

March 23, 2004

MEMORANDUM TO: Brian W. Sheron, Associate Director
Project Licensing & Technical Analysis
Office of Nuclear Reactor Regulation

FROM: Ledyard B. Marsh, Director /RA/
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SUBJECT: DECISION ON SHORT-TERM ACTIONS REGARDING THE
USE OF ISA-RP67.04-1994, PART II SETPOINT METHOD 3

The purpose of this memorandum is to document the staff's decision on the appropriate short-term actions necessary to continue the review of licensing actions that involve the modification of instrumentation setpoints. The specific decision discussed herein is consistent with the discussion of the status of the setpoint methodology review described in the memorandum to you, dated February 5, 2004, from Eric J. Leeds, Deputy Director, Division of Licensing Project Management.

On January 9 and January 22, 2004, the NRC staff briefed the Leadership Team (LT) on the proposed short-term actions regarding the industry's proposed use of one of the methods used by licensees in determining instrument loop allowable values (AVs) as described in ISA-RP67.04-1994, Part II, "Methodologies for the Determination of Setpoints for Nuclear Safety-Related Instrumentation." Specifically, the staff has raised concerns regarding whether Method 3 (M3) in ISA-RP67.04 provides an adequate methodology for establishing the operability limit for the instrument loop. The NRC staff is currently reviewing several license amendments that requested changes to values in the technical specifications (TS) that were determined using M3. Review of the M3 portion of these amendments had been suspended pending a decision on the use of M3.

On December 19, 2003, a meeting of Office of Nuclear Reactor Regulation senior managers and staff members was held to determine the course of action necessary to restart the review of the licensing actions with M3 issues. Based on that meeting, the staff was directed to develop a position paper that would justify the interim use of M3 and to develop longer-term plans to address the underlying issues associated with determining Limiting Safety System Settings (LSSS) as required by Title 10 of the *Code of Federal Regulations*, Section 50.36,

“Technical specifications.” Previous to the December 19, 2003, meeting, the staff had determined that the M3 issue did not raise immediate safety concerns that would prevent the issuance of an amendment if the proposed TS changes were found to be otherwise acceptable. Upon completion of the position paper, the LT was to reconvene and review the staff’s plan to proceed with the review of the M3 licensing actions.

On January 9, 2004, the LT and cognizant staff members met to discuss the position paper. Based on those discussions, the staff generally agreed that, with minor modification, the position paper outlined an acceptable safety basis for the use of M3 until a long-term solution to the issue could be developed and implemented. At the conclusion of this meeting, the technical staff was tasked with selecting a lead plant from those with M3-based changes and developing the draft safety evaluation (SE) using the basis outlined in the position paper.

On January 22, 2004, the staff briefed the LT on the status of the M3 short-term action plan. The staff reported that it was unable to develop a generic SE to address the M3 concern that could be applied (i.e., could be used as a template) to many of the plants with M3-based changes due to the plant-specific nature of the issue. The staff proposed and the LT agreed that for plants requesting setpoint and allowable value changes to their TS that are derived using M3, the following three bases should be cited as reasons why the staff does not have an immediate safety concern with the proposed methodology. The LT also agreed that the SE should acknowledge the NRC staff’s concern that LSSSs (AVs) calculated using M3 may not establish a TS operability limit that ensures the AL would not be exceeded and state that the NRC staff has the issue under review.

- Since the total loop uncertainty accounts for all uncertainties associated with the instrument loop, there is reasonable assurance that the trip setpoint will provide protective action prior to a safety limit (SL) being exceeded.
- There is conservatism in the analyses used to determine the analytical limit (AL), as well as the SL.
- The staff is not aware of any event where instrument loops have exceeded the SL based on periodic surveillance testing.

The LT concluded, for the reason specified above, that there is sufficient conservatism in the analyses used to determine the AL such that as-found instrument setpoints that fall within the AVs determined by M3 would not result in an SL being exceeded, and therefore, the method used to determine the trip setpoints meets the 10 CFR 50.36 requirements. The LT also concluded that licensees could continue to calculate AVs using M3 until a long-term resolution is implemented. The NRC staff’s expectation for setting the AV is given in Regulatory Guide 1.105, “Setpoints for Safety-Related Instrumentation,” Regulatory Position C.4, which states: “The allowable value is the limiting value that the trip setpoint can have when tested periodically, beyond which the instrument channel is considered inoperable and the corrective action must be taken in accordance with the technical specifications.”

During the development of the draft SE, Division of System Safety and Analysis (DSSA) staff developed a more comprehensive discussion of the basis for the second bullet above. The meeting participants reviewed the expanded DSSA basis and decided that the following

discussion did not need to be included in each SE issued for an M3 setpoint change, but that it should be documented in this memorandum:

“These analyses are approved by the staff against the criteria of Title 10 of the *Code of Federal Regulations*, Section 50.46, which requires that they be conservative or account for uncertainties in the evaluation method. The result provides significant margin when establishing setpoints for safety system actuation. The AL is established as a conservative value below the SL in order to ensure margin in the trip setpoint.”

At the conclusion of the meeting, the participants agreed that the short-term actions described above regarding the use of M3 in the determination of LSSS AVs was an acceptable method to address the staff's concerns with the use of M3 in the short term. The meeting participants also agreed that staff members from DSSA and the Division of Regulatory Improvement Programs would concur on any SEs where the staff uses these short-term actions to address M3 issues until the issuance of this memorandum documenting the decision to use this basis.

The long-term actions to address issues with the use of M3 in the determination of LSSS AVs will be addressed separately. The staff has been directed to use the Director's Quarterly Status Report to develop and track those long-term actions.

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At the conclusion of the meeting, the participants agreed that the short-term actions described above regarding the use of M3 in the determination of LSSS AVs was an acceptable method to address the staff’s concerns with the use of M3 in the short term. The meeting participants also agreed that staff members from DSSA and the Division of Regulatory Improvement Programs would concur on any SEs where the staff uses these short-term actions to address M3 issues until the issuance of this memorandum documenting the decision to use this basis.

The long-term actions to address issues with the use of M3 in the determination of LSSS AVs will be addressed separately. The staff has been directed to use the Director’s Quarterly Status Report to develop and track those long-term actions.

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