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PETITION RULE PRM 60-4
(55 FR 51732)

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United States Nuclear Regulatory Commission
Docketing and Service Branch
Washington, DC 20555

OFFICE OF SECRETARY
DOCKETING AND SERVICE
BRANCH

Re: Definition of the Term "High-Level Radioactive Waste"
Docket Number PRM-60-4

Dear Sirs:

As noted in 55 FR 51732, the states of Oregon and Washington have petitioned the Commission to alter the definition of high-level waste (HLW), to establish a process to determine whether particular defense reprocessing wastes fit that definition, and to place certain restrictions on the solidification of wastes which do not meet the proposed definition. The purpose of these comments is to urge the Commission to reject the petitioners' proposal because it is unnecessary, and, indeed, is not in the best interests of the petitioners' constituents.

SUMMARY OF PETITIONERS' PROPOSAL

The petitioners' propose that the Commission do the following:

- 1) Redefine HLW so that removal of the largest technically achievable amount of radioactivity from any waste will render it non-HLW.
- 2) Establish a process to determine whether defense HLW meets that definition, specifically:

One year before processing waste from any tank, DOE must provide data on the physical characteristics of the waste, its radiochemistry (e.g., determination of the radionuclide inventory), its volume and the anticipated change in volume due to processing, a flowsheet for each treatment process, and any formulations for grouting residues from treatment.

Then, at least six months before processing of waste in any tank is to begin, DOE must either obtain a license for processing, or a waiver from the Commission based on DOE's demonstrating that it will remove the greatest amount of radioactivity from the waste which is technically achievable. The Commission must agree that the separation processes to be used are technically correct, proven, cost effective, and state of the art. Shallow land disposal shall

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be allowed only for the residues of such processing.

3) Establish a limit on the heat from residual activity in the waste plus the heat of grouting to ensure that grout meets the long-term stability criteria for Low-Level Waste.

GENERAL CONSIDERATIONS

The specific comments below reflect the following general considerations.

- Many of the waste tanks in the DOE complex are nearing or have exceeded their design life. Thus, any proposed changes to disposal regulations should not inhibit the expeditious immobilization these wastes.
- While the plethora of panels and committees now looking at all aspects of DOE's waste management programs may prevent mistakes, they are also impeding progress. The Commission should decide the worth of the petitioners' proposals by balancing any incremental safety factor added by the additional review against the delay in stabilizing the waste. Review of the proposed procedural steps indicates that the only thing certain to be accomplished is further aging of the waste tanks, and thus further diminution of their safety.

SPECIFIC COMMENTS ON PROPOSED REDEFINITION OF HLW

- The proposed redefinition is unnecessary.
The Commission has already taken a substantial step in the right direction by deciding that any waste with activity greater than that defined as the upper limit for Class C must be disposed of in a repository, or in another manner acceptable to the Commission. This salutary approach looks toward the risk associated with the waste, rather than the source. This forces DOE to allocate resources to handle the hazards, rather than to waste further time fruitlessly searching for ways to remove more and more activity from one part of the waste. As the Commission noted in its amendment of 10 CFR 61 (53 FR 17710), "the Commission sees little practical importance or significance in proceeding with a precise definition of HLW."
- The proposed definition will not increase the safety of disposal of the waste.
Some of the wastes of concern to the petitioners appear to have been converted to mineral forms in the storage tanks at Hanford. It may well be that the only possible method to mobilize and reduce the activity of this material is to treat it with strong acids. However, this would compromise the containment afforded by the waste tanks. Therefore, strict application of the proposed definition would potentially force DOE to perform extremely dangerous actions, with potentially grave consequences to the petitioners' constituents.

The proposed definition also could be counterproductive in another way. In order to comply with the "as low as technically achievable" standard, DOE might be forced to treat the waste with chemicals which would not be compatible with immobilization processes for the radionuclides. As an example, arsenophosphates are excellent complexing agents for technetium, and are capable of removing even trace amounts from wastes. However, phosphates are not compatible with borosilicate glasses. As another example, alkali tetraphenylborate salts are excellent means of removing cesium from even concentrated alkaline wastes; however, they are not compatible with crystalline ceramic waste forms.

SPECIFIC COMMENTS ON PROPOSED PROCESS

• The waste tanks at Hanford have already exceeded their design lifetime.
There are major concerns about the safety of the waste in the tanks at Hanford. Several panels have been established to look at different facets of the problem. Although no single concern may be reason enough for decisive action, the citizens of Washington and Oregon are ill-served by any process which needlessly delays the immobilization of the waste. And yet, the petitioners propose to add two new steps to the tortuous path being followed toward eliminating this hazard to their constituents, which will not add to the safety of disposal.

• Is the information on the radionuclide inventory of the waste in the tanks at Hanford inadequate?
One of the reasons the petitioners advance as motivation for their proposal is their opinion that the radionuclide inventory of the waste in the tanks at Hanford is inadequately known. Unfortunately, the petitioners never come to grips with the question of "inadequate for what?". It is a fact that the contents of the waste tanks at Hanford have not been as thoroughly characterized as those at Savannah River. However, the contents of those tanks can be bounded well enough to judge the relative safety of various disposal options, and to direct DOE toward an environmentally safe solution. The petitioners would do better for their constituents if they attempted to move DOE to take this approach and then implement the solution adopted in a conservative manner, one which would be relatively immune to the effects of the uncertainties in waste characterization.

SPECIFIC COMMENTS ON LIMITS ON HEAT OF FORMATION OF GROUT

While I disagree with the petitioners about the definition of HLW, it appears that the concept of limits on the heat of formation of grouts are good. However, it appears that the appropriate place for this limit would be in a plan for a solid waste processing facility, and, thus, should be included in its "Process Control Plan." I suggest that the Commission consider inclusion of this concept in its guidelines for preparation of the "Process Control Plan."

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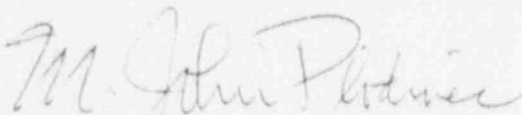
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In closing, I strongly urge the Commission to serve the citizens of Oregon and Washington better than those who should be representing them. The proposals advanced will not benefit those citizens, and by slowing progress toward immobilization of the wastes at Hanford, actually places those citizens at greater risk.

Respectfully,

A handwritten signature in cursive script that reads "M. John Plodinec". The signature is written in dark ink and is positioned above the printed name.

M. John Plodinec