



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, DC 20555 - 0001

ACRSR-2047

September 22, 2003

The Honorable Nils J. Diaz  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

SUBJECT: DRAFT FINAL REGULATORY GUIDE x.xxx, "AN APPROACH FOR DETERMINING THE TECHNICAL ADEQUACY OF PROBABILISTIC RISK ASSESSMENT RESULTS FOR RISK-INFORMED ACTIVITIES" (FORMERLY DG-1122)

Dear Chairman Diaz:

During the 505<sup>th</sup> meeting of the Advisory Committee on Reactor Safeguards, September 10-13, 2003, we met with representatives of the NRC staff and the Nuclear Energy Institute to discuss the draft final Regulatory Guide (RG) x.xxx on An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment (PRA) results for Risk-Informed Activities (formerly DG-1122). We also had the benefit of the documents referenced.

### **Recommendations and Conclusion**

1. The draft final RG should be issued for trial use with an appropriate sample of pilot plants.
2. We agree with the staff's decision to develop a separate regulatory guide on how to perform sensitivity and uncertainty analyses.
3. Inadequate PRA scope and quality may significantly affect regulatory decisionmaking.

### **Discussion**

In our April 21, 2003 report, we made several recommendations for improving DG-1122. In his June 4, 2003 response, the Executive Director for Operations (EDO) agreed with all of our recommendations except the inclusion of guidance on how to perform sensitivity and uncertainty analyses. The staff argues that the American Society of Mechanical Engineers (ASME) standard for PRA already requires such analyses and that it would be more appropriate to discuss methods for performing them in a separate regulatory guide. We were told by the staff that this guide may be available for our review in early 2004. We look forward to reviewing it.

We agree with the staff and industry that the draft final RG should be issued for trial use. During our meeting with the staff, we made several suggestions for improving some of the

language of the guide, in particular the definition of the term “significant.” The staff should consider those suggestions before issuing this guide.

In SECY-03-0122, the staff states that an industry peer review group used the ASME PRA standard as the basis for evaluating a plant-specific PRA. Members of that group commented that the standard had “raised the bar” with respect to PRA quality, although they did not necessarily believe that this was inappropriate. We have also heard in the past that our reports that address PRA quality “ratchet up” the PRA requirements. We believe that it is important to make our position clear.

Our recommendations for the improvement of PRA scope and quality are not intended to “raise the bar” capriciously, but are always focused on the impact of such improvements on the integrated decisionmaking process that utilizes risk information. For example, in our report dated May 16, 2003, we recommended that the assessment of uncertainties should include model uncertainties. Such uncertainties may be very large in some cases and may affect the PRA results and insights in a way that could impact the relevant decisionmaking processes. If these uncertainties are not addressed explicitly, their magnitude and potential impact may not be fully appreciated and, thus, the decisionmaking process may not be truly risk informed.

Although our recommendations for PRA improvements are always motivated by our desire to have robust regulatory decisions, we note that enhanced confidence in PRA quality contributes to the agency’s performance goal of increasing public confidence in NRC regulatory processes.

Sincerely,

**/RA/**

Mario V. Bonaca  
Chairman

References:

1. Memorandum dated September 10, 2003, from Scott Newberry, Nuclear Regulatory Research, NRC, to John T. Larkins, Executive Director, ACRS, Subject: ACRS Review of Regulatory Guide, “An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities,” and the associated Standard Review Plan Chapter 19.1.
2. Memorandum dated July 18, 2003, for the Commissioners from William D. Travers, Executive Director for Operations, SECY-03-0122, Policy Issue Information, Status Report on Draft Regulatory Guide, DG-1122, “An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities,” and Draft Standard Review Plan Chapter 19.1, “Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities.”
3. Letter dated June 4, 2003, from William D. Travers, Executive Director for Operations, NRC, to Mario V. Bonaca, Chairman, ACRS, Subject: Proposed Resolution of Public Comments on Draft Regulatory Guide (DG)-1122, “An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities.”

4. American Society of Mechanical Engineers, ASME RA-S-2002, "Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications," dated April 5, 2002.
5. Report dated May 16, 2003, from Mario V. Bonaca, Chairman, ACRS, to Nils J. Diaz, Chairman, NRC, Subject: Improvement of the Quality of Risk Information for Regulatory Decisionmaking.
6. Report dated April 21, 2003, from Mario V. Bonaca, Chairman, ACRS, to Nils J. Diaz, Chairman, NRC, Subject: Proposed Resolution of Public Comments on Draft Regulatory Guide DG-1122, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities."