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Confederated Tribes and Bands
of the Yakama Nation

Established by the
Treaty of June 9, 1855

November 17, 2010

Matt McCormick, Manager
U.S. Department of Energy, Richland Operations
P.O. Box 550 (A7-50)
Richland, WA 99352

Dennis Faulk, Manager
U.S. Environmental Protection Agency, Region 10
309 Bradley Blvd., Suite 115
Richland, WA 99352

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EDMC

Jane Hedges, Program Manager
Washington State Department of Ecology
3100 Port of Benton Blvd.
Richland, WA 99354

Re: Engineering Evaluation/Cost Analysis for 105-KE Reactor Decommissioning (DOE/RL-2009-106, Rev 0)

Dear Mr. McCormick, Mr. Faulk and Ms. Hedges

The Yakama Nation ERWM Program appreciates the opportunity to review and provide comments on *the Engineering Evaluation/Cost Analysis for 105-KE Reactor Decommissioning (DOE/RL-2009-106, Rev 0).* 0091060

The Confederated Tribes and Bands of the Yakama Nation is a federally recognized sovereign pursuant of the Treaty of June 9, 1855 made with the United States of America (12Stat. 951). The U.S. Department of Energy's Hanford site was developed on land ceded by the Yakama Nation under the 1855 Treaty with the United States. The Yakama Nation retains reserved rights to this land under the Treaty.

The Yakama Nation ERWM Program supports use of technologies that reduce or eliminate the contamination of the Columbia River from source units on the Hanford Site. Additionally, the Yakama Nation supports the goal of removal and disposal of the 105-KE reactor from the

vicinity of the Columbia River shore line. However, it is the position of the Yakama Nation that the Engineering Evaluation/Cost Analysis (EE/CA) that has been prepared to evaluate the removal of the 105-KE Reactor is incomplete and inadequate. The Yakama Nation ERWM Program has identified the following areas of concern.

- It is uncertain if lessons learned from the Brookhaven reactor decommissioning are sufficient to overcome technical challenges associated with the much larger 105-KE reactor. The selected single piece reactor block removal alternative was initially considered for analysis in the original EIS, but was rejected due to its high occupational radiation dose and high cost. The current EE/CA contains little discussion how these obstacles will be overcome and what actions will have to be performed to dismantle the reactor block. A more complete engineering analysis should contain descriptions of the actions, project schedules, staffing, and description of new and unique technologies, ALARA considerations and waste disposal volumes.

- Cost estimates have not been developed to support the implementation of new technologies based on Brookhaven lessons learned. The EE/CA contains cost numbers abstracted from the 1992 Final EIS (DOE/EIS-119F) and escalated by a factor of 1.27 from the 1990 dollars identified in the EIS. It is uncertain if these escalated dollars contain current costs for disposal. It is recommended that an analysis of the new dismantlement alternative be conducted that reflects new technologies and waste burial costs.

- Originally, removal and disposal of the 100 Area Reactors was destined for a separate disposal site, not ERDF. The reactor graphite contains significant quantities of the long-lived radionuclides carbon-14 (C-14) and chlorine-36 (Cl-36), as well as trace amount of transuranic isotopes and fission product nuclides. DOE has projected ERDF disposal to peak at 1.3 million picocuries per liter (*Remedial Investigation and Feasibility Study Report for the Environmental Restoration Disposal Facility, [DOE/RL-93-99]*). A significant portion of the projected radioactivity would be from reactor onsite graphite disposal, which would aggravate the projected exceedance of drinking water limits in violation of ARARs and, therefore, CERCLA.

  Based on the radionuclide inventory cited as a basis for waste characterization (UNI-3714, Rev. 1), graphite waste generated from reactor removal would not meet ERDF Waste Acceptance Criteria (WHC-191) due to elevated levels of C-14 and Cl-36. There are no recent analytical results provided in document or incorporated by reference to support characterization of the waste that would be generated. In addition, the cited "*100-K Area Interim Safe Storage and D4 Project Waste Sampling and Analysis Plan*" (DOE/RL-2005-33, Rev. 1) is not designed for characterization of waste from removal or dismantlement of the K reactor graphite blocks.

The Yakama Nation ERWM Program recommends DOE/RL prepare and document in a new engineering evaluation of the proposed action that includes detailed cost estimates reflecting the experience at Brookhaven. The evaluation should include discussions of the proposed technologies, estimates of the quantities and type of waste that would be generated and the final disposition of the waste. This new evaluation will result in a complete engineering evaluation of the accelerated dismantlement alternative for the 105-KE Reactor.

Sincerely,

Russell Jim, ER/WM Projects Manager

cc:

RHW Committee
G. Bohee, NPT
S. Harris, CTUIR
K. Niles, ODOE
J. Beckstrom, ERWM
Administrative Record