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DEPARTMENT of  
NATURAL RESOURCES

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Administration



## CONFEDERATED TRIBES

of the

### *Umatilla Indian Reservation*

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9 February 1994

NMWMP - Hanford

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Mr. Jim Mecca  
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Dear PUREX Project Managers:

The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) are pleased to submit comments on the Draft Project Management Plan (PMP) for the deactivation of the PUREX and UO3 facilities. The significant and swift reduction of the high management, administrative, and manpower costs associated with continued maintenance of obsolete facilities such as PUREX and UO3 is both commendable and highly desirable.

Nonetheless, the Tribes' technical staff have identified several deficiencies in and incomplete aspects of the proposed deactivation PMP. These general problem areas are outlined below within the framework of the following categories:

- 1) Information needs,
- 2) Administrative process and framework,
- 3) Context of project in overall Hanford sitewide efforts,
- 4) Disposition of remaining hazardous and radioactive materials,
- 5) Effluent discharges to the environment, and
- 6) On- and off-site transportation of hazardous materials needed for or generated by the deactivation project.

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These comments identify Tribal values and concerns that should be incorporated into the decision making process and the proposed action plan for deactivation of these facilities. Thorough and comprehensive deactivation of these key facilities should be completed within the context of deactivation of all surplus defense-production facilities and consolidation of all waste management activities, which will provide a model for other such projects across the site. As such, these efforts should be fully integrated into all other sitewide efforts that may be affected, including proposed storage facilities for remaining PUREX/UO3 hazardous materials. Such efforts must integrate the highest standards and requirements for hazardous and radioactive material removal, elimination of all effluent discharges to the environment, and directly relate to preparation of the facilities for rapid decommissioning and demolition and site restoration. This PMP should develop interim procedures for effluent management that are consistent both with elimination of discharges to the ground and current planning efforts for the sitewide groundwater remediation strategy and sitewide groundwater protection management plan.

1. Information Needs

In order to effectively and knowledgeably comment on this draft PMP and other phases of the proposed PUREX/UO3 deactivation project, basic information must be provided to interested parties in advance of project scoping, work plan development, and deactivation activities. A "Stakeholder Involvement Plan" (PMP, Appendix D) outlines how Native American Tribes can get involved in the process. Although this plan optimistically states that "a fundamental expectation of the Project is to involve stakeholders early in the concept-formation phase through the project execution phase," it also states that "it is important to note that many of the basic decisions . . . already have been made." Receipt of the PMP at the December 10, 1993, meeting at Richland represents the first involvement of the CTUIR; no efforts were made to include the Tribes in early project scoping and the initial concept-formation phase.

In Appendix D, Section D5.0, it is noted that numerous types of information, including documents, will be maintained and provided. The CTUIR formally request to receive the available "list of pertinent documents concerning PUREX and UO3." In addition, we are interested in receiving other basic information referred to in this list (D5.0), including:

- Technical and regulatory questions and issues raised by the deactivation project,
- Detailed description of deactivation activities,
- History of PUREX/UO3 DOE deactivation order and risks associated with not completing deactivation activities,
- Facts on current costs and surveillance and maintenance requirements,
- Physical descriptions of facility processes and histories, including all information pertaining to liquid effluents, discharges, and air emissions, and
- Description of how PUREX/UO3 facilities fit into site remediation activities.

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The completion and thoroughness of our review and assessment of this work plan is dependent upon our acquisition and review of a number of specific and related documents referred to in the work plan text. Some of these documents appear to form the basis for decisions or actions called for in the PMP, and thus are crucial to understanding of this framework. For example, these documents include:

- Operation of PUREX and Uranium Oxide Plant Facilities (DOE/EIS 0089),
- UO3 Plant Terminal Cleanout and Deactivation Plan (WHC-SD-CP-008, Rev. 0),
- Facility and Effluent Monitoring Plan for the Uranium Trioxide Facility (WHC-EP-0470),
- Facility and Effluent Monitoring Plan for the Plutonium-Uranium Extraction Facility (WHC-EP-0468-1),
- Radiological Control Manual (WHC-CM-1-6),
- Independent Technical Review of the Hanford PUREX Plant Transition to Deactivation (Thullen, 1992),
- Transition of Facilities to the Office of Environmental Restoration and Waste Management (DOE Order 58XX.XX),
- General Design Criteria (DOE Order 6430.1A),
- Project Management System (DOE Order 4700.1).

Timely receipt of this information is mandatory for meaningful involvement. Please supply the information and documents listed above to us within thirty days.

### 2. Administrative Process and Framework

Because we have not received sufficient background information upon which to base a fully informed evaluation of the deactivation PMP, there appear to be possible deficiencies in the administrative process related to this action. For example, it is not clear that a 10+ year old EIS directed toward operation of PUREX and UO3 is sufficient to cover issues and potential environmental impacts associated with deactivation of these facilities. Our experience is that most agencies consider a period of about 5 years to be the maximum lifespan for a NEPA document, owing principally to changing conditions, as appears to be the case here. In addition, during the past 10 years, many environmental and administrative variables, such as the Hanford mission and numerous environmental regulations and requirements, have changed. A new EA/EIS may be required to adequately address issues specifically associated with deactivation, including connected actions, cumulative impacts, and the proposed long-term maintenance of vacant buildings.

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3. Context of Project in Overall Hanford Sitewide Efforts

Prior to initiation of the project, the goals and objectives for the consolidation and management of wastes or remaining products and for defining either future uses or surplus of facilities such as PUREX should be clearly described within the context of integrated sitewide planning and implementation. This project, or aspects of this project, are clearly related to other projects and should be conceived and executed within the context of overall sitewide efforts and goals. This project affects or may affect a number of other projects or activities across the site and should not be completed in an isolated, piecemeal, or fragmentary manner. To our knowledge, no such sitewide program or vision exists.

For example, radioactive materials/wastes and N-reactor fuel will be moved from PUREX to one or more other facilities onsite, which may have significant implications or impacts to available storage space or conditions. In addition, the disposition of Special Nuclear Materials, and whether they will be treated as wastes or assets, is not addressed in any detail. Although a number of ancillary support facilities, including utilities, waste and effluent lines, and some retention basins are included within the defined scope of deactivation activities, the PUREX storage tunnels and other waste disposal facilities are not. All facilities related to PUREX and UO3 should be addressed in a comprehensive manner within the deactivation PMP.

The possible treatment of wastes or products from other facilities, such as PFP or UO3, is not considered in the PMP. It may be that PUREX could provide the best alternative for dealing with the plutonium and uranium materials and wastes that are present in many forms and in many places across the site; however, no basis for evaluating such alternatives is provided. In fact, "the deactivation of the UO3 plant . . . relies on the availability of some PUREX systems to accomplish deactivation objectives" (PMP, p. G-29).

Because so many production facilities and the materials they produced or treated are closely interrelated and interdependent, it is imperative that deactivation and decontamination and decommissioning of all defense-production facilities be coordinated on a sitewide basis. There is a particularly critical need to define the often subtle distinction between "deactivation" and "D+D." For example, "deactivation" activities appear to include both the beginnings of decontamination (e.g., flushing) and decommissioning (e.g., equipment removal) activities; how are these phases or processes distinguished or separated? Fundamental goals of all such activities should be to: 1) maximize waste treatment, 2) minimize waste volume and generation, 3) safely dispose of the greatest amount of remaining radioactive materials still present in many facilities across the site, 4) remove threats to and protect human health and the environment, and 5) restore injured resources.

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4. Disposition of Remaining Hazardous and Radioactive Materials

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There are several major concerns regarding both the immediate and long-term disposition of hazardous chemical and radioactive materials remaining in the facilities. It appears (PMP, p. 2.2-3) that some materials/wastes will be removed from the building(s), if their final disposition already has been identified. Other wastes that are not planned to be removed will be identified, characterized, and "documented," with the unstated implication that they will be left in place. It is not clear what volume or proportion of materials now in the facilities will be removed or left in place, nor is it clear what disposition is planned for those wastes that remain. For example, the preferred and other alternatives for disposition of highly concentrated plutonium-uranium solutions in PUREX tanks D5 and E6 are not clearly outlined. Dilution of this waste to meet tank farm criticality control specifications would require more than 1 million gallons of valuable tank space. Waste minimization efforts and preservation of valuable tank farm capacity would be better served by concentrating such wastes and disposing of them as TRU waste. Because these wastes ultimately will need to be removed and safely treated and disposed of, this plan should identify materials that will remain (and why), identify potential treatment/disposition alternatives, and develop recommendations. If disposition of fissile materials is not planned and they are to remain in place, how can "elimin[ation of] the potential for a nuclear criticality excursion<sup>1</sup> and the need for a criticality alarm system" (PMP, p. 2.2-3) be adequately addressed? How can DOE justify removing only some of the hazardous material while leaving the rest in place? All must ultimately be removed, treated, and properly disposed or stored, and the sooner the better. How do these efforts contribute to the ultimate restoration of the site?

In fact, a stated requirement to minimize life-cycle costs is that "disposal of waste materials will be maximized during deactivation" (PMP, p. 2.2-4). Leaving hazardous material in the facilities unnecessarily can only prolong both the continuing health and environmental risk and increase the costs and risks of future surveillance and maintenance. Such funds could be far more effectively spent addressing sitewide groundwater remediation programs and other actions directed toward reducing imminent threats to the Columbia River. Moreover, if

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<sup>1</sup> Will nuclear criticality be taking a trip? This is an excellent example of the deliberate perversion of otherwise conventionally defined language (see Webster's Dictionary) so common within DOE documents that makes the intent and purpose of such discussion unclear, confusing, evasive, or even mocking. Moreover, such language usage points directly to the remaining need to change the still deeply entrenched defense-production DOE mindset at Hanford. Continued usage of such jargon or euphemisms is particularly disturbing because it preserves the secretive, engineer-oriented, and fragmentary/piecemeal mindset that still is so clearly a fundamental part of the problem among Hanford managers. This must be changed.

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hazardous materials, contaminated equipment, or operational support system equipment is being left in place in the facilities, then fire protection equipment and services and other emergency facilities must not be disabled, otherwise eliminated, or scaled back (PMP, p. 2.2-5 and 2.2-6). The proposed plan calls for removal of flammable solvents, deactivation of plant systems, removal of the workforce, and the eventual declaration of "no-property value" (PMP, p. 7.1-6). These steps represent a significant step in the right direction, however, alone, they do not eliminate the danger associated with accidental fire- or natural disaster-caused release of radiation or contaminants from an unclean, if deactivated, facility.

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A particularly critical question remains regarding the proposed disposition of approximately 2 metric tons of irradiated N-Reactor and single-pass reactor fuel now present in PUREX. The intended disposition of this fuel to K-basins is unacceptable. The CTUIR have argued repeatedly that the deteriorating N-Reactor fuel already present in K-basins constitutes an imminent and proximate threat to the Columbia River. These fuel rods, the highly contaminated sludge at the bottom of the basin, and the highly contaminated cooling/shielding water, which is leaking into the subsurface, must be expeditiously removed from, and discharge stopped to, the Columbia River; this should be a very high priority. No additional fuel should be placed in this temporary and environmentally unsound "storage facility." A number of our previously submitted comments (on the proposed changes to the TPA, for example) have consistently pointed out the need for expeditious development and availability of more permanent, secure, and environmentally sound storage facilities, such as the ERDF and MFSPC, for materials/wastes generated by remedial or deactivation activities. Both the completion of remedial/D+D actions and their associated needs demand a coordinated and integrated sitewide approach.

Additional hazardous materials will be used for deactivation and cleanup activities (PMP, p. 2.2-3). The nature and quantities of proposed materials should be disclosed and listed, as well as their intended disposition, either on- or off-site. Many activities proposed for deactivation appear to be the beginnings of or partial decontamination or decommissioning activities. Actions propose to "reduce or stabilize" contamination levels or areas, remove "some" materials/wastes, reduce "imminent" hazards to workers or the environment (why has this not already been done?), and "partially" deactivate support systems or equipment. If all the time, energy, money, and manpower is being brought to bear to begin the process, and given that all these actions will necessarily need to be accomplished eventually anyway, why should such actions not logically (and more cheaply) be carried through to completion now?

What is the long-term direction or goal for facilities such as PUREX and UO3? Is the ultimate goal to dismantle and remove the entire facility(s) and remediate and restore the area, or is there some other intended use? The work plan should discuss these issues to ensure that there is an expressed goal, vision, or purpose for the proposed actions. If no long-term goals

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are defined, how can we know that the proposed actions will effectively and meaningfully contribute toward accomplishing the intended goals? In order to maximize the benefit of our project review, we respectfully request a specific written response to these fundamentally important and critical questions.

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There also appear to be conflicting goals with regard to the desired end-condition of the deactivation phase versus the ultimate needs for decontamination, decommissioning, and demolition of the facilities, or even reactivation. For example, "as a general guide, 'as left' contamination and radiation levels in plant areas should be no greater than the levels encountered during normal operation and occupancy of the plant" (PMP, p. 2.2-3). This "general guide" is highly disturbing and most inappropriate. Conditions encountered during historical facility operation have repeatedly included dangerously high levels of contamination releases both within the facility and to the environment (air and ground), excessive radiation exposure to workers, recurrent equipment problems, numerous criticality and safety violations, dissolver cell leaks, and explosions and fires. "A Brief History of the PUREX and UO<sub>3</sub> Facilities (WHC-MR-0437, pp. 30-31) lists only seven "serious" events associated with historical PUREX operations. Other events of at least as serious a magnitude, including both releases to the atmosphere, such as the September 1963 iodine-131 release to the atmosphere (Validation of HEDR Models, PNWD-2221-HEDR, Section 10), spills to the ground (tens of thousands of gallons of contaminated solutions during 1960s), and safety violations (fires in 1958 and 1960, repeated criticality violations in 1972, safety-related shutdowns throughout the 1980s) are not included. A full accounting of all accidents, "radiation events," and safety violations should be provided in support of safely conducting deactivation activities. Many such occurrences led to excessive and unsafe contamination levels in many parts of the facilities during "normal operation and occupancy" and should in no way be used as a basis for formulating guidelines on "acceptable" levels of contamination that may be left in the facilities. As indicated above, all dangerous materials should be removed from the facilities as soon as possible. The facilities then should be cleaned up to the maximum degree possible before being closed and locked.

The potential for reactivation of the facilities also should be recognized up-front; it is alluded to in several places within the draft PMP (e.g., p. 2.2-4). For example, the ultimate disposition of large volumes of irradiated N-Reactor fuel, most now stored in the K-East basin and some still present in PUREX, has not been decided. Reactivation of PUREX, UO<sub>3</sub>, and even PFP may be considered as one option. In particular, the purpose of the 10-year "surveillance" period proposed for the facilities following deactivation but before actual D+D activities begin is unclear. If these activities relate to possible reactivation, this should be clearly stated. The need for a full 10-year inactive period "to predict future maintenance requirements" (PMP, p. 1.2-1) is never fully justified. Moreover, it would appear that there is sufficient overlap and interrelation between "deactivation" and "D+D" that an arbitrarily

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designated 10-year hiatus within this continuum of activities is neither desirable nor defensible in terms of achieving timely and significant progress toward "cleanup."

### 5. Effluent Discharges to the Environment

No single facility on the Hanford site has been responsible for greater environmental devastation than PUREX. Over its history of operations, hundreds of millions of gallons of contaminated wastewater were discharged directly to the ground. Such discharges resulted directly in the most areally extensive groundwater contaminant plumes on the site, affecting over 150 square miles and extending from the central plateau to the Columbia River. High concentrations of both radionuclide and hazardous chemicals released from PUREX operations have discharged into the Columbia River since at least the 1960s and will continue long into the future.

For many years, such unconscionable discharges of untreated, highly contaminated wastewater directly to the ground were considered an "acceptable" disposal method by DOE and/or its predecessor agencies. In fact, even though DOE's mission at Hanford is now environmental remediation and restoration, such practices still continue. Established TPA milestones mandate that such unsound and unacceptable practices must stop, but not until June 1995. Until that time, DOE proposes in the PMP to continue injuring natural resources and exacerbating and enhancing migration of existing soil and groundwater contamination in connection with PUREX deactivation and "cleanup," a practice that will require still further resources for additional remediation and restoration in the future. Waste streams will be generated by a number of deactivation activities, including process cooling water, condensates, temporary storage tanks and evaporators, decontamination stations, and laboratory wastes, among others. Large volumes of wastewater also will be generated by decontamination activities such as equipment, cell, and canyon flushing, and from leftover process solutions and waste.

Continued discharge of any volumes of contaminated wastewater to the environment, even if less highly contaminated than historical releases and (supposedly) justified as in conjunction with deactivation/"cleanup" activities, must not occur. It cannot be overemphasized that these practices are part of the problem, and NOT part of the solution. Effluent management during deactivation should be coordinated with current efforts to develop a sitewide groundwater remediation strategy and groundwater protection management plan.

### 6. Transportation of Hazardous Materials

The PUREX/UO<sub>3</sub> deactivation PMP calls for transportation of hazardous materials both on- and off-site in conjunction with completion of the proposed activities. For example,

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remaining PUREX process solvent is listed as a characteristic mixed waste that cannot be transferred to the tanks. All remaining process solvent (volume unknown) is scheduled to be transported off-site to INEL, Idaho Falls, or to a private incinerator, location unspecified. This will involve transporting such materials across the Umatilla Indian Reservation by either road or rail. Incineration would first require transportation of wastes offsite for incineration and then of the residual, and highly contaminated, ash back onsite for permanent storage. Any such efforts will require advance notification of the CTUIR, including disclosure of the amounts, methods, and frequency of shipments, and development of appropriate emergency response procedures and preparation. The Umatilla Tribal Fire Department comprises the only available emergency response team along the I-84 corridor between La Grande and Hermiston, yet virtually no funding for either staff training or the acquisition of necessary equipment has been provided.

Similarly, some deactivation activities will require transport of hazardous materials to Hanford from unspecified offsite locations. These shipments also should be coordinated with the CTUIR, if they will be crossing the Umatilla Indian Reservation.

7. Conclusion

The CTUIR support deactivation and timely completion of D+D activities for former defense-production facilities such as PUREX and UO3. All such activities should be planned, coordinated, and executed within the framework of an integrated sitewide approach to both facility decommissioning and waste management activities. Desired future conditions and end goals of the project should be clearly defined from the outset so that project activities will fully support stated goals. Technical staff need full, open, and timely access to information upon which to evaluate in detail the proposed deactivation plans. Such information would provide a better basis upon which to assess the adequacy and thoroughness of the administrative process and the potential need for updated or more complete NEPA documentation. It appears that stricter controls and better definition of the removal and disposition of remaining hazardous and radioactive materials within the framework of long-term goals for the PUREX and UO3 facilities is needed. Proposals to continue discharging contaminated wastewater directly to the environment, which is an unacceptable historical practice that has directly caused many of today's environmental challenges, must be reevaluated and integrated into a sitewide groundwater remediation and protection management plan. On- and off-site transportation of hazardous and radioactive materials needed for, or generated by, deactivation activities and having the potential to affect the Umatilla Indian Reservation, its residents, and resources should be thoroughly addressed.

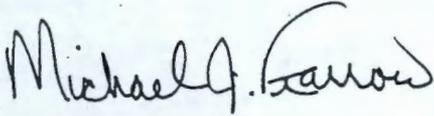
The CTUIR appreciate this opportunity to provide comments on the proposed Project Management Plan for the deactivation of the PUREX and UO3 facilities. Because of the

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numerous questions and issues raised in this letter, we respectfully request a written response within thirty days of your receipt of this letter. If you need any additional information or clarification, please contact either Tom Gilmore, CTUIR Staff Hydrogeologist, or J.R. Wilkinson, CTUIR Hanford Projects Coordinator, at (503) 276-0105.

Sincerely,



Michael J. Farrow

Director  
Department of Natural Resources

cc: Donald Sampson, Chairman, CTUIR BOT  
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