



NUCLEAR ENERGY INSTITUTE

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July 5, 2007

Mr. Patrick M. Madden  
Deputy Director  
Division of New Reactor Licensing  
New Reactors Office  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**Subject:** Industry Comments on Branch Technical Position 7-12, *"Guidance on Establishing and Maintaining Instrument Setpoints"*

**Project Number: 689**

Dear Mr. Madden:

The NEI Setpoint Methods Task Force is the industry organization that has been interacting with the NRC staff on setpoint methodology issues for over four years. It has reviewed Branch Technical Position (BTP) 7-12 and has concerns over the defined scope and level of detail of docketed setpoint methodology information for combined licenses. The scope and level of detail being defined is substantially more than that being required for existing plants, as established in the regulatory interactions of the past four years. Our main concerns center on three areas:

- The reviewer guidance in BTP 7-12 goes beyond that necessary to evaluate limiting safety system settings (LSSS), yet does not provide a basis for going beyond the LSSS. No safety reason or regulatory basis has been provided to justify in regulatory documents non-safety setpoints to the degree of rigor imposed by the BTP. Such actions will result in the unnecessary expenditure of industry and NRC resources on non-safety issues, contrary to the overall regulatory drive towards a regulatory process that focuses on safety matters.
- In the recent industry-NRC discussions on setpoint methodologies for existing plants, it is clear that there are numerous acceptable methods for establishing setpoints and surveillance procedures. In contrast, BTP 7-12 is unnecessarily prescriptive in defining one acceptable setpoint methodology and fails to recognize that there are many acceptable methods.

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- In comparison to the common understandings that have been established on setpoint methodology in recent years, the scope and level of detail of the information requested to be submitted on the docket is beyond that necessary to make a regulatory finding of compliance with 10 CFR 50.36. Site audits and inspections are a more effective and efficient method of assessing a licensee's overall setpoint methodology program that encompasses safety and non-safety equipment.

More detailed comments are provided in the enclosure.

Combined license applicants are in the final stages of the decision-making process of submitting reference plant applications. Regulatory stability is a critical element in the decision-making process on proceeding with an application and in determining whether the application is of the right quality. As a result, NEI requests a public meeting as soon as practicable to address these comments in advance of anticipated combined license submittals. The industry can support a meeting during the week of July 16, 2007.

If you have questions about these comments, please contact Mike Schoppman (202-739-8011; [mas@nei.org](mailto:mas@nei.org)) or Leslie Kass (202-739-8115; [lck@nei.org](mailto:lck@nei.org)).

Sincerely,



Adrian P. Heymer

c: Mr. Thomas A. Bergman, NRC  
Mr. Andrew J. Howe, NRC  
Mr. William E. Kemper, NRC  
Mr. Michael E. Mayfield, NRC  
Mr. Stephen S. Koenick, NRC  
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Appendix A  
Supplemental NEI Comments on BTP 7-12

1. General Comments

- (1) BTP 7-12 is too prescriptive. It should recognize that there are many acceptable methods for establishing a setpoint tolerance range.
- (2) BTP 7-12 represents unilateral NRC standard setting without benefit of participation by appropriate standards organizations. The industry objects to the regulatory imposition of standards without independent peer review.
- (3) BTP 7-12 contains reviewer guidance that exceeds the setpoint requirements for the current generation of operating plants. The NRC should perform a regulatory analysis to ensure the additional cost is commensurate with the benefit. Rather than differentiate one vintage of plant from another, the nuclear industry recommends a single, common set of setpoint requirements that is based on compliance with 10 CFR 50.36 and is applicable to all plants.
- (4) BTP 7-12 should contain language noting that the plant-specific licensing basis takes precedence over the BTP whenever the BTP is used during the review of a plant-specific licensing action for a plant that has an operating license.
- (5) NRC should ensure that BTP-12 is consistent with other regulatory and industry initiatives that affect setpoints.

2. Comments on Section A.3, Definitions

- (1) Definition A (acceptable as-found band) is unnecessarily prescriptive. There are many acceptable methods to establishing as-found bands, and all should be recognized in NRC guidance documents. The plant-specific setpoint methodology establishes the basis for establishing the as-found band for a particular plant design.
- (2) Definition A introduces the undefined term "deviation limit." NEI has disagreed with this term since its introduction by the NRC staff in approximately 2003 (please refer to References 1 and 2).
- (3) The parenthetical in the second line of Definition B incorrectly equates the nominal trip setpoint with the limiting trip setpoint.
- (4) Definition B (as-left tolerance band or acceptable as-left band) is unnecessarily prescriptive because it minimizes the use of engineering judgment. Instrument uncertainty calculations vary from application to application, and engineering judgment that has a sound technical basis should be encouraged rather than subjected to additional conditions.

3. Comments on Section B.1, Introduction

- (1) Protective instrumentation (i.e., reactor trip system and engineered safety feature actuation system) does not "control" process parameters during a transient as indicated by the BTP. It "limits" transients to prevent safety limits from being exceeded.
- (2) A licensee's safety analysis does not establish analytical limits as indicated by the BTP. The safety analysis "validates" the analytical limits identified in the FSAR and included in technical specifications.
- (3) Contrary to language in the BTP, the licensee's safety analysis may include allowances for instrumentation and process measurement uncertainty.
- (4) The BTP implies an unwarranted degree of rigor for reviewing all setpoints that is similar to that applied to limiting safety system settings (LSSS). The BTP should defer to industry standards and recommended practices for implementing a graded approach for determining setpoints.

4. Comments on Section B.3, Acceptance Criteria

- (1) Section B.3 contains a subsection entitled, "Statistical Guidelines for Instrument Uncertainty." It notes that typically the NRC uses "95/95" tolerance limits as an "acceptable criterion." We note that many calculations in practice are tested against a "95/high-confidence" criterion, especially if the sample size is small. The question of which tolerance criterion to use in particular situations should not be imposed unilaterally by NRC, but should be resolved in coordination with appropriate standards organizations.
- (2) Section B.3 contains a subsection entitled, "Setpoint Documentation." The scope and level of detail of the documentation requested on the docket is far beyond that necessary to make a regulatory finding of compliance with 10 CFR 50.36. On-site review of setpoint calculations is a more efficient and effective way to identify the specific setpoint information that needs to be docketed in support of the regulatory review. NEI recommends that the NRC staff work with stakeholders to determine the degree of detail necessary for the following topics:
  - (a) safety setpoints that are not related to LSSS functions
  - (b) non-safety setpoints
  - (c) procedural actions that are "important to safety"
  - (d) calibration intervals
  - (e) loop diagrams, layout drawings, and installation details
  - (f) criteria specific to digital designs

5. References

- (1) NEI White Paper, "ISA S67.04 Methods for Determining Trip Setpoints and Allowable Values for Safety-Related Instrumentation" (December 5, 2003)
- (2) NEI letter to NRC, A. Marion to J. Lyons, independent review of NEI White Paper dated December 5, 2003 (December 17, 2004)