

January 30, 2008

Dr. William J. Shack, Chairman  
Advisory Committee on Reactor Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

SUBJECT: DRAFT FINAL NUREG-1829, "ESTIMATING LOSS-OF-COOLANT ACCIDENT FREQUENCIES THROUGH THE ELICITATION PROCESS," AND DRAFT NUREG-XXXX, "SEISMIC CONSIDERATIONS FOR THE TRANSITION BREAK SIZE"

Dear Dr. Shack:

I am responding to your letter of December 20, 2007, concerning your review of the subject draft NUREG-series reports (Agency-wide Documents Access and Management System (ADAMS) Accession No. ML073440143). I appreciate the time and effort the Advisory Committee on Reactor Safeguards (the Committee) has devoted to reviewing these reports.

The NUREG-1829 report describes efforts by the staff of the U.S. Nuclear Regulatory Commission to develop loss-of-coolant accident (LOCA) frequencies using an expert elicitation process. The NUREG-XXXX report addresses the potential seismic effects on the failure propensity of flawed and unflawed piping, as well as indirect failures of other components and component supports that could lead to piping failure. The staff developed these reports to support a voluntary risk-informed revision of the regulatory requirements for the emergency core cooling system (ECCS), as set forth in Title 10, Section 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Nuclear Power Reactors," of the *Code of Federal Regulations*. In particular, the subject NUREG reports support the development of a transition break size (TBS) which is smaller than the existing double-ended guillotine break that is considered in the design of the ECCS.

In your letter, the Committee provided the following three recommendations:

1. NUREG-1829 on estimating LOCA frequencies through the expert elicitation process and the NUREG report on seismic considerations for the TBS should be published.
2. Regulatory decisions should be based on the totality of the results from the sensitivity studies rather than the results from individual methods of expert judgment aggregation.
3. A set of consistent guidelines should be established for the elicitation and aggregation of expert judgments including the performance of sensitivity studies. These guidelines should be used throughout the agency.

With respect to the first recommendation, the staff is actively finalizing both NUREG reports for publication. Both reports are expected to be publicly available in February 2008.

The staff also generally agrees with the second recommendation. In particular, the staff selected the proposed TBS in the draft rule by considering typical reactor coolant pressure boundary piping sizes to ensure an acceptably low break frequency after accounting for uncertainties in the NUREG-1829 LOCA frequency estimates. Risk contributions associated with factors not considered in the NUREG-1829 study (e.g., seismic loading, heavy load drop, rare water hammer loading) were also addressed to ensure that the failure propensity beyond the TBS remains low. In particular, NUREG-XXXX addresses the failure of piping greater than the TBS under seismic loading.

The staff also agrees that it may be beneficial to establish guidance for conducting elicitation and aggregating expert judgments. Any additional effort will build on relevant existing guidance such as NUREG-1563, "Branch Technical Position on the Use of Expert Elicitation in the High-Level Radioactive Waste Program," and NUREG/CR-6372, "Recommendations for Probabilistic Seismic Hazard Analysis: Guidance on Uncertainty and Use of Experts." RES will coordinate with other program offices to determine the need for further guidance. Any plans for completion would be contingent on the availability of resources identified through the Planning, Budgeting, and Performance Management Process.

In addition, please note that on August 10, 2007, Commission provided additional guidance for developing the risk-informed revision to the ECCS rule in the staff requirements memorandum (SRM) for SECY-07-0082, "Rulemaking to Make Risk-Informed Changes to Loss-of-Coolant Accident Technical Requirements," (ADAMS Accession No. ML072220595). In addition to addressing the SRM as part of this revision, the staff will also address many of the recommendations from the Committee's letter dated November 20, 2006 (ADAMS Accession No. ML063190465). The staff will brief the Committee on this revised rule before releasing it for public comment. A revised schedule for this rulemaking is currently scheduled to be sent to the Commission in March 2008.

Sincerely,

***/RA Martin J. Virgilio for /***

Luis A. Reyes  
Executive Director  
for Operations

cc: Chairman Klein  
Commissioner Jaczko  
Commissioner Lyons  
SECY

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