



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

July 21, 1999

The Honorable Greta Joy Dicus
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Dicus:

**SUBJECT: PROPOSED REVISION 3 TO REGULATORY GUIDE 1.160 (DG-1082),
"ASSESSING AND MANAGING RISK BEFORE MAINTENANCE ACTIVITIES AT
NUCLEAR POWER PLANTS"**

During the 464th meeting of the Advisory Committee on Reactor Safeguards, July 14-16, 1999, we reviewed the proposed Revision 3 to Regulatory Guide 1.160 (DG-1082), "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants." During our review, we had the benefit of discussions with representatives of the NRC staff and the Nuclear Energy Institute (NEI). We also had the benefit of the documents referenced.

Recommendations and Conclusion

1. Before issuing the proposed Revision 3 to Regulatory Guide 1.160 for public comment, the staff should revise it according to the following suggestions:
 - Section 5, "Assessment Scope," needs to be revised to clarify the meaning of "support systems with inter-system dependencies."
 - An introductory section is needed to clarify that the classification of systems, structures, and components (SSCs) as of high- or low-safety significance depends on the plant configuration and on how the measures of importance are determined.
 - The discussion on probabilistic risk assessment uncertainties should be deleted. Instead, the regulatory guide should state that the expert panel needs to consider the possible impact of these uncertainties on the importance rankings.
2. The staff should defer endorsing Section 11, "Assessment of Risk Resulting from Performance of Maintenance Activities," of NUMARC 93-01 until it has been revised by NEI and is made available for review.
3. The guidance provided by the staff to bound the scope of SSCs to be included in the assessment of maintenance activities is adequate to limit the number of analyses that must be performed.

Discussion

The staff has made revisions to Regulatory Guide 1.160 since our previous discussion and our report dated May 11, 1999. Although some of the revised language has improved this Guide, we believe that further revisions as noted in our recommendations are needed.

During our meeting, we were informed by NEI that a revision to Section 11 of the NUMARC 93-01 document would be forthcoming. Both we and the staff need to review the revised section to determine its acceptability for endorsement by Regulatory Guide 1.160, Revision 3.

Determining the risk significance of the plant configurations that may be encountered during maintenance and the large number of combinations of SSCs that may be out of service could require a large amount of resources. We believe that the four conditions set forth in Section 5 reasonably bound the number of configurations that must be considered. We encourage the staff to provide more guidance for determining the importance of multiple SSCs being out of service during maintenance. Such guidance is available in the literature (Reference 3).

We commend the staff for its efforts to revise the Maintenance Rule to better manage risk during maintenance activities and look forward to the resolution of our comments on the proposed Revision 3 to Regulatory Guide 1.160.

Sincerely,



Dana A. Powers
Chairman

References

1. Memorandum dated June 28, 1999, from Theodore R. Quay, Office of Nuclear Reactor Regulation, NRC, to John T. Larkins, ACRS, Subject: Request for Review of Draft Regulatory Guide DG-1082, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants."
2. Memorandum dated May 17, 1999, from William D. Travers, Executive Director for Operations, NRC, for the Commissioners, SECY-99-133, "Final Revision to 10 CFR 50.65 to Require Licensees to Perform Assessments Before Performing Maintenance."
3. *Reliability Engineering and System Safety 60* (1998) 213-226, M. C. Cheok, G. W. Parry, & R. R. Sherry, "Use of Importance Measures in Risk-Informed Regulatory Applications."
4. Nuclear Energy Institute, NUMARC 93-01, Revision 2, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," April 1996.