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DEC 16 1985

Mr. Ralph Stein
Director
Engineering and Licensing Division
Office of Geologic Repositories
Office of Civilian Radioactive
Waste Management
U. S. Department of Energy
Washington, DC 20585

Dear Mr. Stein:

This is in reply to your letter of August 19, 1985 in which you summarized the Waste Acceptance Process (WAP). You stated that the purpose of the WAP is to formalize the activities within the Office of Civilian Radioactive Waste Management to ensure that waste forms will be acceptable at any potential repository. The WAP provides excellent opportunity for coordination between projects, headquarters and the producers.

As you point out in your letter, waste form production from the Defense Waste Processing Facility (DWPF) and the West Valley Demonstration Project (WVDP) will occur prior to selection of the first repository site and submission of the license application to the U. S. Nuclear Regulatory Commission (NRC). This is a fundamental concern for NRC because all of the WVDP High Level Waste and a significant fraction of the Defense High Level Waste at the Savannah River Plant will be committed to waste forms before the first repository is licensed. We note that the enclosure, "Description of the Waste Acceptance Process", acknowledges that "for the DWPF and WVDP, start-up prior to repository licensing involves a degree of risk that the waste will indeed be [un]acceptable for disposal" (page 6, third paragraph, third sentence).

We understand from your letter that it is U. S. Department of Energy's (DOE) intent to design the WVDP and DWPF waste forms to perform satisfactorily at any of the sites under consideration for the first repository. We believe, however, that a number of activities should be completed before the design the of waste form is finalized. Some examples of these are:

1. Establish a Quality Assurance Program.

2. Allocate performance, i.e., specify the design objectives of the waste package and its component parts. The design objectives should include the environmental conditions that the waste package will experience and the design degradation rates of the individual components.

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3. Select a design reliability target for the waste package and its component parts. This should be supported by an analysis of the consequences of excessive rates of degradation from some fraction of the waste packages.

4. Specify a method for assessing the performance of the waste package and its component parts.

5. Identify the data base required to support the performance assessment and the data base that exists.

6. Identify a plan and a schedule for acquiring additional data that may be needed. This plan should clearly identify which DOE organization is responsible for the acquisition of the data.

The NRC cannot make a final determination on the extent to which the performance objectives specified in 10CFR60.113 are met until all the waste package data and site-specific environmental data are submitted in the license application. We realize that completion of the above activities before finalizing design of DWPF and WVDP waste forms is probably not consistent with current production schedules.

In addition, stronger involvement of the NRC early in the prelicensing period may serve to further minimize the risk of DWPF and WVDP waste forms failing to be acceptable at a repository. In the past [letter from John Martin (NRC) to Mr. Thomas Hindman, Jr. (DOE), dated November 4, 1982, Enclosure 1] we raised two areas of concern related to tests supporting glass as a waste form and glass as part of the engineered barrier system from NRC. We need to know the waste form properties, even if no credit is taken for it, so it can be substantiated that the waste form will not degrade the waste package. What tests have been performed on the borosilicate glass and what are the results of those tests on waste form properties? Also we have stated the need to review preliminary waste package performance assessments, the specifications for the solidified product, and sampling procedures including a quality control plan for production and sampling [letter from T. Clark (NRC) to Dr. W. H. Hannum (DOE), dated February 5, 1985, Enclosure 2].

We believe that completion of the above activities (items 1-6) and early interaction with NRC will reduce significantly the risk that the proposed waste forms will be found unacceptable. We have some concerns that the level of interaction between NRC and DOE currently envisioned may not be timely. We would like to meet with you to discuss in more detail the Waste Acceptance Process and the mechanism for further NRC interaction early in the process. Please contact Mr. William Lilley ((301) 427-4798) to arrange a suitable time and agenda.

*See previous concurrence page.

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We appreciate you informing us about the WAP. We look forward to meeting with you within the near future to settle more specifically where in the process, and in what way, NRC will become involved.

Sincerely,

"ORIGINAL SIGNED BY"

Hubert J. Miller, Chief
Repository Projects Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosures:
1. Letter from John Martin, NRC to Mr. Thomas Hindman, Jr., DOE November 2, 1982
2. Letter from T. Clark, NRC to Dr. W. H. Hannum, DOE February 5, 1985

*See previous concurrence page.

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