

May 22, 2002

Dr. George M. Hornberger
Chairman
Advisory Committee on Nuclear Waste
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

**SUBJECT: REVIEW AND EVALUATION OF THE U.S. NUCLEAR REGULATORY
COMMISSION'S WASTE SAFETY RESEARCH PROGRAM**

Dear Dr. Hornberger:

The staff in the Office of Nuclear Regulatory Research (RES) and the Office of Nuclear Material Safety and Safeguards (NMSS) have reviewed your March 22, 2002, letter to Chairman Meserve on the U.S. Nuclear Regulatory Commission's Waste Safety Research Program "Review and Evaluation of the U.S. Nuclear Regulatory Commission's Waste Safety Research Program." I would like to note that there have been significant efforts both by the staff and the Advisory Committee on Nuclear Waste (ACNW) to improve the communications on research activities and to seek the benefit of outside expertise. In particular I would like to acknowledge the workshop held by the ACNW, the visit by ACNW members to the CNWRA, and the consideration given to the views expressed by the expert panel chaired by Dr. Kenneth Rogers.

The following paragraphs will address each of your recommendations:

Recommendation 1: The allocation of funds between nuclear reactor safety and nuclear waste safety research and between anticipatory research and technical assistance should be considered a policy matter to be decided by the Commission.

Response: We agree that the Commission is ultimately responsible for all decisions on the use of NRC resources. The Commission's review of the annual budget request includes a consideration of the importance of the identified work to support the agency's mission and goals in each arena. The current prioritization process used by RES has incorporated criteria specific to the waste arena. This change has improved the process of prioritizing activities across arenas.

Recommendation 2: We recommend that RES incorporates a decision analysis framework into its prioritization of waste-related research. RES should consider the approaches that were discussed at the ACNW workshop including the use of expert panels.

- (From Recommendation 5) RES should explore the use of outside experts to address specific technical issues associated with the design and prioritization of its anticipatory research program.

Response: We agree. RES will explore the use of outside expertise in the design of its prioritization process. To illustrate, the following response was offered to the ACRS in my letter of March 29, 2002, with respect to similar comments in the ACRS report of October 12, 2001.

“On the use of formal decision-making methods, the staff noted the recommendations in NUREG-1635, Vol. 4, and in the ACRS report of October 12, 2001. RES recognizes the merits of the recommendations and will explore the feasibility of applying these methods in its work. As an initial step in this direction, RES is examining key aspects of formal decision-making approaches in its performance-based regulation work. RES will provide the ACRS with updated information as it becomes available.”

ACNW will also be kept informed as information becomes available.

Recommendation 3: We recommend that RES continue to develop collaborative arrangements with other government organizations, such as those outlined in the RES memorandum of understanding (MOU) on multimedia environmental models. Additional collaboration with other organizations, including industry organizations and organizations based in foreign countries, is important.

Response: RES is continuing to pursue interagency cooperation through the MOU. RES staff are major contributors to three working groups and NMSS and CNWRA staff have joined this effort with representatives to four working groups. Efforts have begun to re-start several international bilateral information exchange programs but significant progress in this area has not yet been made.

Recommendation 4: We continue to recommend that the NRC expand its HLW programs to have a long-term anticipatory research component.

RES is developing a section for the Radionuclide Transport in the Environment Research Program plan on anticipatory HLW research. This work will be prioritized according to the needs of the HLW program and implemented as appropriate.

Recommendation 5: We also recommend that RES consider the following suggestions made by experts at the ACNW workshop:

- RES should identify existing waste sites, an examination of which could provide useful information. RES should develop cooperative agreements with interested organizations and the owners of the identified sites to obtain field data from those sites to refine and test conceptual models.
- The development of improved sampling and monitoring techniques and the testing of sensors and related instrumentation could be performed at the identified sites.

Response: RES includes the use of field sites in designing research to obtain data for use in the development and testing of both process and performance assessment models. When appropriate this includes contaminated and waste disposal sites. Unfortunately, the conditions

at many waste sites, including the existence of confounding variables, prevent their effective use as research sites because the effects of the processes under study cannot be isolated. Examples of contaminated sites that have been used in current research projects include the SDMP sites sampled in studies of the degradation of slags and the Naturita site (cleaned up by DOE), chosen to demonstrate the feasibility of modeling the effect of complex chemical interactions on uranium movement at a contaminated site.

I thank you for your thorough and thoughtful review.

Sincerely,

/RA/

William D. Travers
Executive Director
for Operations

cc: Chairman Meserve
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DIVISION OF SYSTEMS ANALYSIS & REGULATORY EFFECTIVENESS
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ITEM: 4#3 **RES#: 2001320**

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COMMISSION'S WASTE SAFETY RESEARCH PROGRAM

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