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WM Dir. ✓
WM Dep. Dir.
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WMHT ✓ ..... WMHL M.B.
WMUR ..... Others .....
Cpdr

Department of Energy
Washington, D.C. 20545

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WM Project 11
Docket No.
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LPDR
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(Return to WM, G23 SS)

Mr. J. Lefevre, Director
Radioactive Waste Management
Commissariat a l'Energie Atomique
Fontenay-aux-Roses
Paris, France

Dear Mr. Lefevre:

At our meeting in Washington on August 27, 1982 I agreed to respond to your proposal concerning the possibility of taking AVM vitrified product for storage testing and demonstration in the Climax facility. We have had detailed discussions and consideration of that possibility within the Department of Energy (DOE) in the interim. Additionally, decisions have been made within the Administration concerning our budgets in the next few fiscal years. The result of these deliberations has been a decision to work toward shutting down the Climax experiment and facility by the end of September 1984.

Even if that decision could be delayed and the Climax program were to be continued, we would first have to consider adding to the Climax facility the canisters of glass and other waste forms that we have on hand from our past research and development efforts. This would be done for two reasons. We cannot justify the cost of a program for an AVM product storage demonstration for the benefits to be gained. The sensitivities throughout the United States concerning the waste repositories site selection process makes our consideration of accepting foreign waste into a repository evaluation program injudicious at this time.

We feel that there is little more to be gained technically from straightforward storage of the AVM canisters. Your Marcoule storage area provides the handling and heat transfer information one might need. Our present spent LWR fuel storage facility at Climax gives us similar information, as well as geologic information, from larger and more intense sources, though of course they are fewer in number. In our situation, we do not have need for a waste storage area as you have at Marcoule since we do not have a routine, continuous production of waste canisters as you do. Also, we are concerned with disposal, not storage of wastes.

We are also concerned that the goodwill your Marcoule storage area has produced for both of us could be jeopardized from the inevitable comparisons that would be made of the test facility storing smaller, lower heat producing AVM product vs the present test containers containing LWR fuel. Your Marcoule facilities have served the nuclear program well as a simple, understandable and accessible demonstration of the ability to safely produce, handle, and store vitrified high level waste.

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However, we are very interested in evaluating the AVM product per se and would like to have you consider the possibility of developing a joint program to do so. If an AVM sample of vitrified waste were to be transported to the Pacific Northwest Laboratory, they could sample and test that AVM product as part of their Materials Characterization Center program. Enclosure 1 outlines such a program.

A second phase of the discussions with you and Dr. Teillac was concerned with possible CEA/French participation in the Three Mile Island program. We have listed in Enclosure 2 four possibilities or types of possible involvement in that program. Though the first one was discussed in our meeting, I was not sure if a definite position had been taken by you and Dr. Teillac. I thought it worthwhile to repeat it with a bit more specificity than we discussed.

This leaves us with our response to your proposed draft Memorandum of Understanding (MOU). We would consider the above discussed programs for inclusion under Article 2 of the MOU and according to Articles 3 and 4.

As discussed in our meeting, we have reviewed your draft of a MOU. A revised draft is being returned separately and with it will be a recitation of the reasons for the drafting modifications made by our General Counsel and the Assistant Secretary of International Affairs.

We look forward to "damping the curve" for this iterative process and reaching agreement soon on a MOU and cooperation in the field of waste management.

Sincerely,

Michael J. Lawrence for

Franklin E. Coffman
Acting Director
Office of Terminal Waste Disposal
and Remedial Action
Office of Nuclear Energy

2 Enclosures

cc: B. Barre, Nuclear Attache

bcc: J. Martin, NRC

Enclosure 1

Characterization of AVM Borosilicate Glass

Scope

A sample of fully radioactive borosilicate glass from the French AVM process will be shipped by France/CEA to the Pacific Northwest Laboratory (PNL). The U.S./DOE will arrange for characterization of the nuclear waste-containing borosilicate glass in the shielded analytical facilities of the Materials Characterization Center (MCC).

Goal

Measure properties of the solidified nuclear waste product from the world's first production facility for the vitrification of HLW. It is anticipated that the characterization conducted under this proposal will have the very positive result of demonstrating that the properties of the product from the production facility are very close to those predicted by laboratory tests.

Procedure

A representative AVM sample will be shipped to the Pacific Northwest Laboratory. Some nonradioactive samples of certain materials for use as control samples will also be required. The CEA will be responsible for all of the shipping arrangements and costs.

Characterization of the sample by the MCC will be completed within six months after it arrives at PNL, except for some leach testing which will continue for up to two years. Characterization could include:

- Chemical and radiochemical analysis of the borosilicate glass.
- Crystallographic analysis of the borosilicate glass.
- Leach testing of the borosilicate glass by several different methods.
- Analysis of the devitrification behavior of the borosilicate glass.

All measurements and analyses will be done by the Materials Characterization Center using standardized techniques. Control specimens will be used as required to establish the relationship of the properties of the sample with predicted properties.

The cost of the characterization at PNL is estimated at $100K.

Possible Areas of French Participation in the TMI Program

1. France/CEA could take one or more of both the EPICOR-II and Submerged Demineralizer System liners for research and development (R&D) purposes to demonstrate safe and effective methods for treating and disposing of abnormal waste products resulting from accidents. Such R&D could include a demonstration of the AVM vitrification process to immobilize the resins in the liners.

2. France/CEA could take individual pieces of the damaged reactor core for R&D purposes including the development of generic safety data of value to the entire nuclear community. The information developed from the examination of the reactor core could be useful in refining accident analysis methods; developing future licensing criteria; mitigation of possible future accidents; and improving reactor operation and maintenance.

3. France/CEA could provide defueling equipment once the specifications and requirements are defined. This could include tools for handling, cutting and lifting reactor core internals. Mockups, simulators and instrumentation could also be provided if needed.

4. France/CEA could provide trained, experienced personnel who could assist in the cleanup. Individuals desired would have training and experience in such areas as decontamination, radwaste treatment, health physics, accident recovery or reactor maintenance. It might be necessary, or appropriate, to provide personnel trained in the operation of any material which is furnished.