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June 6, 1996

U.S. Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, D.C. 20026-3786

RE: Personal comments on "Programmatic Environmental Impact Statement on Storage and Disposition of Weapons Usable Fissile Materials."

I am writing to voice concerns I have after being informed that the above PEIS includes burning weapons-grade product in reactors as a disposal option. I am faxing this document to your office in order to meet the filing deadline and will mail a printed copy.

I have not reviewed the PEIS, but would like to include my comments, as follow, into the official record. Due to the nature and scope of the issues involved, I also request that the Congressional Record of the Subcommittee Hearing, cited below, be included as an addendum to this comment document; specifically as the Record's testimony may be relevant to any proposal involving a change in the current status of the WPPSS #1 reactor facilities at the Hanford Reservation.

I also would take this opportunity to request (1) that a copy of the above PEIS document series be sent to me at the above address, and (2) that I be included on the mailing list to receive all future documents relating to this project.

If you review the Department's records, you will see that in the 1980's I was a consultant to several health and state agencies about several projects at the Hanford Reservation. In that capacity I testified before state legislative committees and working groups, advised public health departments, provided research services for citizens' forums and intervenors, and testified before a Congressional Sub-Committee about converting the WPPSS-1 nuclear generating plant.

While I agree with the Encapsulation option for *short term* storage, followed by Deep Storage disposal once the technology has been proven; I very strongly object to "processing" this new inventory of fissile material in power reactors because of the current lack of technical knowledge, the history of poor operational safety in this area of nuclear energy, and the creation of additional low-level and high-level waste streams that such a project would incur. 1/08.03.01

F-050

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternatives. However, NEPA requires that DOE look at all reasonable alternatives and, therefore, reactor burning must be considered. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Several years ago I was asked to testify before a Congressional Sub-Committee about a proposal to convert the WPPSS Unit #1 at the Hanford Reservation [1/]. That project was a poorly-conceived plan to salvage the canceled WPPSS #1 power generator at taxpayer's and ratepayer's expense by taking experimental theory and scaling it up as a full-scale operational HEU testbed despite the Department's own peer review finding of its own in-house technical feasibility studies that warned of "...an outstanding safety issue, the problem of in-vessel re-criticality." [2/].

The idea of burning a MOX fuel mixture, while certainly achievable, is not advisable for several reasons. Although those reasons are valid regardless of where the project is sited, a siting of the reactor option at the Hanford Reservation would pose *additional* hardship on the populations and environment of the Northwest: 1/08.03.01 cont.

1. In order to fabricate MOX fuel, the fissile product(s) must be transformed from their current states, formulated to the desired level of enrichment, stabilized and then fabricated into new fuel assemblies. This process alone increases the probabilities of adding to the current MUF inventory and poses security risks during several stages of processing.

2. Manufacture of MOX fuel assemblies also will produce new waste streams that will increase the quantity of wastes by several times the volume currently associated with these same inventories in their present states. Although much of this waste will be "low level," these processes will necessarily also generate a new volume of TRU wastes, with the special handling required by those TRU waste streams. Our waste management efforts should be focused on reducing the *current* inventory of hazardous and/or radiologic wastes; not on a search on how to create new wastes. 2/06.01.08

3. In the past, projects such as these have depended on the use of new reactors or the modification of existing facilities to burn the new fuels. The time needed to complete construction of new facilities, or the modification of an existing plant, would be much greater than the time needed to construct an encapsulation facility and begin the vitrification/encapsulation process. If the United States sincerely wants to remove plutonium from the active SNM inventory, then the Encapsulation alternative would accomplish this goal much faster and at a greatly-reduced cost than would the reactor option. 3/08.03.01

4. Cost, of course, is yet another factor that must be considered when deciding the disposal options. The MOX-fueled reactor plan would undoubtedly require an outlay of several billion dollars to achieve the goals of even a mediocre "burning" option. In my experience, based on several years of research, the Department has *never* completed a significant project of similar scale within the timeline and budget estimates stated in its' studies, nor those specified in contracts with its' vendors. 4/07.01.00

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06 01 08 Comment Number 2

The environmental impact of the MOX fuel waste streams is presented in Chapter 4 and Appendix H of this PEIS.

08 03 01 Comment Number 3

The Department of Energy acknowledges the commentor's support for the Immobilization Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

07 01 00 Comment Number 4

Cost data, along with technical and schedule data, was provided in a Technical Summary Report for disposition beginning in late July 1996. This information will be integrated into DOE's decisionmaking process.

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5. Transportation issues also must be examined on several levels: First, based on the "per-tonne-mile" costs for shipping the MOX components to the fabrication facility, and then shipping the assemblies to the reactor; and then at a greatly-increased "per-tonne-mile" costs for transporting the irradiated fuel assemblies from the reactor to a disposal facility -- assuming that such a facility exists by the time the reactor has been built. 4/07.01.00 cont.

6. Speaking of disposal facilities, ten years ago we had more than 70,000 Metric Tonnes of irradiated fuel assemblies that the Department wanted to bury at Hanford's proposed MWIP Repository. Reactor physics being what they are, it is reasonably safe to assume that during the past ten years many of these same reactors continued to generate waste for which the Department still does not have a home. We should clean up this existing lethal legacy before constructing a new plant to generate even more waste. 5/12.00.00

The argument can be made that once the MOX-fuel assemblies have been irradiated in a reactor, that the plutonium content is much safer from terrorists than in its present form. *This is only marginally correct* due to the dangers associated with separating the SNM from the fission products. It is my belief that the additional steps needed to change the SNM from its' existing form through the final disposal (hopefully in a dry burial vault somewhere within Hanford's Rattlesnake Mountain above the existing water table) is much more hazardous, costly and time-consuming than is justified.

I sense the re-emergence of a dangerous pattern in this project as it has been described to me. Many of us mistakenly believed that when the Department ceased its major production-oriented operations at the Hanford Reservation that its future efforts would focus on the remediation of the reservation's contaminated sites.

Instead, this proposal seems to be a replay of past efforts to salvage *Hanford's reactor operations infrastructure at the expense of the* public's health, wealth and safety:

1. As of January 1996, Hanford's TRIDEC infrastructure organization still wanted to convert the abandoned WPPSS-1 Power Reactor to a tritium production reactor. This proposal was the subject of the 1986 Congressional Subcommittee hearing cited above.

2. As of the present date, many of these same players have dropped the latest WPPSS-1 conversion plan in favor of using the FFTF as a tritium production reactor.

The above instances are cited only as examples of the continuing use of the local industrial/business communities in the Tri-Cities area to keep reactors operating at the Hanford Reservation. A far better option would be to channel these support efforts *from* existing and/or new reactor operations and to the immediate decontamination of the Hanford Reservation. 1/08.03.01 cont.

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12 00 00 **Comment Number 5**

Comment noted.

The Department should concentrate on rebuilding its image and increase its level of public trust instead of pursuing the reactor option. Any attempt to use the reactor option without first demonstrating a "good faith" effort to dispose of the current wastes at Hanford is morally indefensible and would call attention to the Department's 50-year history of having a "business as usual" mindset regardless of the public's wishes. 6/01.02.00

Ten years ago Michael J. Lawrence, USDoE's Richland Operations Office Manager bragged about the amount of high level tank wastes that had been condensed during 1984. As I pointed out in my rebuttal [3/], that entire effort had reduced the Reservation's volume by *less* than the amount produced by a single day's operation of the PUREX Plant, and that figure only accounted for high level liquid wastes, thus ignoring the other waste streams generated by the PUREX Plant.

This mindset intensified during the 1980's, and we in the Northwest vividly recall several of the Hanford Reservation's more infamous projects:

1. The unnecessary restart of the PUREX Plant in 1983 to process target fuel assemblies that really had never been needed for national defense purposes;
2. The $200 million dollar "Head Shed" modification project to enable the PUREX Plant to reprocess fuel assemblies from civilian power reactors;
3. Hanford's failure to meet INPO reactor operating standards;
4. USDoE's on-going refusal to comply with NRC safety regulations;
5. The $70 million dollar expenditure to retrofit the N-Reactor's safety systems only *after* the Chernobyl-4 Reactor explosion;
6. The Department's attempt to violate the NPT by converting the WPPSS-1 Reactor from a commercial civilian power reactor to a Department-owned tritium production reactor;
7. The adoption of "ALARA" radiation dose "*goals*" for occupational exposures instead meeting the ICRP's established dose *limits*;
8. The insane desire to continue FFTF operations when all reason dictates its' decommissioning, not its' modification.

SNM is not a plaything. It is time to isolate this material from the environment without further delay. Encapsulate it and then bury it **without** first irradiating it. 7/08.03.01

Sincerely;

W. P. Mead

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01 02 00 **Comment Number 6**

Comment noted.

08 03 01 **Comment Number 7**

The Department of Energy acknowledges the commentor's support for the Immobilization Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

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Cited References:

[1/] "Potential Conversion of WPPSS 1 Commercial Nuclear Powerplant to a Production Reactor." Oversight Hearing before the Subcommittee on General Oversight and Investigations of the Committee on Interior and Insular Affairs, House of Representatives, 100th Congress, 1st Session; held at Portland, Oregon, 12/07/1986; Serial No. 100-42, U.S. Government Printing Office, Washington, D.C., 1988.

[2/] Ibid., page 63.

[3/] "1984 Hanford Reservation Waste Generation Abstract." Public Safety Resources Agency, Portland, OR, 1986.

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