

June 29, 2001

The Honorable Richard A. Meserve
Chairman
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Chairman Meserve:

**SUBJECT: RISK-INFORMED, PERFORMANCE-BASED REGULATION OF WASTE
MANAGEMENT AND DECOMMISSIONING**

Sufficient tools and experience now exist in the application of a risk-informed, performance-based (RIPB) regulatory process to consider its future direction. The development of the proposed RIPB rule for Yucca Mountain offers an opportunity to extend the concept of risk-informed regulation to a broader scope of radioactive waste management activities. A goal of the RIPB regulatory process is to better ensure nuclear safety while simplifying the licensing and license termination processes. This goal is consistent with the Commission's probabilistic risk assessment (PRA) policy statement that the agency should increase its use of PRA.¹

RECOMMENDATION

The Committee recommends that decommissioning and waste management regulations that are not based on radiation dose be reviewed and that a phased approach be taken to remove impediments to the implementation of RIPB regulation.

DISCUSSION

An important advantage of the proposed Yucca Mountain RIPB regulatory model is that it uses a single radiation standard as the primary basis for assuring public safety. The broader implementation of this concept carries the promise of eliminating conflicts among multiple regulations. For example, the entombment option for nuclear facilities may be compromised because of the need to comply with two inconsistent regulations: one establishing a concentration limit, the other a dose rate standard. The precedent set in the proposed Yucca Mountain RIPB model is that a concentration limit is not necessary to protect the health and safety of the public. The Committee believes this position is correct from a risk perspective. In particular, if the potential radiation dose rate to an individual from a radiation source cannot exceed a safe dose rate standard (e.g., 15 mrem/year), then no further protection is necessary. Concentration per se is not a valid measure of risk. Although the present NRC regulations

¹Use of Probabilistic Risk Assessment Methods in Nuclear Regulatory Activities; Final Policy Statement Federal Register Vol 60, No.158, 42622-42628 (August 16, 1995).

based on radionuclide concentrations provide for public safety, they are not concordant with RIPB regulation.

We believe a move toward harmonizing all NRC waste disposal regulations using a common risk-informed perspective would be a major step forward for the agency in implementing an RIPB regulatory philosophy. In the opinion of the Committee, the benefits would be many. The agency would demonstrate its sincerity in adopting RIPB practices by its willingness to change regulations where necessary.

The adoption of a risk-informed standard would potentially apply to many areas of waste management such as the decommissioning of power and research reactors (including entombment and rubbleization); decommissioning of nuclear fuel fabrication facilities, commercial nuclear material treatment and handling facilities, and uranium conversion plants; disposal of sealed sources; and other types of waste management and disposal activities.

Movement toward risk-informed regulation for waste management and decommissioning would necessitate a critical review of existing regulations, especially those based on radionuclide concentrations. It would also require the promulgation of new regulations. The Committee believes that a phased approach would be the best strategy for implementing conversion to an RIPB regulatory process.

Sincerely,

/RA/

B. John Garrick
Chairman