

D851016

Honorable Nunzio J. Palladino
Chairman
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Dr. Palladino:

SUBJECT: ADDITIONAL ACRS COMMENTS ON THE EPA STANDARDS FOR A HIGH-LEVEL
 RADIOACTIVE WASTE REPOSITORY

During its 306th meeting, October 10-12, 1985, the Advisory Committee on Reactor Safeguards met with you and the other Commissioners to offer comments regarding the Environmental Protection Agency (EPA) Standards for a High-Level Radioactive Waste (HLW) Repository, which was the subject of our report to you dated July 17, 1985. In response to the request made during this meeting, we are pleased to submit the following additional comments on the EPA standards which were published as a final rule on September 19, 1985. These standards will apply to the facilities being proposed by the Department of Energy and must be met in the associated licensing review conducted by the NRC.

Our purpose in writing you at this time is to highlight the fact that the standards being promulgated by the EPA are unreasonably restrictive and contain serious deficiencies. This will undoubtedly introduce unnecessary obstacles into the licensing process for an HLW repository, with only minimal benefit to the public health and safety. Our justifications for these comments are outlined below.

Development of these standards has been under way within the EPA since December 1976. During this period, the ACRS and its Subcommittee on waste management were briefed periodically by EPA representatives, and at each such meeting comments and suggestions were discussed on an informal basis. In early 1983 the EPA submitted the then-current draft of the proposed standards to its Science Advisory Board (SAB) for review. Detailed comments by the High-Level Radioactive Waste Disposal Subcommittee of the SAB included the following:

The Subcommittee recommended "that the release limits specified in . . . the proposed standards be increased by a factor of ten, thereby causing a related tenfold relaxation of the proposed societal objective (population risk of cancer)."

The Subcommittee recommended "that use of a quantitative probabilistic condition on the . . . release limits be made dependent on EPA's ability to provide convincing evidence that such a condition is practical to meet and will not lead to serious impediments, legal or otherwise, to the licensing of high-level-waste geologic repositories. If such evidence cannot be provided, we recommend that EPA adopt qualitative criteria, such as those suggested by the NRC."

Of particular concern to the SAB Subcommittee, in terms of meeting the

conditions of the standards, was the fact that containment requirements should be such that the cumulative releases of radionuclides from a repository to the accessible environment for 10,000 years after disposal, from all significant processes and events that may affect the disposal system, shall:

"have a likelihood of less than one chance in 10 of exceeding" the quantities (given in an accompanying Table); and

"have a likelihood of less than one chance in 1,000 of exceeding ten times" these same quantities.

The SAB Subcommittee also recommended specific changes in the probabilistic aspects of the draft standards to help make it more practical for an applicant to make a case that the quantitative probabilistic criteria had been met.

Although the wording in the standards includes the statement that "performance assessments need not provide complete assurance" that these requirements will be met, there remains the basic fact that the standards, as published, are far too restrictive. In our opinion, the establishment of overly restrictive standards, relieved by leniency in their implementation, is not an appropriate approach. The proper approach would have been to develop reasonable standards that could have been more definitively enforced.

The problems cited above were but a few of those observed and commented upon by the SAB Subcommittee. Additional problems in Working Draft No. 6 of the EPA standards were discussed with an EPA representative during a meeting of the ACRS Subcommittee on waste management on June 18 and 19, 1985. These included the following:

The standards, as published, do not appear to be internally consistent. Although the latest data were used for estimating the biological effects of various radionuclides, the associated dose limits for individual body organs were not based on appropriate risk criteria.

The health risks associated with the release limits specified in the standards are much lower (by factors of a thousand or more) than the risks considered acceptable by the EPA for other environmental stresses, such as hazardous toxic chemicals.

The overly restrictive standards may result in the rejection of some sites proposed for an HLW repository that otherwise might be acceptable.

As indicated above, the standards will definitely complicate the processes, both technical and legal, of demonstrating that a given site is acceptable.

We realize that both the NRC Staff and the DOE Staff have accepted the EPA standards. Although we can understand, to some degree, the desires of both staffs to complete this step, we are troubled by the serious deficiencies that exist in the standards. The compromises that have been made at this stage will lead to extended delays and an uncertain outcome in the licensing process for an HLW repository, with only slight

benefit to the public health and safety.

Although the ACRS could undertake a more detailed review and critique of the EPA standards, we believe that the SAB Subcommittee has already done this in a professional manner. A copy of the Executive Summary of their report is attached for your information.

We hope this letter is helpful. Although we realize that the EPA standards have been published, we believe that they contain such serious deficiencies that the NRC should take prompt action to voice these concerns.

Sincerely,

David A. Ward
Chairman

Attachment:

Section II, "Executive Summary" of Report on the review of Proposed Environmental Standards for the Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes (40 CFR 191) by the SAB, EPA, dated January 1984

References:

1. Letter from Herman E. Collier, Jr., Chairman, EPA High-Level Radioactive Waste Disposal Subcommittee, to Mr. William D. Ruckelshaus, Administrator, EPA, dated February 17, 1984 transmitting Report on the review of Proposed Environmental Standards for the Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes by the High-Level Radioactive Waste Disposal Subcommittee, Science Advisory Board, EPA, dated January 1984
2. SECY-84-320, "NRC Staff Comments to EPA on the SAB Report on Proposed EPA Standard for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Waste (40 CFR Part 191)," dated August 9, 1984, including Working Draft No. 8, Final 40 CFR 191, Subchapter F - Radiation Protection Programs, dated July 19, 1985
3. SECY-85-272, "Report on the EPA's Environmental Standards for High-Level Radioactive Waste Disposal," dated August 13, 1985
4. Memorandum from R. E. Browning, Director, Division of Waste Management, to R. F. Fraley, ACRS, Subject: NRC Staff Views on Implementation of the EPA HLW Standards, dated September 11, 1985

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