required by 10 CFR 50.59.

Using the draft supplement and other sources, the TSTF proposes a revision to Attachment 3 of the model application that clearly describes the information that must be included in the description of the licensee Setpoint Methodology.

The table below the proposed Attachment 3 provides the TSTF's comments on the NRC's proposed supplement. The NRC draft text is in the left column. The right column provides the TSTF's comments.

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

Industry Proposed Attachment 3 Revision

ATTACHMENT 3

[PLANT] SETPOINT METHODOLOGY

NOTE: Attachment 3 provides the [PLANT] setpoint methodology(ies), for NRC staff review, that will be used to establish instrument values for the functions listed in TS 5.5.[18], Paragraph b for the Functions described in TSs 5.5.[18] Paragraph a.

The licensee may provide the setpoint methodology as a separate document (such as a licensee or vendor Topical Report), referenced in Attachment 3.

The following provides guidance to licensees on the information to be provided describing the licensee's setpoint methodology. The licensee setpoint methodology itself, along with any implementing programs, procedures and calculations, may be audited and inspected by the NRC. Future changes to the licensee's setpoint methodology that are inconsistent with the licensee's description of their setpoint methodology described in Attachment 3 will require prior NRC review and approval. Changes to the licensee programs and procedures are controlled under 10 CFR 50.59.

Setpoint Methodology Description

- I. Establishing Allowable Values (AVs), Limiting Trip Setpoints (LTSPs) and Nominal Trip Setpoints (NTSPs). Licensees should describe their methodology for establishing adequate margins between limiting/nominal trip setpoints and Analytical Limits that is consistent with Regulatory Guide (RG) 1.105, "Setpoints for Safety-Related Instrumentation," or that justifies an alternative. The setpoint methodology description should discuss the following topics.
 - A. The methodology description should identify which uncertainty terms are considered to calculate a conservative LTSP or AV. Instrument uncertainties are to be considered in the overall uncertainty/setpoint analysis. ANSI/ISA 67.04.01, "Setpoints for Nuclear Safety Related Instrumentation" Section 4.4 identifies uncertainties that should be considered.
 - B. The methodology description should discuss how uncertainty terms are combined. The uncertainty terms discussed above can be combined using deterministic, statistical, or other combination method and should be combined using appropriate techniques. The result of the combination should be a value that represents the performance of the instrumentation channel within a targeted probability and confidence interval. The methodology should identify acceptable uncertainty determination methods and specify when each method is acceptable for use, given the collected data.
 - C. It is possible that instrument uncertainties change with time in service or varying plant process conditions. The methodology description should include the general conditions and precautions to ensure that the proper magnitudes of uncertainties are included in the calculation for any point in plant life and for any plant environmental conditions in which the channel may be required to function.

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

- D. The methodology description should identify the requirements to verify that appropriate modeling is used for the Analytical Limit. Unless otherwise justified, the calculation of an Analytical Limit should consider the dynamic effects for the channel and the process components, including response time.
 - E. The methodology description should generally explain how time based (drift) uncertainties consider surveillance intervals and the approaches taken for extrapolation of terms which are specified or analyzed for smaller surveillance intervals than used in practice for the application.
 - F. The methodology description should discuss limitations to the use of plant specific data, the data quality requirements and combinational methods to develop a statistically significant value. Plant specific performance operating history may be used to replace general vendor uncertainty specifications or calibration uncertainties or to confirm assumptions where previous information was not available.
 - G. The methodology description should provide a detailed glossary and associated definitions for the terms used or reference an industry standard glossary and definitions.
 - H. The methodology description should discuss the identification of uncertainties associated with the surveillance process. These should include recommendations of Measurement and Test Equipment (M&TE) accuracies as related to process instrument performance characteristics, as well as calculation alternatives if the recommended accuracies cannot be met. The description should discuss the approach taken to consider uncertainties for M&TE, which should include accuracy, readability, and the accuracy and readability of the calibration standard used to calibrate the M&TE. The M&TE uncertainties should consider the uncertainties for the M&TE used at the input and at the output of the calibrated device or instrument string.
 - I. The methodology description should identify the methods for calculating as-left and as-found tolerance limits used to confirm that the instruments are performing as expected. This description should meet the requirements of RIS 2006-17 or justify an acceptable alternative method.
 - J. The methodology description should discuss when replacement components or instruments should be evaluated for plant impact. The performance of replacement materials, parts, and components should be evaluated with respect to instrument uncertainties and the continued validity of the TS Allowable Values or Nominal Trip Setpoints, field setpoints, the test acceptance criteria, the uncertainty analysis, and all related requirements and conditions.
- II. It is recommended that the methodology description discuss how the licensee setpoint methodology is consistent with, or provides an acceptable alternative to, the Regulatory Positions in Regulatory Guide (RG) 1.105, "Setpoints for Safety-Related Instrumentation," Revision 3. It is recommended that this description be included as a section, or as a separate appendix, within the plant setpoint methodology description.
- III. Plants have procedural controls for design input and for the preparation and independent verification of plant calculations. The plant setpoint methodology describes more specific requirements to be used for design input and preparation and use of calculations for the derivation of instrument setpoints, including Allowable Values, Nominal Trip Setpoints, field setpoints, and tolerances. The methodology description should include a listing of the

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

more specific requirements implemented for setpoint calculations. The channel or function specific calculations are performed in accordance with the programs, procedures and plant setpoint methodology. The applicable programs, procedures and calculations implementing the setpoint methodology are subject to NRC inspection.

- IV. The methodology description should identify additional requirements when performing calculations. The methodology description should require the following information to be included within the calculations:
 - A. The calculation should include instrument loop diagrams (one typical for each function) showing all hardware elements of the instrument loop(s), indicating which portions of the loop are tested during each type of functional test, calibration test, or response-time test (if applicable and not considered in the establishment of the Analytical Limit) as reflected in the values used in the setpoint calculation.
 - B. The calculation should include sketches of, or refer to drawings with, instrument and tubing layouts and installation details that are relevant to the uncertainty and setpoint determination. As applicable, these should show locations and elevations of instruments and tubing relative to a reference datum, as well as the points where the instrumentation interfaces with the monitored process.
 - C. The calculation should identify the manufacturer, model number, and scaling parameters of each instrument, as it contributes to the uncertainty. This information should be maintained to address the currently installed configuration.
 - D. The calculation should list all documented instrument uncertainty specifications which apply to the specific instrument application, including range and environmental qualification. The listing should identify the sources of data, the statistical distribution, and the confidence level to be used for the uncertainty specifications and data. Where non-standard distributions or biases are identified, the calculation should provide a discussion of the appropriate error combination methods. Where an off-setting bias is applied, the calculation should provide a full justification of the methods.
 - E. The calculation should identify inputs and assumptions regarding the environmental allowances (temperature, pressure, humidity, radiation, vibration, seismic, EMI/RFI, and electrical power variations) associated with the location for each portion of the instrument channel.
 - F. The calculation should identify and consider surveillance testing methods, equipment used, and the frequency at which surveillances are performed.
- V. The Setpoint Control Program will collect information from, and provide information to be used by, various other plant programs. The methodology description should describe how the Setpoint Control Program interfaces with, and provides additional requirements for, other plant programs.
 - A. The methodology description should discuss the provisions for calibration and control of M&TE used for calibration of the instrumentation. It should describe the programmatic requirements to ensure that calculation inputs regarding M&TE remain valid.
 - B. The methodology description must specify the methods used to determine calibration as-left and as-found calibration tolerances. The methodology description should identify the programmatic requirements to ensure that calculation inputs regarding

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

calibration processes and tolerances remain valid, as well as the programmatic requirements to ensure that the computed tolerances are properly implemented in the surveillance procedures.

- C. Certain actions are required when instrumentation is determined to be outside of its as-left or as-found calibration tolerances. Programs addressing surveillance procedure control, corrective actions, and design or configuration control may require revision to ensure that the proper actions are taken for the various out-of-tolerance conditions. The methodology description should identify the programmatic requirements to ensure that the necessary actions are taken for the various out-of-tolerance conditions.
- D. The methodology description should include a brief description of any provisions and limitations regarding the use of operating history, where available, for the instrument channel setpoint determination. This description should include a general discussion of the way the operating history will be organized, analyzed, and processed to support engineering conclusions regarding instrument channel performance.

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

TSTF Comments on the Draft Notice of Availability Supplement

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| <p><u>Background</u></p> <p>In accordance with the U.S. Nuclear Regulatory Commission (NRC) staff's May 11, 2010 Notice of Availability of the TSTF-493 Instrument Setpoint Control Program guidance (75 FR 26294, available at www.regulations.gov, ID: NRC-2009-0487) licensees may elect to submit a license amendment request for NRC staff evaluation which contains a description of their proposed Setpoint Control Program that meets Option B of TSTF-493, Revision 4 "Clarify Application of Setpoint Methodology For LSSS Functions." Using TSTF-493 Option B, licensees may relocate the Allowable Values (AVs) and Nominal Trip Setpoints (NTSPs) of instrument channels implementing certain limiting safety system setting (LSSS) safety functions from Technical Specifications Section 3.3, "Instrumentation," to the Final Safety Analysis Report (FSAR) or another document (e.g. Technical Requirements Manual) incorporated into the facility FSAR by reference, and add an Administrative Control Technical Specification (TS) into Section 5 of the Technical Specifications, entitled "Setpoint Control Program."</p> | <p>The background information is not needed, as it is contained in the model application body.</p> |
| <p>The Setpoint Control Program establishes the technical specification requirements for ensuring that setpoints for automatic protective devices are initially within and remain within the assumptions of the applicable safety analyses. The program provides a means for processing changes to instrumentation setpoints, and identifies setpoint methodologies to ensure instrumentation will function as required. The program ensures that testing of automatic protective devices related to variables having significant safety functions as delineated by 10 CFR 50.36(c)(1)(ii)(A) verifies that instrumentation will function as required. Specifically, the Setpoint Control Program establishes the following programmatic requirements:</p> | <p>The background information is not needed, as it is contained in the model application body.</p> |

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <p>a. The program lists the Functions in the following specifications to which it applies (Note: The following is a typical list of functions for a BWR-6 reactor design, as identified in a letter from the TSTF Owners Group to the NRC dated April 23, 2010, (ML101160026) containing a marked version of the BWR-6 Standardized Technical Specifications. Other marked Standardized Technical Specifications in that letter have different affected Functions, as appropriate):</p> <ol style="list-style-type: none">1. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation;"2. LCO 3.3.1.2, "Source Range Monitor (SRM) Instrumentation;"3. LCO 3.3.2.1, "Control Rod Block Instrumentation;"4. LCO 3.3.2.2, "Feedwater and Main Turbine High Water Level Trip Instrumentation;"5. LCO 3.3.4.1, "End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation;"6. LCO 3.3.4.2, " Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation;"7. LCO 3.3.5.1, "Emergency Core Cooling System (ECCS) Instrumentation;"8. LCO 3.3.5.2, "Reactor Core Isolation Cooling (RCIC) System Instrumentation;"9. LCO 3.3.6.1, "Primary Containment Isolation Instrumentation;"10. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation;"11. LCO 3.3.6.3, "Low-Low Set (LLS) Instrumentation;"12. LCO 3.3.7.1, "[Main Control Room Environmental Control (MCREC)] System Instrumentation;"13. LCO 3.3.8.1, "Loss of Power (LOP) Instrumentation;"14. LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring." <p>b. The program lists the setpoint methodology and requires the Limiting Trip Setpoint (LTSP), Nominal Trip Setpoint (NTSP), Allowable Value (AV), As-Found Tolerance (AFT), and As-Left Tolerance (ALT) (as applicable) of the Functions described in Paragraph a. are calculated using the Setpoint methodology submitted by the licensee and approved by the NRC. In addition, the program contains the value of the LTSP, NTSP, AV, AFT, and ALT (as applicable) for each Function described in paragraph a. and identifies the setpoint methodology used to calculate these values.</p> <p>c. The program establishes methods to ensure that Functions described in Paragraph a. will function as required by verifying the as-left and as-found settings are consistent with those established by the setpoint methodology.</p> | <p>This information is repetitive of the licensee's proposed TS in their TSTF-493 submittal.</p> |
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Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <p>d. The program identifies the Functions described in Paragraph a. that are automatic protective devices related to variables having significant safety functions as delineated by 10 CFR 50.36(c)(1)(ii)(A). The LTSP of these Functions are Limiting Safety System Settings. These Functions are to be demonstrated to be functioning as required by applying the following requirements during CHANNEL CALIBRATIONS, trip unit calibrations and CHANNEL FUNCTIONAL TESTS that verify the [LTSP or NTSP].</p> <ol style="list-style-type: none">1. The as-found value of the instrument channel trip setting is compared with the previous as-left value or the specified [LTSP or NTSP].2. If the as-found value of the instrument channel trip setting differs from the previous as-left value or the specified [LTSP or NTSP] by more than the pre-defined test acceptance criteria band (i.e., the specified AFT), then the instrument channel is evaluated before declaring the SR met and returning the instrument channel to service. This condition is entered in the plant corrective action program.3. If the as-found value of the instrument channel trip setting is less conservative than the specified AV, then the SR is not met and the instrument channel is immediately declared inoperable.4. The instrument channel setpoint is reset to a value that is within the as-left tolerance around the [LTSP or NTSP] at the completion of the surveillance test; otherwise, the channel is inoperable (setpoints may be more conservative than the [LTSP or NTSP] provided that the as-found and as-left tolerances apply to the actual setpoint used to confirm channel performance).e. Changes to the program are to be made in accordance with the requirements of 10 CFR 50.59. Revisions or supplements to the program are provided upon issuance to the NRC. | <p>This information is repetitive of the licensee's proposed TS in their TSTF-493 submittal.</p> |
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Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <p>The licensee proposed Setpoint Control Program must meet the requirements of 10 CFR 50.36, "Technical Specifications," and address the NRC staff Regulatory Positions described within the guidance of Regulatory Guide 1.105, "Setpoints for Safety-Related Instrumentation," the clarification of this guidance described within Regulatory Issue Summary RIS 2006-17, "NRC Staff Position on the Requirements of 10 CFR 50.36, 'Technical Specifications,' Regarding Limiting Safety System Settings During Periodic Testing and Calibration of Instrument Channels," and the guidance described below within this TSTF-493 Notice of Availability Supplement. The NRC staff will evaluate proposed Option B programs using its Standard Review Plan, branch technical positions, regulatory guidance, and other staff review guidance consistent with the licensing basis of the facility to make a determination of reasonable assurance that the licensee proposed setpoint control program, as documented in the license amendment request, ensures adequate protection of the health and safety of workers and the public, and adequately protects the environment.</p> <p>Once a proposed Setpoint Control Program is approved for use by the NRC staff, licensees would be permitted to relocate the AVs and Nominal Trip Setpoints (NTSPs) or Limiting Trip Setpoints (LTSPs) of instrument channels performing certain LSSS safety functions from the Technical Specification Section 3.0 tables to the FSAR or Technical Requirements Manual (TRM) and to make subsequent changes to the nominal technical specification setpoint (NTSP) and allowable value (AV) settings in accordance with the requirements of 10 CFR 50.59. The specific scope of instrument channel settings for this program is contained in Attachment 2 of the "Model Application for Adoption of TSTF Traveler TSTF-493, Revision 4, "Clarify Application of Setpoint Methodology for LSSS Functions, Option B, Addition of a Setpoint Control Program," which reflects the scope of safety functions agreed upon in correspondence between the Technical Specifications Task Force Owners Groups and the NRC staff, dated April 23, 2010. This letter listed the specific safety functions within certain Technical Specification Section 3.0 tables deemed to be significant safety functions initiated by safety related instrument channels, including some Limiting Safety System Settings as described in 10 CFR 50.36(c)(1)(ii)(a) as well as other safety related instrument channel functions which initiate plant safety actions in response to design basis events. Provided that all elements of the NRC staff's positions regarding the establishment and maintenance of safety related instrument channel settings as described in the NRC regulations and guidance, and as further elaborated herein, are adequately described in the licensee's 10 CFR 50.90 submittal and supporting documentation describing its proposed setpoint control program, the NRC staff would find such setpoint control programs to be adequate to ensure that proposed changes to safety related instrument channel settings will continue to meet the NRC regulations and NRC staff's guidance and thus provide reasonable assurance that the licensee's program will continue to protect the health and safety of the public, and the environment.</p> | <p>The background information is not needed, as it is contained in the model application body. The NRC's approval of TSTF-493 has established that the requirements necessary to comply with 50.36 are in the TS program. The remaining information is included the descriptions, below.</p> <p>This paragraph restates the information in the model application body.</p> |
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Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <p>The setpoint control program requires licensees to make available for subsequent NRC staff inspection all documentation associated with establishing, maintaining, and/or modifying these settings under the 10 CFR 50.59 process using the NRC staff-approved setpoint control program. Such documentation includes the bases for these changes, such as information depicting the sources of raw data and the analyses of the data used for establishing conclusions reached in completing revisions to setpoint calculation documents, and bases for any technical (i.e., non-editorial) changes made within any of the plant or corporate engineering and maintenance procedures directly used and documented within the approved setpoint control program. NRC staff inspection may be performed via evaluation of annual FSAR updates or as a part of scheduled system-based inspections or other topical inspections.</p> | <p>The SCP does not require this and no regulation specifies this level of detail. The text is revised to be consistent with the Traveler and the regulations. The treatment of this type of information in the setpoint calculation is discussed below and will have the same effect as the deleted text.</p> |
| <p>Subsequent changes proposed under a 10 CFR 50.59 process to the established safety related settings which do not strictly adhere to the requirements of 10 CFR 50.59 or to the elements within the NRC staff-approved TSTF-493, Revision 4 Option B Setpoint Control Program as elaborated herein would not be permitted. Such proposed changes would need to be submitted for NRC staff evaluation under 10 CFR 50.90. Similarly, the requirements of 10 CFR 50.59(d) pertaining to the maintenance of records and periodic reporting of a summary of any safety related setpoint changes made under the NRC-approved setpoint control program will apply.</p> <p>Substantive proposed changes (other than minor editorial comments) to the licensee's proposed Setpoint Methodology and the TSTF-493 Option B Setpoint control program described herein must be submitted to the NRC staff under the 10 CFR 50.90 process for approval prior to implementation of the changes.</p> | <p>This restates the regulations and the requirements of the Setpoint Control Program and is unneeded.</p> |

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

The primary purpose for requiring the licensee to include all the information described herein within its submittal is to provide NRC staff reviewers with sufficient information to allow them to evaluate how the licensee proposed program will meet the NRC regulations and staff guidance, particularly with respect to the scope of instrument functions associated with TSTF-493. A secondary reason is to provide a baseline reference for future NRC inspection personnel to help inform future inspection processes. Since the requirements of 10 CFR 50.59(d) pertaining to the maintenance of records, and periodic reporting of a summary of changes made will apply to changes made under the setpoint control program, this level of detail will help the NRC inspectors ensure that licensees are appropriately performing changes to these settings, once they are made under the 10 CFR 50.59 evaluation process.

The NRC has already established that the TSTF-493 TS SCP meets the regulations. Meeting staff guidance is not a requirement. The scope of instrument functions is given in the model application. The need for "baseline" information to support inspections is inconsistent with NRC treatment of all other design change processes and is unnecessary.

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

TSTF-493 Option B Submittal Contents

For the NRC staff to perform its evaluation of a licensee-proposed TSTF-493 Option B setpoint control program, the staff requires the following two descriptions to be part of Attachment 3 of the licensee's submittal addressing "Model Application for Adoption of TSTF Traveler TSTF-493, Revision 4, "Clarify Application of Setpoint Methodology for LSSS Functions, Option B, Addition of a Setpoint Control Program":

1. Sufficiently Detailed Setpoint Calculation Methodology Description: Licensees must submit their proposed setpoint calculation methodology to the NRC staff for approval. The licensee must demonstrate to the NRC staff how the methodology for determining the initial settings and magnitude of any changes to setpoints proposed under a 10 CFR 50.59 process affecting the specific list of instrument channel functions (as agreed upon in the NRC letter of March 9, 2009 approving the list of functions identified in the TSTF Owners Group February 23, 2009 letter) meets the NRC regulations and staff guidance for determining AV, LTSP, NTSP, ALT, and AFT, as set forth in the NRC staff's Notice of Availability letter of May 4, 2010, its regulations and regulatory guidance documents, and as described in further detail below. (Note: For some plants the Limiting Safety System Setting term is described as a "Field Trip Setpoint" and the term NTSP is not used. For such plants, the use of allowances for AFT and ALT are applied to this term instead of a NTSP term.) The proposed setpoint calculation methodology must clarify how the licensee applies the use of such terms for its licensed facility to ensure consistency and to facilitate future inspection by the NRC staff.

2. Sufficiently Detailed Setpoint Control Program Description: The license amendment request to adopt TSTF-493, Revision 4 Option B must include documentation that fully describes the Section 5.0 Technical Specification Administrative Controls Setpoint Control Program. The submittal must demonstrate to the NRC staff how the licensee will ensure that future changes to these settings will continue to adhere to the elements of the NRC staff-approved setpoint control program. The Setpoint control program must also ensure that subsequent changes to instrument settings will be controlled under 10 CFR 50.59. More detailed guidance on the content of the setpoint control program is provided below.

In accordance with the Administrative Controls TS, Section 5.0 substantive proposed changes (other than minor editorial comments) to the Setpoint control program described herein must be submitted to the NRC staff for review under 10 CFR 50.90 for approval prior to implementation of the changes.

This text is superseded by the proposed change to have this document replace Attachment 3.

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <p>Detailed Guidance for the Content of License Amendment Request Submittals for TSTF-493 Option B Setpoint Control Programs</p> | <p>To be considered for NRC review, the licensee's 10CFR50.90 submittal proposing a TSTF-493 Option B Setpoint Control Program must contain detailed descriptions of two processes:</p> <ol style="list-style-type: none">1. Detailed Setpoint Methodology Description, and2. Detailed Setpoint Control Program Description. <p>These process descriptions are discussed below.</p> |
| | <p>This text is superseded by the proposed change to have this document replace Attachment 3.</p> |

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <p>1. <u>Detailed Setpoint Methodology Description</u></p> <p>a. <u>Establishing LTSPs and NTSPs</u> Similar to the requirements for TSTF-493 Option A for licensees proposing changes to the existing technical specification values, for any instrument channels within the scope of the proposed TSTF 493, Revision 4 Option B Setpoint Control Program, licensees must describe their proposed methodology for establishing adequate margins between limiting/nominal trip setpoints and analytical limits that are reflective of NRC staff guidance provided in Regulatory Guide (RG) 1.105, "Setpoints for Safety-Related Instrumentation." <u>Random error terms:</u> Specifically, the methodology must describe how the licensee will ensure that individual error term estimates for random instrument channel uncertainty and future changes to settings, will be based on the use of appropriate statistical analyses. The licensee must demonstrate that the bounds of each error term estimate are established at a 95% probability/95% confidence level, the mean of the uncertainty for the entire population lies within the bounds of the error estimate for the sample taken, and that an appropriate sample size was used to establish this error estimate. <u>Bias error terms:</u> Additionally, the methodology must describe how the magnitude of the uncertainty terms representing non-conservative bias associated with instrument channel performance are identified and quantified using appropriate analyses or bounding estimates, with suitable justification for establishing the bounds of bias estimates that have been based on only a limited sample size. If the bias has been identified as "conservative" bias, the methodology must identify whether the magnitude of the bias has been used to offset any "non-conservative biases" identified or whether its effect will be ignored. The methodology must provide justification for the approach used. <u>Categorization basis:</u> The licensee must describe how instrument channel performance is modeled, which uncertainty terms are considered random independent, random dependent, uni-directional bias, or bi-directional bias terms, and the basis for categorizing terms in this manner. <u>Methodology consistent with actual plant calibration and functional testing practices:</u> The methodology must describe how the instrument channel performance modeling supporting the analysis of instrument channel uncertainty and historical surveillance performance. The submittal description must also demonstrate how the proposed methodology addresses each NRC Staff Position in applicable regulatory guidance.</p> | <p>Reference to Option A is unnecessary and distracting.</p> <p>Regulatory Guides are not requirements. Licensees may always propose alternatives.</p> <p>Use of 95/95 may be possible for certain uncertainty terms for modern instrumentation; it is not possible for older instrumentation currently installed in the operating plants and is specifically not possible when considering harsh environmentally qualified devices. Harsh environmentally qualified devices are generally tested in small batches and do not provide sufficient data to calculate a 95% confidence level. This concern is addressed in the proposed revised Attachment 3.</p> |
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Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| | <p>b. <u>Establishing AVs, ALTs, and AFTs:</u> Licensees must describe their proposed methodology and bases for establishing conservatively small, but practically-applied acceptance tolerance bands for "as-found" tolerances (AFTs), specifying the allowed channel performance deviation between successive surveillances. The licensee must also describe their methodology for "as-left" tolerances (ALTs), supporting the determination of calibration setting acceptance criteria that are used to assure a tight control on allowed setpoint deviations. These discussions must document the licensee's basis for establishing a permissible (allowable) channel deviation between successive surveillances. This information is used to enable the performance of an assessment of channel operability. Licensees must provide the bases for calculating/establishing AFTs and ALTs, taking into account the guidance of "NRC Regulatory Issue Summary 2006-17 NRC Staff Position on the Requirements of 10 CFR 50.36, Technical Specifications, Regarding Limiting Safety System Settings During Periodic Testing and Calibration of Instrument Channels" (RIS 2006-17). If the guidance of RIS 2006-17 is not followed explicitly, licensees shall provide a technically sound justification for an alternative approach that takes into account the concepts of RIS 2006-17.</p> |
| | <p>Changed for consistency. Sometimes the document states "proposed methodology" and it states "methodology". Used "methodology" as it 1) may be the current, in-use methodology and 2) proposed is implied by requesting NRC review.</p> |

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <p>To document the licensee's TSTF-493 Option B setpoint methodology program, the licensee may provide the NRC staff with copies of pertinent corporate and/or plant engineering procedures that describe in detail the instrument setpoint calculation methodology. To evaluate this material and make its "reasonable assurance of adequate protection" determination, the NRC staff must understand exactly how and under what conditions these procedures are to be used. Therefore, procedures which describe the licensee's overall setpoint control program shall be included in the LAR.</p> <p>The Setpoint Control Program must state the specific scope of instrument channels to which these procedures apply, and clearly describe how the use of these procedures relates to the requirements of 10 CFR 50.36 and regulatory guidance criteria. Otherwise, the NRC staff's "reasonable assurance" determination will need to be based on what it determines to be the least restrictive licensee program requirements implied in the documents as written.</p> | <p>See the discussion of implementation. Based on licensee approach, there may not be additional procedures to specifically implement the setpoint methodology, separate from the existing design control procedures, calculation procedures and the setpoint methodology itself.</p> <p>The scope of instrument channels is listed in the TS SCP. The TS SCP has been determined to meet 50.36.</p> |
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Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <p>The documentation provided to the NRC staff for its evaluation must contain the following elements:</p> <ol style="list-style-type: none"> a. a description of the basis and fully-executed (licensee-approved) setpoint methodology, corporate and plant procedures which implement this methodology, referenced NRC-approved NSSS vendor topical reports (if applicable) which may be applicable to the licensee's facility and/or corporate calculation methodology procedure, and analytical results; b. a description of the sources of controlled engineering information allowed by such procedures for use in establishing the setpoints and as-left and as-found tolerances for the instrument channels; c. copies of applicable supporting analyses; and | <p>Item a is unclear. The entire attachment is describing the setpoint methodology. The methodology description is submitted under 50.9, which requires accuracy in all material respects. The request for "licensee approved" is unnecessary. The paragraph is revised to include unique information not in other parts of this description.</p> <p>Licensee procedures are available for inspection.</p> <p>NRC-approved NSSS vendor topical reports are available to the NRC staff without the licensee submitting the report (with associated proprietary treatment).</p> <p>It is unclear what "analytical results" are part of the methodology.</p> <p>The NRC is reviewing the methodology description, not the implementing procedures.</p> <p>It is unclear what "supporting analyses" are part of the methodology.</p> |
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Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <p>d. a description of any provisions within the program for use of operating history, where available, for the instrument channel setpoint determination program and the instrument maintenance and calibration program. This description must include a discussion of the way the operating history will be organized, analyzed, and processed to support engineering conclusions regarding instrument channel performance.</p> | <p>Minor clarifications made in the Attachment 3 revision.</p> |
| <p>For the specific scope of instrument channels <i>included in the Setpoint Control Program</i> covered under the TSTF-493 program, the following information on the licensee /applicant's setpoint program must be included in the submittal for the staff's evaluation:</p> | <p>This introduction is not required, as described below.</p> |
| <ul style="list-style-type: none"> • Identification of facility instrument channels and associated setpoints performing safety functions considered to be limiting safety system settings relevant to compliance with technical specification limiting conditions for operation. This list of in-scope instrument channels must be in compliance with the list agreed upon by the Tech Spec Task Force and the NRC staff in correspondence prepared in conjunction with the establishment of TSTF-493, Revision 4 (ML101160026). | <p>This is in the model application and the TS markups.</p> |
| <ul style="list-style-type: none"> • Identification of any within-scope safety functions that are not safety-limit-related LSSS and the basis for this determination. | <p>This is in the model application and the TS markups.</p> |
| <ul style="list-style-type: none"> • Identification of setpoints that trigger procedural actions important to safety. | <p>This is unnecessary. The applicable instrument functions are identified in the TS.</p> |
| <ul style="list-style-type: none"> • Description of the setpoint methodology and procedures used in determining setpoints, including information sources, scope, assumptions, interface reviews, and statistical methods. | <p>This is stated in the preceding section.</p> |
| <ul style="list-style-type: none"> • Definitions of the licensee's terminology used to describe limits, allowances, and tolerances, and environmental or other effects used to support setpoint calculations. | <p>This is required in the model application.</p> |

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <ul style="list-style-type: none"> • Technical specifications and basis for all LSSs. Surveillance Requirements for the channels whose NTSPs and AVs are being moved to the FSAR or TRM must still be depicted within the Technical Specification tables. | <p>This is in the TS and Bases markups.</p> |
| <ul style="list-style-type: none"> • Bases for acceptable as-found band, acceptable as-left band and determination of instrument operability based on acceptable as-found band and acceptable as-left band. | <p>This is stated in the preceding section.</p> |
| <ul style="list-style-type: none"> • Bases for establishment of the surveillance and calibration intervals assumed in the calculations of setpoints. Information describing the establishment of surveillance and calibration intervals must be compatible with any NRC-approved surveillance interval programs for the facility (e.g., other TSTF initiatives.) | <p>Calibration intervals are not changed based on the Setpoint Control program. Current surveillance intervals are already documented and justified, no additional information need be provided.</p> |
| <ul style="list-style-type: none"> • Bases for assumptions regarding instrument uncertainties and a discussion of the method used to determine uncertainty values. | <p>This is stated in the preceding section.</p> |
| <ul style="list-style-type: none"> • Description of the provisions for calibration and control of measuring and test equipment used for calibration of the instrument. | <p>M&TE control programs and process to require traceability to NIST standards already exist and are required by 10 CFR 50, Appendix B. No additional information need be provided, except the programmatic interface and the calculation considerations for M&TE, included in the Attachment 3 revision.</p> |

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <ul style="list-style-type: none"> Description of the program and methodology used to monitor and manage instrument uncertainties, including the basis for drift uncertainties. | <p>This is stated in the preceding section.</p> |
| <p>A documented design basis for safety system setpoints must be available for Staff review. Documentation must conform to the guidance of Regulatory Guide 1.105, latest revision.</p> | <p>Licenses may always propose an alternative to a RG. A licensee program would never state "latest revision," but would be tied to a specific revision.</p> |
| <p>The description of the instrument channel in accordance with ISA-S67.04-1994, Part I, must include, as a minimum:</p> <ul style="list-style-type: none"> Description of the functional and performance criteria for the initiation and execution of the safety functions for each setpoint value. | |
| <ul style="list-style-type: none"> Instrument specifications, including range, accuracy, repeatability, hysteresis, dynamic response, environmental qualification, calibration reference, and calibration intervals for each instrument type. | <p>Note that repeatability and hysteresis are generally included in reference accuracy.</p> |
| <ul style="list-style-type: none"> Instrument loop diagrams (one typical for each function) showing all hardware elements of the instrument loop(s), indicating which portions of the loop are tested during each type of functional test, calibration test, or response-time test (if applicable) as reflected in the values used in the setpoint calculation. All elements of the loop must be tested within their appropriate required calibration intervals. | <p>The last sentence is inconsistent with the rest of the section. It is not a documentation requirement.</p> |
| <ul style="list-style-type: none"> Instrument and tubing layout drawings and installation details showing locations and elevations of instruments and tubing relative to a reference datum, as well as the points where each instrument interfaces with the monitored process. | <p>Reference to drawings or other documentation is generally acceptable for this information, as opposed to re-creating the drawings within the calculation. Should be limited to the details relevant to the uncertainties.</p> |

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <ul style="list-style-type: none"> • For digital instrumentation, the configuration database for the instrumentation functions, and identification of digital elements (hardware and software) where error could be introduced into the measurement, such as, errors that could result from analog-to-digital or digital-to-analog conversion or from numerical methods used in the software (e.g., curve fitting). • The description of assumptions in accordance with ISA-S67.04-1994, Part I, must include-Assumptions regarding the environmental allowances (temperature, pressure, humidity, radiation, vibration, seismic, EMI/RFI, and electrical power variations) associated with the location for each portion of the instrument channel. • Treatment of instrument uncertainty in accordance with the methodology. Statistical Guidelines for Instrument Uncertainty In the review of uncertainties in determining a trip setpoint and the allowable value and as-found and as-left tolerances, the NRC staff typically requires that individual instrument channel uncertainty terms be estimated using a 95/95 tolerance interval as an acceptable criterion. This means that the bounds of each of the channel random uncertainty terms must be estimated based on the use of statistical methods in which samples of the population of uncertainties are used to estimate the mean and standard deviation of the entire population of such uncertainties. The bounds used to ascertain the limits of the uncertainty must be so determined as to envelope 95% of the sample population at a 95% confidence level. The size of the data pool for the sample must be shown to be statistically appropriate for use at the 95% confidence interval. | <p>This is a subset of those errors already prescribed.</p> |
| | <p>This appears to be a continuation of the previous list.</p> |
| | <p>This is described in detail in the preceding section. Revised to only discuss the documentation requirement.</p> |

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <ul style="list-style-type: none">• Basis for Instrument Calibration Intervals The applicant/licensee must evaluate the effects of extended calibration intervals on instrument uncertainties, equipment qualification, and vendor maintenance provisions to assure that an extended surveillance interval does not result in exceeding the assumptions stated in the safety analysis. Generic Letter 91-04, Enclosure 2, "Guidance for Addressing the Effect of Increased Surveillance Intervals on Instrument Drift and Safety Analysis Assumptions," provides acceptable guidance for justifying extended calibration intervals through the use of data analysis, monitoring, and assessment. This approach has been used for plants to accommodate a 24-month fuel cycle change. For changes to surveillance test intervals for reasons other than a 24-month fuel cycle, acceptable submittals have followed the risk informed approach and followed the guidance of Regulatory Guides 1.174, 1.177, and 1.200. | Justification of intervals is not a part of the TSTF-493 implementation, extended intervals have either previously been justified or will be controlled under a TS surveillance frequency control program. No information need be provided. |
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Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

Setpoint Methodology Review

The setpoint methodology and assumptions must describe how the setpoint calculation is independently reviewed to confirm that an acceptable analysis method is used and the analysis parameters and assumptions are consistent with the safety analysis, system design basis, technical specifications, plant design, and maintenance (including calibration and functional testing) practices. The following factors must be emphasized in the licensee's independent review:

- Relationships between the safety limit, analytical limit, limiting trip setpoint, the allowable value, the setpoint, the acceptable as-found band, the acceptable as-left band, (and the setting tolerance, if a smaller tolerance than the acceptable as-left band is used to maintain the setting within the acceptable as-left band.)
- The independent reviewer must confirm that the setpoint as-found and as-left tolerances are consistent with the specific design of the instrument channel, any assumptions made regarding instrument channel performance as it relates to required technical specification actions, and actual plant maintenance and testing practices. Additional information related to setpoint technical specifications is provided in RIS 2006-17.
- Basis for selection of the trip setpoint.
- Uncertainty terms that are addressed.
- Method used to combine uncertainty terms.
- Justification for use of statistical combination methods rather than algebraic combination.
- Relationship between instrument and process measurement units.
- Methodology and assumptions used for propagating uncertainties present at the input of modules within the instrument channel to the module output for non-linear modules.
- Data used to select the trip setpoint, including the source of the data.
- Assumptions used to select the trip setpoint (e.g., ambient temperature limits for equipment calibration and operation, potential for harsh accident environment).
- Instrument installation details and bias values that could affect the setpoint.
- Correction factors used to determine the setpoint (e.g., pressure compensation to account for elevation difference between the trip measurement point and the sensor physical location).
- Instrument test, calibration or vendor data, as-found and as-left; each instrument must be demonstrated to have random drift by empirical and field data.

The TSTF disagrees with this section. The independent review is performed under the licensee's quality assurance program and verifies the licensee methodology is followed. Any specifics should be included in the methodology description, not in an independent review description.

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <p>Evaluation results must be reflected appropriately in the uncertainty terms, including the setpoint methodology. The design, installation, calibration procedures, and calibration activities for specific channels may be inspected to gain further confidence that setpoint calculations are consistent with plant equipment and calibration procedures. NRC Inspection Manual, Procedure 93807, "Systems Based Instrumentation and Control Inspection," provides guidance for such inspections.</p> | <p>This describes NRC tasks, not the licensee's methodology, program, or amendment. Information is removed.</p> |
| <p>2. <u>Detailed Setpoint Control Program Description</u></p> <p>In accordance with Administrative Control TS 5.5.X.b, the licensee must also provide the staff with a description of its proposed plant setpoint control program that adopts the two sub-parts of the instrument setpoint methodology described above for establishing and maintaining setpoints. The program methodology must incorporate these subparts into a configuration control process that provides the licensee staff with the ability to assess safety related instrument channel operability based on a continually maintained plant configuration and library of engineering analyses supporting the determination of safety related setpoints. The submittal must contain copies of the proposed Technical Specification changes and the proposed appearance of the Technical Specification pages after the changes are approved.</p> | <p>The TSTF disagrees with this section. The SCP establishes license conditions that the licensee must implement per the TS. The NRC approves the TS; the licensee implements the TS. This paragraph is duplicative of the model application.</p> |
| <p>The description in the licensee's TSTF-493 Option B program submittal must address and clearly describe how the licensee will ensure that the following aspects of instrument channel setpoint control will be continually maintained:</p> <ul style="list-style-type: none"> • Setpoints (NTSPs and LTSPs, where applicable) that are based on analytical limits or other limits derived from current versions of plant safety analyses, or that are demonstrated to be conservative with respect to the current versions. There are occasions when such safety analyses are updated to accomplish related plant activities. The licensee TSTF 493 Option B setpoint control program must clearly describe how the program ensures that official plant records establishing instrument safety settings reflect the appropriate source and revision of updated safety analyses from which analytical limits are derived. | <p>This is part of the methodology, described above, and the licensee design control process required by 10 CFR 50, Appendix B, Criterion III, Design Control.</p> |

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <ul style="list-style-type: none"> Instrument channel total loop uncertainty calculations that take into account the differences in channel performance under operating conditions versus those present under plant testing and maintenance conditions, including the loop configuration used during the performance of calibration and functional test procedures. On occasion, changes are made to plant calibration, functional test, or other periodic test procedures. Licensee setpoint control programs must ensure that official plant records establishing instrument safety settings reflect the appropriate source and revision of current calibration and functional test procedures. They must also reflect currently approved maintenance practices and the associated measurement and test equipment for performing such procedures. | <p>This is part of the methodology, described above, and the licensees design control process required by 10 CFR 50, Appendix B, Criterion III, Design Control.</p> |
| <ul style="list-style-type: none"> Instrument channel total loop uncertainty calculations that are based on appropriate vendor range, accuracy, and performance data pertinent to the currently-installed instruments. On occasion, installed instruments are found to be inoperable or no longer maintainable. Due to obsolescence, the replacement component may be of a different manufacturer or model number. The safety related instrument settings must be based on current information. Licensee setpoint control programs must ensure that the official plant records establishing instrument safety settings reflect the appropriate source and revision of manufacturer performance data for the currently-installed equipment. | <p>This is part of the methodology, described above, and the licensees design control process required by 10 CFR 50, Appendix B, Criterion III, Design Control, and other Appendix B criteria.</p> |
| <ul style="list-style-type: none"> Instrument setpoints are based on appropriate and correct scaling information pertinent to the current installation. On occasion, plant configurations change due to equipment replacement or other reasons. (example: Steam generators are upgraded with newer models.) The information used to scale the instruments performing safety related functions must be kept current. | <p>This is part of the methodology, described above, and the licensees design control process required by 10 CFR 50, Appendix B, Criterion III, Design Control, and other Appendix B criteria.</p> |
| <ul style="list-style-type: none"> Carefully controlled procedures implementing the calculation methodology for safety related settings. Typically, the maintenance of these procedures is covered under a licensee configuration control process. This may be accomplished by making reference to the existing plant configuration control process and governing procedures and programs. | <p>This is required under 10 CFR 50, Appendix B.</p> |

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <ul style="list-style-type: none"> The corrective action program steps applied to a finding, during the performance of a calibration or functional test procedure, that address and clearly document why an instrument channel may be performing outside its anticipated "normal performance" as-found tolerance band. The corrective actions may include re-evaluating the as-found tolerance band through formal engineering analyses, implementing the use of more accurate measurement and test equipment, increasing the required surveillance frequency, or replacing the equipment with new or better performing equipment. In addition to a description of how the licensee implements each of these activities, the setpoint control program must describe how the resulting action will include configuration control for all setpoint calculations, plant configuration documentation, calibration and functional test procedure information, and surveillance frequency control program. | <p>This information is incorporated in the corrective action program required by the 10 CFR 50, Appendix B, program.</p> |
| <p>The maintenance of the setpoint control program is a continuous configuration management process that must keep up with plant licensing basis and physical configuration.</p> | <p>This is required under 10 CFR 50, Appendix B.</p> |
| <p><u>Technical Specification Administrative Control Program –Section 5.0 of the Plant Technical Specifications</u></p> <p>The licensee submittal for approval of a TSTF-493 Option B Setpoint control program must contain a proposed Technical Specification entry describing its Setpoint control program. This description must, as noted above, describe not only the process for establishment and maintenance of instrument channel settings under the scope of TSTF-493 Option B, but also the program which maintains configuration control over all related plant configuration documentation, calibration and surveillance test procedures, corrective action programs, and surveillance frequency control program.</p> | <p>This is included in the model application and not required here.</p> |
| <p>The licensee submittal must state exactly where the details of this program will be documented (e.g., FSAR, Technical Requirements Manual, etc.). The submittal must also contain the actual proposed wording to be used for entry of this information into the FSAR or Technical Requirements Manual.</p> | <p>This is included in the proposed Technical Specifications.</p> |

Attachment B

Proposed Resolution of Issues Related to Option B of TSTF-493, Revision 4

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| <p>Once the licensee has implemented the NRC-approved Setpoint Control Program, (SCP) the licensee shall provide a letter to the NRC Project Manager notifying the NRC staff of the occurrence of any changes made under this SCP to the LTSP, NTSP, AV, ALT, or AFT associated with the functions covered within the scope of the licensee's SCP. Such a letter shall be received by the NRC Project Manager within 60 days following the implementation of any such change. The letter shall specify the date of implementation of the new setting, the specific safety function affected, the Technical Specification Table previously applicable, the specific term (i.e., NTSP, LTSP, AV, ALT, or AFT) impacted by the change, the old value, and the new value. This letter shall be kept on the docket for use in identifying future NRC staff inspection activities.</p> | <p>This is inconsistent with 50.59 and the TSTF-493 Technical Specifications, and is deleted.</p> |
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