



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

December 21, 1989

The Honorable Kenneth M. Carr  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Chairman Carr:

SUBJECT: COMMENTS ON PROPOSED REVISIONS OF EPA'S HIGH-LEVEL WASTE STANDARDS

During its 15th meeting on December 20, 1989, the Advisory Committee on Nuclear Waste met with the NRC staff and representatives from the Department of Energy (DOE) and the Environmental Protection Agency (EPA) for additional discussions pertaining to the Standards for a high-level waste (HLW) repository currently being revised by EPA. We previously discussed this matter with a representative from EPA during our 14th meeting on October 11-13, 1989 and the ACNW or its predecessor, the ACRS, have had continuing interactions with the NRC staff on the matter over the past several years. We also had the benefit of the documents referenced.

On the basis of these discussions, we continue to doubt that compliance with the EPA standards can be demonstrated for a specific repository site, even recognizing the caveats included in the standard, such as the "reasonable assurance" phrase that allows for certain flexibilities in the interpretation of probabilistic analyses. If the construction of a Complementary Cumulative Distribution Function clearly demonstrates compliance with the EPA Standards, then the need for interpreting the "reasonable assurance" phrase is removed. If, as is more likely, demonstration of compliance is not clear, it will be necessary to have a definitive understanding of how the NRC staff plans to interpret the wording in the EPA Standards that:

Proof of the future performance of a disposal system is not to be had in the ordinary sense of the word in situations that deal with much shorter time frames. Instead, what is required is a reasonable expectation, on the basis of the record before the implementing agency, that compliance with 191.13 (a) will be achieved.

The preferred alternative in the plan as outlined in SECY-89-319 for implementation of the EPA Standards calls for the NRC staff to resolve the major problems concerning implementation of Section 191.13 (a) through rulemaking. It is not clear to us, however, how

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such rulemaking would resolve the uncertainties in applying probabilistic techniques, nor is it clear that this method represents the best approach for coping with problems that are, in the main, a result of what we consider to be an unacceptable set of standards.

We believe that the NRC staff in SECY-89-319 has not provided the Commission an adequate range of alternatives. One such alternative that we recommend would be that the Commission object to the EPA Standards on the basis that:

1. There are no obvious ways for demonstrating compliance of any specific repository site with the Standards. In this sense, the Standards may be unrealistic.
2. The Standards are also overly stringent and inconsistent. There is strong evidence that they will be wasteful of resources with little commensurate benefit.

The EPA Standards are internally inconsistent, in that lower level quantitative limits are more stringent than upper level qualitative goals. Thus far we have been provided no information to convince us that less stringent Standards would not provide adequate protection of the public health and safety. The NRC subsystem performance criteria have the potential for imposing even more stringent requirements on the repository.

While EPA has attempted to justify the added conservatisms as a means for allowing for uncertainties, we fail to understand the logic of this approach. Resolution of the problems of uncertainties would best be pursued through site characterization and performance assessment. The latter process, in particular, can be used to reveal where and to what degree uncertainties exist, and can provide guidance on where additional and better data are needed.

To resolve these issues, we recommend that the NRC staff be more aggressive in dealing with EPA. The task of the NRC staff, as we interpret it, should be to ensure that the EPA Standards are scientifically sound, consistent, and readily subject to interpretation and implementation. With the EPA in the process of revising their Standards, and DOE having announced an overall reassessment of its HLW program, this would appear to be an opportune time for the NRC to undertake these initiatives.

We will be pleased to discuss these matters with you in additional detail, if you desire.

Sincerely,  
  
Dade W. Moeller,  
Chairman

References:

1. SECY-89-319, "Implementation of the U.S. Environmental Protection Agency's High-Level Waste Disposal Standards," dated October 17, 1989
2. EPA Working Draft 1 of 40 CFR Part 191, dated June 2, 1989, "Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes"
3. 40 CFR Part 191, "Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes"