

September 13, 1999

Dr. William D. Travers
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Dr. Travers:

SUBJECT: PROPOSED FINAL REVISION 3 TO REGULATORY GUIDE 1.105,
"SETPOINTS FOR SAFETY-RELATED INSTRUMENTATION"

During the 465th meeting of the Advisory Committee on Reactor Safeguards, September 1-3, 1999, we reviewed the proposed Final Revision 3 to Regulatory Guide 1.105, "Setpoints for Safety-Related Instrumentation." This guide endorses ANSI/ISA S67.04-Part 1-1994 Standard with certain exceptions and clarifications. During our review, we had the benefit of discussions with representatives of the NRC staff and Westinghouse Electric Company. We also had the benefit of the documents referenced.

Conclusions and Recommendations

1. We recommend that the final Revision 3 to Regulatory Guide 1.105 be issued for industry use.
2. We agree that a graded approach to using setpoint methodology is appropriate and consistent with the use of risk-informed regulation. We encourage the development of guidance for such an approach.

Discussion

Operating experience indicates that improper setpoints for safety-related instrumentation may allow plants to operate outside the limiting conditions of operation specified in their Technical Specifications. Setpoint problems arose because of varying setpoint methodologies, a lack of a consistent definition of allowable value in different setpoint calculations, and improper understanding of the relationship of the allowable value to earlier setpoint terminology, procedures, and operability criteria.

To resolve these problems, the Instrument Society of America (ISA), with the participation of NRC, undertook development of a standard in the mid-1970s, and subsequently issued ANSI/ISA Standard S67.04 in 1982. Regulatory Guide 1.105, which endorsed the 1982 version of the Standard is being revised to endorse the 1994 version with some clarifications and exceptions.

The limiting safety system setting (LSSS) establishes the threshold for protective system action to prevent acceptable limits being exceeded during design basis accidents. The LSSS, therefore, ensures that the automatic protective action will correct abnormal situations before safety limits are exceeded. Section 4.3 of the 1994 Standard states that the LSSS may be the trip setpoint, an allowable value, or both. This arrangement allows the utilities and vendors more flexibility in developing their trip setpoint setting methodologies. Although all parties agree that this is not a safety issue, there are strongly held views by some that only the trip setpoint is the appropriate value for the LSSS. For the Standard Technical Specifications, the staff designated the allowable value as the LSSS.

Westinghouse argues that only the trip setpoint is appropriate for the LSSS. It maintains that acceptability for continued operation is always based on the premise that the *as left* condition of the instrument channel must be within the uncertainty calibration tolerance about the nominal trip setpoint. In addition, Westinghouse maintains that the allowable value is defined as an uncontrolled *as found* parameter in contrast to the trip setpoint which is a controlled *as left* parameter. Hence, Westinghouse concludes that the trip setpoint is the appropriate value for the LSSS. The staff does not preclude Westinghouse's conclusion in Revision 3 to Regulatory Guide 1.105.

The Regulatory Guide 1.105, Revision 3 endorses a graded approach to using setpoint methodology but gives little guidance on implementation. The staff should develop specific guidance on the use of the graded approach in all appropriate aspects of setpoint methodology. Regulatory Guide 1.176, which provides guidance on the graded approach to quality assurance, should be applicable to this situation.

Sincerely,

/s/

Dana A. Powers
Chairman

References:

1. Memorandum dated August 5, 1999, from Ashok C. Thadani, Office of Nuclear Regulatory Research, NRC, to John T. Larkins, Executive Director, ACRS and Joseph A. Murphy, Committee to Review Generic Requirements, Subject: Revision 3 to Regulatory Guide 1.105, "Setpoints for Safety-Related Instrumentation."
2. The International Society for Measurement and Control, ANSI/ISA-S67.04-Part I-1994, "Setpoints for Nuclear Safety-Related Instrumentation," August 1995.
3. U. S. Nuclear Regulatory Commission, Regulatory Guide 1.176, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Graded Quality Assurance," August 1998.