



Confederated Tribes and Bands  
of the Yakama Nation

EIS001964

Established by the  
Treaty of June 9, 1855

February 28, 2000

RECEIVED

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VIA FACSIMILE: (800) 967-0739  
Attn: Yucca Mountain Draft EIS

Ms. Wendy R. Dixon  
EIS Project Manager  
Yucca Mountain Site Characterization Office  
Office of Civilian Radioactive Waste Management  
U.S. Department of Energy  
PO Box 30307, M/S 010  
North Las Vegas, Nevada 89036-0307

Dear Ms. Dixon:

Please find enclosed comments of the Yakama Nation on the Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada, DOE OCRWM, DOE/EIS-0250D, July 1999.

The primary issues identified are lack of analysis in the DEIS of:

- ◆ Impacts from the DOE administrative decision to allocate 63,000 MTHM of the repository capacity to commercial spent nuclear fuel, and only 7,000 MTHM to high-level nuclear waste and DOE spent nuclear fuel.
- ◆ Impacts from continued storage of Hanford HLW and spent nuclear fuel on-site pending availability of repository capacity.

Please reply to Mr. Russell Jim, Manager, Environmental Restoration/Waste Management Program, 2808 Main Street, Union Gap, WA 98903, and at (509) 452-2502. Thank you.

Sincerely,

Carroll E. Palmer, Deputy Director  
Department of Natural Resources

cc: Mr. Duane Clark Sr., Chairman, YN RHW Comm. (w/ enc.)  
Mr. Russell Jim, Mgr., ER/WM Program (w/ enc.)

COMMENTS  
ON THE  
DRAFT ENVIRONMENTAL IMPACT STATEMENT

for a  
Geologic Repository for the Disposal of Spent Nuclear Fuel  
and High-Level Radioactive Waste at Yucca Mountain  
Nye County, Nevada  
DOE/EIS-0250D  
JULY 1999

SUBMITTED BY  
ENVIRONMENTAL RESTORATION/WASTE MANAGEMENT PROGRAM  
DEPARTMENT OF NATURAL RESOURCES  
YAKAMA NATION

**GENERAL COMMENTS**

When Congress passed the Nuclear Waste Policy Act (NWPA, 96 Stat 2201) of 1982, the legislation's intent was reduction of risk to human health and the environment posed by commercial spent nuclear fuel, defense high-level radioactive waste, and defense spent fuel. When the NWPA was amended in 1987, the clear intent of Congress was once again risk reduction, albeit through an accelerated process by which only the Yucca Mountain Site in Nevada would be considered for a repository. The United States Department of Energy (DOE), through its Office of Civilian Radioactive Waste Management (OCRWM) is charged with site characterization, design, and operation of a geologic repository to achieve the goals set forth in the NWPA.

- 1 [The Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada, DOE OCRWM, DOE/EIS-0250D, July 1999 (hereinafter referred to as the DEIS) fails to address the single most important issue which affects risk reduction, namely, the apportionment of commercial spent nuclear fuel (SNF) and DOE high-level radioactive waste (HLW) and spent fuel within the disposal inventory limit set by Congress in the NWPA, i.e., 70,000 metric tons of heavy metal (MTHM). While this issue is clearly within the scope of the DEIS, and is in fact referenced in the DEIS with regard to an administrative decision made by DOE which establishes the MTHM ratio of SNF and HLW, no analysis is presented with regard to the risk reduction achieved by different disposal ratios of commercial SNF and DOE waste within the 70,000 MTHM Congressional limit.]

Section 111(a)7 of the NHPA sets forth the Congressional finding that

“high-level radioactive waste and spent nuclear fuel have become major subjects of public concern, and appropriate precautions may be taken to ensure that such waste and spent fuel do not adversely affect the public health and safety and the environment for this or future generations.”

Despite this language, the DEIS lacks an analysis of measures which could be taken to prevent adverse effects to human health and the environment from such waste, especially ongoing impacts from Hanford HLW releases to the environment. Highlighting this lack of appropriate analysis within the scope of the DEIS, DOE has proposed for consideration only two alternatives (Modules 1 and 2) to its proposed action. However, neither of these alternatives may be implemented without further Congressional action, leaving no consideration of lawful alternatives to the DOE proposed action.

#### Specific Impacts of DEIS Actions to the Yakama Nation

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The Yakama Nation (YN) entered into a Treaty with the United States government on June 9, 1855 (Treaty of 1855, 12 Stat 951). This Treaty was entered into pursuant to the laws of the Yakama and the U.S. Constitution, and was signed by the President of the United States on April 18, 1859 following ratification by Congress. It is in full effect today.

The YN retains perpetual rights on open and unclaimed land within the boundaries of the territory ceded to the United States government in the Treaty of 1855. The Hanford nuclear site is on YN ceded land. Due to the Hanford site's proximity to the Yakama Nation Reservation, the YN is affected by Hanford activities on its Reservation land as well as from impacts to the Hanford ceded land. In addition, the Hanford site creates off-site impacts which affect YN reserved rights on other areas of its ceded territory, including the Columbia River.

The greatest inventory of HLW and DOE SNF in the United States is located on Yakama Nation ceded land at the DOE's Hanford site. Most Hanford HLW is stored in leaking underground tanks, but some HLW has now contaminated the vadose zone under the tanks, and some has reached the unconfined aquifer which flows into the Columbia River. This HLW poses acute as well as chronic risks to human health and the environment, resulting from its mobility into the environment, its extreme toxicity, and its long-lived activity. DOE SNF at Hanford is considered an acute risk as well, resulting from the degraded nature of containment, and the potential for a catastrophic release to the Columbia River. It is therefore of the greatest importance to the YN government that the United States fully consider any actions with regard to retrieval, processing and disposal of this HLW which may affect the perpetual Treaty rights of the Yakama Nation.

1 cont'd.

As mentioned above, the YN does not consider the analysis in the DEIS adequate at this time. The single greatest factor within the scope of the DEIS which affects risk reduction, including risk reduction to Yakama Tribal members and YN resources which are protected by Treaty, is the apportionment of commercial SNF and DOE waste in the proposed repository.

The human health and environmental risks posed by Hanford HLW are significantly greater than those posed by commercial SNF, and that risk may increase substantially as the Hanford HLW tanks continue to deteriorate and fail, and unless the Hanford SNF is stabilized and isolated from the environment. The most important and necessary analysis for the proposed Yucca Mountain repository is a comparative analysis of the risks of storage of DOE HLW and SNF relative to those of commercial SNF, prior to waste acceptance at a repository. This analysis is mandatory before DOE, Congress, and affected governments including the YN may have confidence in the SNF and HLW disposal program.

When the proposed analysis is conducted, it should fully account for the distinct pathways and risks posed to Native Americans, including YN Tribal members. (Please reference "Estimation of Health Risk Based on Revised Estimates of HEDR Doses for Maximum Representative Individuals Consuming Fish and Waterfowl from the Columbia River: An Evaluation of HEDR Reports on the Columbia River Pathway", Agency for Toxic Substances and Disease Registry, Atlanta, Georgia, March, 1998.)

#### Risks of DOE Hanford HLW and SNF vs. Commercial SNF

- ◆ Hanford HLW exists in an extremely hazardous form. It consists of sludge, saltcake and liquids which are unstable and have numerous constituents which have reacted to form flammable gasses and potentially explosive compounds. While extensive work has been undertaken over the past decade to assess and mitigate the risks posed by potential explosions in the Hanford HLW tanks, the reality is that characterization data does not exist at the level necessary to ensure that an explosion may be ruled out. DOE Hanford SNF is stored in a leaking basin which could fail during an earthquake, and the SNF elements have corroded and released HLW sludge to the basin floor. Commercial SNF, by comparison, is in the form of a solid with well defined characteristics, has more robust cladding, and is stored under stringent standards.
- ◆ Hanford HLW has been released to the environment, and containment continues to fail. Once radioactive materials are present in the accessible environment, the risks posed to human health and the environment increases dramatically. Not only has Hanford HLW already impacted the accessible environment, but it is certain that those impacts will increase in the near term. Hanford HLW has been confirmed in the vadose zone, and HLW constituents have reached groundwater in some locations. Similar to the lack of characterization data, data on the extent of HLW contamination to the vadose zone and groundwater is incomplete. DOE Hanford SNF has released radionuclides into the soil from leaks in the basin. Commercial SNF remains contained and isolated from the accessible environment.

- ◆ Hanford HLW is likely to produce unforeseen and unpredictable risks in its interactions with the environment. Unlike commercial SNF, which exists in a well characterized and stable form, Hanford HLW constituents (sludge, saltcake, and liquids comprised of organic, inorganic and heavy metal radionuclides and chemical wastes) present significant risk assessment challenges. In short, Hanford HLW poses greater risk relative to commercial SNF once released to the environment by virtue of its composition. Similarly, DOE Hanford SNF exists in a form which is more difficult to retrieve from the environment than commercial SNF.

### SPECIFIC COMMENTS

1 cont'd.

#### Section 1.4.2

“The Nuclear Waste Policy Act requires the Nuclear Regulatory Commission to include in the authorization a prohibition against the emplacement of more than 70,000 MTHM in the first repository until a second repository is in operation [Nuclear Waste Policy Act, Section 114(d)]. **DOE has allocated 63,000 MTHM of commercial spent nuclear fuel and 7,000 MTHM equivalent of DOE spent nuclear fuel and high-level radioactive waste to the proposed repository at Yucca Mountain.**” (Emphasis added.)

The DOE allocation of 7,000 MTHM equivalent of DOE SNF and HLW is one of the most significant factors in risk exposure considered in the DEIS - yet no analysis is presented regarding the basis for this decision. In fact, this decision should have been fully subject to NEPA analysis, and alternatives presented for various repository allocations between commercial spent fuel and DOE spent fuel and HLW.

2

#### Section 4.1.13.4

“For this reason DOE will consult with tribal governments and will work with representatives of the Consolidated Group of Tribes and Organizations to ensure the consideration of tribal rights and concerns before making decisions or implementing programs that could affect tribes . . . .”

The current and anticipated near and long-term impacts to the YN from DOE operations are significant with respect to impacts from proposed repository operations in the near future. DOE OCRWM should consult with the YN on a government-government basis on issues involved in the DEIS.

3

#### Section 6.1.2.12

While DOE is attempting to address environmental justice issues in this section, the appropriate forum for discussion of the spectrum of potential impacts from nuclear waste transportation is in direct discussion with the Yakama Nation. Numerous technical issues which are omitted from this section should be considered by appropriate representatives of DOE and the Yakama Nation.

## 4 [Section 8.1.2.1

“Inventory Modules 1 and 2 represent the reasonably foreseeable future actions of disposing of all projected commercial and DOE spent nuclear fuel and all high-level radioactive waste as well as Greater-Than-Class-C waste and Special-Performance-Assessment-Required waste in the proposed repository (see Figure 8-1).”

The DEIS fails to account for the cumulative impacts of HLW and DOE SNF depicted in Inventory Module 1 and Inventory Module 2 (Figure 8-1) which are not disposed of in the proposed Yucca Mountain repository. These cumulative impacts should be addressed in the DEIS.

## 5 [Section 11.2.6

The DEIS cites Executive Order 12898, Environmental Justice, but omits the statutory basis for Tribal government participation in the DEIS process, i.e., Treaties with the U.S. government. A description of the legal standing and statutory basis of Tribal government involvement should be provided in the foreword to Section 11.

## 6 [Section A.1.1.4.1

“Figure A-2 shows percentages of MTHM included in the Proposed Action and the relative amounts of the totals of the individual waste types included in the Proposed Action.”

The DEIS should provide an analysis of the impacts of HLW and DOE SNF which are not included in the Proposed Action as long as such wastes are projected to be stored.

## 7 [Section A.2.3.1

“There has been no determination of which waste would be shipped to the repository, or the order of shipments.”

This statement reveals the lack of analysis presented in the DEIS. Yucca Mountain, if it is licensed for acceptance of waste, will provide disposal capacity for actual commercial SNF and DOE HLW and SNF. The DEIS should provide a range of scenarios for which waste is proposed to be shipped to a generic repository, so the impacts of those scenarios may be evaluated.

## 8 [Section A.2.3.5.4

“In the extreme, the nonuniform blending of cesium concentrates and capsule materials into a relatively small volume of sludge waste could produce a few canisters with specific powers as high as 2,540 watts, which is the limit for the nominally 4.5-meter (15-foot)

8 cont'd. Hanford canisters in the Civilian Radioactive Waste Management System Baseline (Picha 1997, Attachment 1, page 2; Taylor 1997, all).”

The consideration of actual waste forms and waste package characteristics points to the need for a careful analysis of waste inventory considered for disposal, and specifically the impacts of waste packages which may be stored for an indefinite period prior to acceptance for geologic disposal in a repository.

9 Section A.2.3.5.7

“Hanford Site. DOE could need to ship such nonstandard high-level radioactive waste packages as failed melter and failed contaminated high-level radioactive waste processing equipment to the repository. For this EIS, the estimated volume of nonstandard packages available for shipment to the repository from the Hanford Site would be equivalent to that described below for the Savannah River Site.”

Table A-38 provides an estimate of 10 melter, 4.5 equivalent DWPF canisters for each melter, 1,000 metric tons for 10 melter, with one melter per disposal package.

The DEIS should fully consider Hanford HLW in addition to tank waste, failed melter, and failed HLW processing equipment. In particular, the DEIS should provide an analysis of the fraction of Hanford HLW currently planned for separation and disposal at the Hanford site, by mass, volume and radionuclide content.