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December 5, 1984

Mr. David B. LeClaire, Director
Office of Defense Waste and
Byproducts Management
U.S. Department of Energy
1000 Independence Ave., S.W.
Washington, D.C. 20585

WM Record File

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WM Project 10

Docket No. _____

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RE: Yakima Indian Nation Comments on Comingling Report

Dear Mr. LeClaire:

Enclosed are the Comments of the Yakima Indian Nation on your draft report, "An Evaluation of Commercial Repository Capacity for the Disposal of Defense High-Level Waste." We apologize for the late submission, but hope you will still be able to consider these comments in preparation of the final document.

The major problem we have with the document--its dissembling concerning the intended disposition of Hanford DHLW--is one which a representative of the State of Washington and I asked you about when you spoke to program participants in Atlanta. It is also a subject which I believe you have heard about from other commenters. We trust this issue will be more forthrightly dealt with in the final report.

Sincerely yours,

Dean R. Tousley

Dean R. Tousley
ASSOCIATE ATTORNEY FOR
THE YAKIMA INDIAN NATION

Enclosure

cc: Russell Jim
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UNITED STATES OF AMERICA

DEPARTMENT OF ENERGY

An Evaluation of Commercial Repository)
Capacity for the Disposal of Defense) DOE/DP-0020 (DRAFT)
High-Level Waste under the Nuclear)
Waste Policy Act of 1982)

COMMENTS OF THE YAKIMA INDIAN NATION

Section 8(b)(1) of the Nuclear Waste Policy Act of 1982 requires the President to evaluate whether to dispose of high-level radioactive waste resulting from atomic energy defense activities using capacity at geologic repositories for commercial high-level radioactive waste and spent nuclear fuel. The U.S. Department of Energy has issued in draft form for comment "An Evaluation of Commercial Repository Capacity for the Disposal of Defense High-Level Waste" [hereafter cited as "Draft Comingling Study"]. Following are the comments of the Confederated Tribes and Bands of the Yakima Indian Nation on that draft evaluation.

General Comments

The relevant statutory language requires the President to consider, in making this evaluation, "factors relating to cost efficiency, health and safety, regulation, transportation, public acceptability, and national security." NWPA Section 8(b)(1). Unless those considerations dictate that a separate repository for defense wastes only is required, the Secretary of Energy is required to make arrangements for disposal of defense high-level

wastes in the repositories developed for commercial wastes under Subtitle A of the NHPA. NHPA Section 8(b)(2). The Nuclear Waste Policy Act thus permits two options for the disposal of defense high-level wastes ("DHLW"): they are to be disposed of either in repositories developed for commercial wastes, or in repositories developed for defense wastes only.

The Yakima Indian Nation ("YIN") strongly supports the conclusion that DHLW should be disposed of in repositories developed for the disposal of commercial nuclear waste and spent fuel. While DOE also purports to support this resolution, careful reading of the Study and referenced material reveals that DOE in fact proposes comingled repository disposal of only a fraction of the defense high-level waste. The great majority of the waste now at Hanford is apparently destined, under DOE's plans, to remain there forever rather than to be disposed of in a licensed geologic repository meeting the safety standards established under the authority of the Nuclear Waste Policy Act.

The Draft Comingling Study is fundamentally flawed in that it does not honestly deal with a major conflict between the NHPA's requirements for the disposal of DHLW and DOE's current "reference plans" with regard to that disposal. In flagrant derogation of the Nuclear Waste Policy Act, it is clear from DOE representations elsewhere that DOE's current "reference plan" is not to remove for disposal the DHLW now "temporarily" stored in 149 single-shelled underground tanks at the Hanford Reservation.

A report cited in the Draft Comingling Study, and materials submitted by DOE to the Environmental Protection Agency, state that the DHLW stored at Hanford as of 1982 constitutes 58.7

percent of the total national inventory of DHLW by volume, and 34.2 percent of the national total by radioactivity content. Spent Fuel and Radioactive Waste Inventories, Projections, and Characteristics, DOE/NE-0017/2, September 1983, Figures 2.1, 2.2. By any measure, the DHLW now stored at Hanford constitutes a major portion of the nation's DHLW problem.

The Draft Comingling Study states only that PUREX waste and "readily retrievable" older waste at Hanford will be processed for disposal in a geologic repository. Draft Comingling Study at 1-7. In the term "readily retrievable" resides the Study's only hint that all of the nation's DHLW will not be disposed of in repositories. The Study does not define or explain the meaning of "readily retrievable", nor does it specify the intended disposition of waste which is not so deemed. The Study does not explain what portion of the Hanford DHLW DOE considers to be "readily retrievable".

The Study does state that only about 120 cannisters of waste annually over a 10-year period will be shipped to a repository from Hanford. This means that DOE expects to ship a total of only 1200 cannisters from Hanford to a repository. Since DOE projects that the total number of DHLW cannisters shipped from all DHLW sites to repositories will number about 20,000, it appears that, under DOE's plan, only about 6 percent of the DHLW shipped to repositories will come from Hanford.

We do not know the specifics of the processing and stabilization processes, so we cannot say how many cannisters would be required to ship all of the DHLW at Hanford to a repository. However, since about half of the nation's DHLW is

currently at Hanford, but DOE projects that only 6 percent of the DHLW shipped to a repository will come from Hanford, it is quite clear that DOE is planning not to dispose of the overwhelming majority of Hanford DHLW in a repository, as required by the NWPA.

The implications of this totally unexplicated, unexplained, radical departure from Congressional intent with respect to disposal of the nation's DHLW are enormous. In the first place, the disingenuousness of the Study's treatment of this matter is disgraceful. DOE apparently does not intend to dispose of at least half of the volume and one-third of the radioactivity of the nation's DHLW in a repository. No place in the Draft Comingling Study is this fundamental fact spelled out. One must look to other documents to discover how much DHLW is actually at Hanford and what DOE's plans are to discern how little of that DHLW DOE apparently intends to dispose of in a repository as the NWPA requires.

Since the Study dissembles about the fact that roughly half of the nation's DHLW will not in fact be disposed of as required by law, it is not surprising that the justification for that fact is nowhere to be found. Nor is there one word about what DOE does intend to do with the bulk of the DHLW at Hanford.

This crucial information is not missing from the Draft Comingling Study because it does not exist, however. DOE's conceptual plans (purportedly still tentative) for the Hanford DHLW can be found in briefing materials which DOE has submitted to the Environmental Protection Agency in support of its plea to the latter agency to create an exemption from the standards of 40 CFR Part 191 for the disposition of the Hanford DHLW.

After years of embarrassing leaks and arguing that the underground tanks at Hanford constituted only temporary storage, DOE has now decided that the costs and risks which would attend removal of the wastes from the old single-shell tanks for repository disposal would be too great. Consequently, DOE would now like to be able to "stabilize and isolate" most of the Hanford DHLW in place, in spite of the complete lack of legal authority to pursue that option.

Since DOE would not be able to satisfy the present proposed EPA standards with such a scheme, the agency is actively seeking an exemption from the proposed standards which would result in a requirement only that DOE demonstrate compliance with the health-effects aspect of the standards. Our preliminary research has revealed no legal authority for the EPA to issue a different set of standards for DHLW. Section 8(b)(3) of the NWA requires any defense-only repository to comply with all requirements of the NRC for a repository. Section 121(b)(1)(C) requires the NRC criteria and requirements to be consistent with the EPA standards. Section 121(a) requires EPA to issue standards for the protection of the environment from radioactivity from "repositories." No distinction is made between commercial and defense repositories. In spite of the lack of legal authority to do so, and in spite of the scheme's inability to satisfy the generally applicable standards, DOE wants to come through the back door to make Hanford into a de facto DHLW repository which is exempt from the generally applicable safety standards for repositories set under the NWA.

The Yakima Indian Nation does not here comment on the merits of the DOE contention that the benefits of removing the Hanford

DHLW for disposal would not justify the costs and risks involved. DOE has made no efforts to explain their views to the YIN or its representatives in this matter, nor to present facts which support them. Moreover, the NWPA does not authorize exemption from safety standards on "cost-benefit" grounds. The Act allows such considerations to affect the decision on comingling versus separate defense facilities, but does not authorize waiver from substantive standards on cost-benefit grounds.

The Draft Comingling Study purports to evaluate the relative merits of disposing of DHLW by the two means contemplated by the NWPA: comingling in a commercial repository or disposal in a defense only repository. Nevertheless, DOE implicitly and blithely assumes in the Study that it will be permitted to dispose of nearly half of the nation's DHLW by a means not contemplated by the NWPA or any other authority. Although the implications of this assumption for the national waste program are quite fundamental, the Department fails even to make the assumption explicit, let alone discuss the significance of the very likely possibility that the assumption will turn out to be incorrect.

The NWPA requires DOE to dispose of all its DHLW in a geologic repository. This means that the required repository capacity for DHLW may in fact be 50 to 100 percent greater than is assumed in the Draft Comingling Study, based on the quantity of DHLW at Hanford relative to the national total. This matter also has very substantial implications for the schedule of DHLW deliveries to a repository. The lack of discussion of this subject in the Draft Comingling Study is a fatal flaw which the YIN insists must be remedied in the final study. The study should

assume that all DHLW will be disposed of in a repository as required by the NWPA, and base all its primary capacity, schedule, and other projections on that assumption.

Specific Comments

Page E-4

The development and evaluation costs for a repository for defense waste only is projected to be \$435 million, based on the WIPP experience. The costs for WIPP, however, were for a salt repository and TRU waste, not HLW in a hard rock repository. Consequently, the defense repository D&E costs are probably not accurate for comparison.

Page 1-9, Table 1-1

The shipments of DHLW from Hanford are shown to stop in the year 2008, and, as discussed above, the quantities projected to be shipped from Hanford are not nearly enough to take care of all the DHLW at Hanford which needs to be disposed of. The Study should explain why the quantities shipped from Hanford are so low, and why shipments from Hanford end after only 10 years. Does DOE plan to discontinue nuclear waste generation at Hanford? Will waste generated at Hanford be transported to another site for processing?

Page 1-10, Table 1-2

Why has the limiting temperature of the spent fuel after Package Design Life not been determined?

Page 1-11

Among the baseline assumptions used in the evaluation was that a commercial repository will have an inventory of 35,000 MTHM of spent nuclear fuel and 35,000 MTHM of commercial high-level (reprocessed) waste. In light of the current lack of any prospect for commercial reprocessing, what is the basis for DOE's assumption that so much spent fuel will be reprocessed before disposal? What are the implications for the required size of repository capacity if, as seems likely, the overwhelming majority of waste is disposed of as spent fuel?

Page 1-11

How will current repository designs, which were based on a 70,000 MTHM capacity, be affected by the additional 10,000 MTHM emplaced in the "augmented repository" scheme? How would they be affected by the 15,000 - 20,000 MTHM of additional capacity that will be required to dispose of all the Hanford DHLW, as the NWPA requires? What will be the cost and schedule implications of these design modifications?

Page 1-12

The statement that disposal of DHLW will in all cases meet the requirements of applicable EPA and NRC standards is less than totally honest. DOE should acknowledge that it is actively seeking modifications of the EPA standards so that most of those presently proposed standards will not apply to a major portion of the nation's DHLW (that in old single-shell tanks at Hanford). DOE should also acknowledge its plan not to "dispose" of half of its DHLW in a repository.

Page 2-7

Information about tuff was used as a surrogate for the high end of repository hard rock costs. This is probably not conservative, as granite and basalt are much harder than tuff, raising drilling and mining costs for the former. In addition, if the tuff case assumes a relatively shallow repository in the unsaturated zone, as would be the case at NTS, that would also tend to be non-conservative relative to costs of a deep repository in the saturated zone in basalt or granite.

Page 2-16

Where are the analyses performed for section 2.3.2, Health and Safety Impacts, documented? There are no citations.

DOE states that "...all disposal options must satisfy the requirements of the 10 CFR 20 and 10 CFR 60 (NRC) and the proposed 40 CFR 191 (EPA) during both the operational and post-closure phases." DOE should acknowledge that it is seeking an exemption from most of the present proposed EPA standards for DHLW at Hanford.

Page 2-19

Retardation values (R) are said to be conservative. However, none of the values used by any authors cited as references have been verified under field conditions for porous or fractured media. Most values are taken from a range of values from laboratory analyses using crushed samples and may not be at all representative of behavior under field conditions.

Page 2-26

Leach rates are based on temperatures at 300 and 1000 years. This may be a conservative assumption, generally. However, DOE should also evaluate the significance of leaching from canisters that fail before the end of the containment period, when temperatures are much higher. (We have heard representatives of the NRC Staff suggest that failure of as many as 5 % of the canisters would still be consistent with the containment requirement.)

Page 2-28

What assumptions were used concerning volumes of rock excavated for salt and hard rock in order to get the temperatures down to the levels listed? Wouldn't the comparison of fractional release rates be more realistic if

the respective volumes were adjusted to yield equivalent temperatures for salt and hard rock at the end of the containment period?

Page 2-29

To avoid premature obsolescence of this Study, DOE should include discussion of the implications of likely changes to the proposed 40 CFR 191 and 10 CFR 60. For example, Table 2-8 should include projections of compliance or not with the proposed new groundwater protection provisions which require carrying release calculations out to 100,000 years using release rates of 10U and 10U.

Page 2-31

To avoid a possible misrepresentation with respect to the effects of a comingled repository, the last sentence of section 2.3.2.1 should be revised to state that although the effects per MTHM would be slightly reduced with the codisposal option, the total effects from the repository would be increased because the contribution from DHLW would be added to the full 70,000 MTHM commercial repository.

Page 2-36

The projection of less than two radiological health effects to workers during the operational phase of the repositories seems unrealistically low, especially if spent fuel will have to be repackaged at the repository. To our knowledge, there is not yet a universal cask suitable for both shipping and repository emplacement, so repackaging will probably be necessary. The Study is deficient in considering only one potential accident. An estimated frequency for dropping a cannister down a shaft is given, but the consequences are not.

Page 3-12

The Study should explain why total air pollutants are greater during operation than construction. Once again, the consequences of dropping a cannister down a shaft should be discussed.

Conclusion

The Yakima Indian Nation agrees with the conclusion of the Draft Comingling Study that DHLW should be disposed of in repositories developed for commercial HLW and spent fuel. The analysis is severely flawed, however, by a less than honest treatment of DOE's plans with respect to the DHLW at Hanford, and to a lesser extent by the other issues discussed above. We sincerely hope that these defects will be remedied in the final version of the Study.

Respectfully submitted,

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