



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

September 3, 1998

The Honorable Shirley Ann Jackson
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chairman Jackson:

**SUBJECT: ADVISORY COMMITTEE ON NUCLEAR WASTE COMMENTS ON NRC'S
 DRAFT 10 CFR PART 63 AND REVISION 0 OF THE TOTAL SYSTEM
 PERFORMANCE ASSESSMENT ISSUE RESOLUTION STATUS REPORT**

During the 102nd ACNW meeting, July 20-22, 1998, the NRC staff briefed the ACNW on its draft regulatory framework for geologic disposal of high-level waste (HLW) at Yucca Mountain. Presentations included an overview of the site-specific implementing rule for HLW disposal, draft 10 CFR Part 63, "Disposal of High-Level Radioactive Waste at Yucca Mountain, Nevada," (Reference 1) and Rev. 0 of the Total System Performance Assessment (TSPA) Issue Resolution Status Report (IRSR). The Committee was sent a copy of portions of the draft rule before the meeting and has since received a copy of the complete draft rule. Consistent with the Committee's commitment to support the agency's effort to move from deterministic regulations toward risk-informed, performance-based regulation (Reference 2), this letter is one in a continuing series of letters on the subject of NRC's HLW regulatory framework.

Based on the briefing and materials provided, the ACNW compliments the staff on its progress toward development of a risk-informed, performance-based rule. The Committee considers the staff's approach to be consistent with previous ACNW advice on multiple barriers and risk-informed, performance-based regulation. This should lead to an effective and efficient rule.

Below are our specific observations and recommendations:

Observation 1: The draft rule requires the Department of Energy (DOE) to use multiple barriers, both engineered and natural, and to demonstrate how this requirement is satisfied. The demonstration is to include an identification of the barriers, a description of the capability of each barrier to isolate waste, accounting for uncertainties, and the technical basis for the description of the capabilities.

Recommendation 1: The ACNW recommends that the staff proceed apace with issuing the draft rule for public comment. We are pleased that the draft rule requires compliance with an overall dose standard and allows design and analysis flexibility in complying with the standard for both pre- and post-closure performance of the repository. This kind of regulatory flexibility has been absent in the past. The ACNW commends the NRC staff for taking this approach.

Observation 2: The staff indicated that details of what NRC expects from DOE in its demonstration of multiple barriers will be contained in the IRSRs, and eventually the Yucca Mountain Review Plan, rather than in the draft rule itself. This will allow both NRC and DOE greater flexibility.

Recommendation 2: The ACNW recommends that the staff convey clearly in its TSPA IRSR guidance the information that DOE should provide in its analysis to ensure transparency of the contribution of individual barriers. In addition, we encourage the staff to convey in all the IRSRs the information needed for NRC to make a regulatory finding. The ACNW agrees with the staff that the regulation should not contain too much specificity, as codes, capabilities, etc., and will continue to evolve.

Observation 3: The acceptance criteria and review methods were developed for many of the Rev. 0 IRSRs before the rule was drafted.

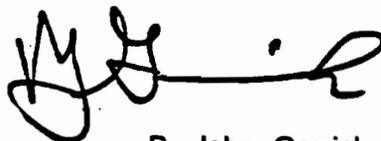
Recommendation 3: The Committee recommends that the staff continue to refine the review methods, technical basis, and acceptance criteria in the IRSRs to ensure that a strong nexus exists between the IRSR requirements and the draft rule. We encourage the staff to continue efforts to codify IRSR results in future rulemaking initiatives.

Observation 4: The staff has indicated that it may use importance analyses or other methods to expose, in a transparent manner, the impact that individual barriers have on dose. Transparency involves decomposing the analyses to reveal contributors to dose, and is difficult to achieve unless a genuine and deliberate effort is made to understand the contribution from individual barriers including the associated uncertainties.

Recommendation 4: We recommend that the staff continue to develop methods and techniques to ensure modeling transparency. The Committee encourages the staff to push aggressively to develop these techniques. This will enhance the transparency of NRC's review with respect to the evaluation of the effectiveness of DOE's multiple-barrier approach. The staff should also develop acceptance criteria that articulate the requirements for DOE's analysis.

We compliment the staff's effort to develop a risk-informed, performance-based rule and will continue to work with the staff throughout the development of the draft 10 CFR Part 63 rule and its supporting review guidance.

Sincerely,

A handwritten signature in black ink, appearing to read 'B. John Garrick', with a long horizontal flourish extending to the right.

B. John Garrick
Chairman

References:

1. U. S. Nuclear Regulatory Commission, 10 CFR Part 63, "Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, Nevada," Draft Predecisional.
2. Advisory Committee on Nuclear Waste, NUREG/BR-0050, "1998 Strategic Plan."

