July 30, 2004

STAKEHOLDERS: Nuclear Energy Institute, Industry Representatives, and Members of the Public

SUBJECT: SUMMARY OF JUNE 23, 2004, CATEGORY 2 MEETING WITH NUCLEAR ENERGY INSTITUTE (NEI) TO DISCUSS METHODS FOR DETERMINING TRIP SETPOINTS AND ALLOWABLE VALUES FOR SAFETY-RELATED INSTRUMENTATION

On June 23, 2004, the U.S. Nuclear Regulatory Commission (NRC) staff met with representatives of the Nuclear Energy Institute (NEI) and the industry in a public meeting at NRC headquarters in Rockville, Maryland. The attendance list is included as Attachment 1. The purpose of the meeting was to communicate NRC staff concerns about licensees' use of ISA-S67.04-1994, "Setpoints for Nuclear Safety-Related Instrumentation," Part II, Method 3, in the determination of trip setpoints (TSPs) and allowable values (AVs), and to hear a presentation by an industry representative on the calculation of safety limits (SLs) with emphasis on the margins inherent in the limits. At this meeting, the NRC staff presented details about a problem statement that was transmitted to NEI in a letter dated June 17, 2004 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML041690604).

The NRC staff opened the meeting with introductions and a general introduction about the issues regarding the use of ISA Method 3. The NRC staff then gave a brief overview of the regulations that are relevant to this issue. The slides detailing the content and interpretation of Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.36, "Technical Specifications," were omitted from the presentation in the interest of saving time. After the presentation of the title, introduction, and setpoint graphic slides (Slides 1, 2, and 3), the presenter proceeded directly to the 10 CFR 50.36 summary slide (Slide 9). The audience, in particular, the NEI and Westinghouse representatives, indicated that they accepted the points on the summary slide and that detailing their development was not necessary. Also, in the interest of saving time, some explanatory points on slides prior to Slide 25 were not addressed explicitly, but rather left for the audience to read for themselves. The audience did not object to skipping the presentation of this information during the meeting. The remainder of the presentation followed the content of the slides, which can be found at ADAMS Accession No. ML041810346.

During the presentation, the audience requested further clarification about the information contained in Epilogue 1 (Slides 41 and 42). The question related to a non-intuitive situation in which a channel that is otherwise behaving as expected should nevertheless be declared inoperable because the analytical limit (AL) it is designed to protect could be exceeded. It was reiterated, as indicated on the slides, that the need to protect the AL supersedes the fact that the channel is behaving as expected. The NRC staff explained that the situation is caused because of the use of square-root of the sum of the squares (SRSS) to combine the channel

operational test (COT) uncertainties with the uncertainties associated with the portion of the instrument loop not tested during the COT (the "nCOT") in the derivation of the limiting TSP. The SRSS is acceptable from a statistical standpoint to combine COT and nCOT uncertainties in the absence of *a priori* information. However, if a measured setpoint (as-found) is beyond an AV calculated by Method 2, then, even though it might be within the expected range of as-found values according to the characteristics of the devices included in the test, there may not be sufficient margin between this value and the AL to accommodate the uncertainties not addressed in the test. In such a case, the tested instruments would be performing as expected, but the AL would not be adequately protected. In summary, SRSS is acceptable for combining statistically independent uncertainties in the absence of *a priori* information, but once one of the elements combined using SRSS has been measured, SRSS is no longer applicable and conditional probabilities must be used.

A representative from NRC's Reactor Systems Branch of the Office of Nuclear Reactor Regulation asked for quantification of "typical" values for total loop uncertainty (TLU). The presenter explained that it would not be possible to establish a reliable generic bound on TLU because of the immense variety of possible instruments and applications. The questioner concluded that if the TLU could not be limited to a sufficiently small value, then it could not be confirmed that violation of AL by 40 percent of TLU would be tolerable.

Following the NRC staff's presentation, a representative from Westinghouse on behalf of NEI made a brief presentation on the margins inherent in plant safety analyses and their application to analytical and SLs. The presenter did not provide any notes or handouts. The presenter noted during the course of the presentation and during the following discussions, that although there is margin in the ALs assumed in the safety analyses, and margin in the SLs that the safety analyses show are protected, Westinghouse has never attempted nor have they ever seen any attempt to quantify and use this margin. Westinghouse considers it inappropriate to permit an AL to be exceeded without a rigorous analysis that demonstrated that the associated SL would not be exceeded. The presenter emphasized that it is Westinghouse's practice to assume that the AL is a limit that should never be exceeded.

At the conclusion of the meeting, the representatives from NEI thanked the NRC staff for the presentation and committed to share the information with members of NEI's Setpoint Methods Task Force (SMTF). NEI stated that the SMTF plans to review the problem statement and presentation details. NEI offered to have the SMTF meet with the NRC staff in August 2004 to give the SMTF an opportunity to provide their feedback to the problem statement and presentation. The staff agreed to work with NEI to schedule a future public meeting on this issue, as deemed necessary. (Subsequent to the close of the June 23, 2004, public meeting, the NRC staff agreed to repeat the Method 3 presentation in a public meeting at NRC headquarters for the benefit of the SMTF and other interested parties. Details regarding this presentation will be documented in a separate meeting summary, as appropriate.)

Members of the public were in attendance at the June 23, 2004, public meeting, but did not have any questions about the presentation. Public meeting feedback forms were not received.

Please direct any questions to Christopher Gratton at 301-415-1055, or cxg1@nrc.gov.

Project No. 689

Attachment: As stated

cc: w/att:

Mr. J. Humphreys
State of New Jersey
Bureau of Nuclear Engineering
P.O. Box 415
Trenton, NJ 08625-0415

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DATE	7/27/04	7/26/04	7/29/04	7/29/04

OFFICIAL RECORD COPY

ATTENDANCE SHEET

June 23, 2004

Meeting

SUBJECT: METHODS FOR THE DETERMINING TRIP SETPOINTS AND ALLOWABLE VALUES FOR SAFETY-RELATED INSTRUMENTATION

NAME	ORGANIZATION
Christopher Gratton	NRR/DLPM
Mike Schoppman	NEI
Jim Andrachek	Westinghouse
Davis Huegel	Westinghouse
Ed Hackett	NRR/DLPM
Stephanie Coffin	NRR/DLPM
Evangelos Marinos	NRR/DE
Hukam Garg	NRR/DE
Cliff Doutt	NRR/DSSA
Robert Clark	NRR/DLPM
Paul Loeser	NRR/DE
Carl Schulten	NRR/DIPM
Altheia Wyche	SERCH/Bechtel
Deann Raleigh	LIS, Scientech
Chris Grimes	NRR/DE
Jose Calvo	NRR/DE
Jennifer Uhle	NRR/DSSA
Tom Boyce	NRR/DIPM

Attachment