March 18, 2009

MEMORANDUM TO: William Ruland, Director
Division of Safety Systems
Office of Nuclear Reactor Regulation

FROM: Timothy Collins, Senior Advisor /RA/
Division of Safety Systems
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF MARCH 4-5, 2009 OPEN MEETING WITH AREVA, GENERAL ELECTRIC-HITHACHI, AND WESTINGHOUSE ON ACCIDENT UNCERTAINTY METHODOLOGY ISSUES

On March 4-5, 2009, a Category 2 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Areva, General Electric-Hitachi, and Westinghouse at NRC Headquarters, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to discuss issues associated with methodologies for assessment of uncertainty in SRP Chapter 15 licensing basis analyses. A list of attendees is provided as Enclosure 1.

Each vendor organization presented information on the uncertainty methodology it currently uses and then identified areas that it considered in need of additional guidance. Common themes in the presentations were the need to define “best estimate” and “high probability”, how to treat technical specifications when developing probability distributions, restrictions on which variables may be sampled, the appropriate use of conservative inputs, and questions on the treatment of LOCA as a multivariate problem. The Areva presentation is provided in Enclosure 2, the GE presentation is provided in Enclosure 3, and the Westinghouse presentation in provided in Enclosure 4.

The NRC staff then made two presentations (see Enclosures 5 and 6). The first presentation identified the staff’s overall goals for participating in the forum. The goals are to enhance regulatory stability and predictability in the review process. The staff indicated that it did not see “one acceptable method” as the output of the forum, but rather a definition of attributes that are necessary for a methodology to be acceptable. Any method could be used that meets the attributes.

The second staff presentation discussed the staff’s development of the TRACE code for use in auditing licensing calculations. The staff noted that it is already developing input decks to perform audit calculations for current extended power uprate submittals. The staff is also enhancing the SNAP “front end“ for TRACE to facilitate implementation of uncertainty calculations.

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A direct comparison of the 95/95 values of the figures of merit calculated by TRACE to those calculated by the licensee would be the best audit tool. As in the vendor presentations, the staff presentations also identified areas needing attention that were similar to those noted by the vendors. Following the presentations there was a round table discussion aimed at drafting a list of distinct problem statements that would serve as topics for future meetings. The list of problem statements is provided in Enclosure 7. It was agreed that the problem statements should serve as a basis for the development of a charter for the forum.

The next action was a round table discussion on the possibility of using a consensus standard committee to formalize the work of the forum. It was noted that both the American Nuclear Society (ANS) and the American Society of Mechanical Engineers (ASME) have performed work on uncertainty standards for probabilistic risk assessments. It was noted that that work has many similarities to the work proposed by the forum. It was agreed to continue to look into the use of a standards committee, and also consider the possibility that the NRC take the lead by initiating the development of a regulatory guide.

Planning for the next meeting followed. It was agreed that each organization will email a mark up of the problem statements to other participants by the end of March. The markups will serve as the basis for development of a draft charter for the forum. The draft charter will be emailed by April 1st and discussed in a telecon in mid-April. The next meeting of the forum is tentatively scheduled for the first week of May where the charter will be finalized.

Members of the public were not in attendance. Public Meeting Feedback forms were not received.

Please direct any inquiries to me at 301-415-3261, or timothy.collins@NRC.gov.

Enclosures:
As stated

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