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FINDING OF NO SIGNIFICANT IMPACT
FOR THE
PROCESS EQUIPMENT WASTE AND
PROCESS WASTE LIQUID COLLECTION SYSTEM TASKS
AT THE
IDAHO NATIONAL ENGINEERING LABORATORY

Summary

The U.S. Department of Energy (DOE) has prepared an environmental assessment (EA) for construction related to the Process Equipment Waste and Process Waste Liquid Collection System Tasks at the Idaho National Engineering Laboratory near Idaho Falls, Idaho (DOE EA No. 0437). Based on the analyses in the EA, the DOE has determined that the proposed action is not a major Federal action that significantly affects the quality of the human environment, within the intent of the National Environmental Policy Act (NEPA) of 1969. Therefore, the preparation of an environmental impact statement is not required and the DOE is issuing this Finding of No Significant Impact (FONSI).

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Background

The Resource Conservation and Recovery Act (RCRA) and the State of Idaho Hazardous Waste Management Act (HWMA) regulations require operators of facilities handling hazardous wastes to evaluate and, if necessary, modify existing hazardous waste tank and piping systems to assure containment for these hazardous waste streams. The interim status requirements under these laws require owners and operators to assure proper secondary containment that is compatible with the hazardous waste streams that they contain. The proposed action results from evaluations pursuant to these requirements.

The proposed action would take place at the Idaho Chemical Processing Plant and would modify the process systems used to handle acidic waste streams generated during the dissolution of DOE-consigned nuclear fuels and the subsequent purification and recovery of uranium.

Proposed Action

The proposed action would alter existing collection systems to provide secondary containment of waste lines, tanks, sumps, and pumping devices. This proposed action would consist of installation of approximately 6000 feet of new stainless steel waste lines (varying in diameter from 1/2 inch to 3 inches) and seven small (5-10 gallon) stainless steel tanks, numerous stainless-steel-lined sumps, new jet pumps, and associated monitoring instrumentation. All new waste lines would be installed above floor or ground level. The floors of the facilities would be lined with stainless steel or coated with a waste-compatible coating to ensure secondary containment. New sumps, lined with stainless steel, would be installed to replace waste drains. The new sumps would have leak detection capabilities.

Typically, any solution collected in the sump during processing would be jet pumped back to the process vessels. During external process cell decontamination actions that precede the performance of maintenance activities, solutions collected in the sumps would be jet pumped to the waste system. The function of the systems, therefore, would remain unchanged: to transfer liquid wastes from the fuel and waste processing facilities to existing waste tanks.

The existing buried lines would not be used and would be capped to ensure that no hazardous material could enter the lines. Closure is expected to be accomplished in accordance with a Partial Closure Plan to be coordinated with the State of Idaho Hazardous Materials Bureau.

The goal of the proposed action is to construct a new system which will assist DOE with satisfying the applicable environmental requirements for managing hazardous waste materials. An Independent Professional Engineer Certification assessment of these actions shall be prepared and reviewed by an independent, qualified, and registered Professional Engineer in accordance with 40 CFR 265.192 and/or 40 CFR 265.196 (as appropriate) and IDAPA Title 1, Chapter 5, Section 01.5000 et seq.

Environmental Impacts

Potential environmental impacts (direct, indirect and cumulative) of this proposed action were evaluated in DOE EA No. 0437, including: atmospheric releases of hazardous and radioactive materials and other pollutants; radioactive and nonradioactive liquid effluents; hazardous materials, wastes, and mixed wastes; and impacts that would be associated with

hypothetical accidents during construction or operation of the updated systems. In all cases these evaluations indicated that there would be no significant environmental impacts.

Construction and Operational Impacts

Impacts due to releases of hazardous materials to the environment during construction and normal operations were assessed and determined to be negligible. All construction activities would be performed inside buildings or containment enclosures to mitigate any environmental impact due to dust, fumes or noise. There will be no impacts from the construction activities or facility operation on environmentally sensitive areas (e.g., wetlands, floodplains, habitat of endangered or threatened species, cultural resources, natural areas, prime agricultural lands, or special sources of water). During normal operation, the updated hazardous waste handling systems would perform the same function as existing systems, but the new provisions for containment of any leakage are expected to satisfy current environmental regulations.

Exposure Impacts

Impacts due to radiation exposures received by construction personnel were assessed. Rigid controls exist to ensure that all construction personnel are protected and that exposures will not exceed limits in DOE Orders 5484.1 and 5480.11. These control individual radiation exposure to below an Annual Effective Dose Equivalent (AEDE) of 3 rem/quarter and a maximum of 5 rem/year. Exposure limits during this proposed action would be more restrictive and would control individual whole-body radiation exposures to less than 3 rem/year and 1.8 rem/quarter.

A cumulative radiation exposure of 373 person-rem is expected to be received by the combined decontamination/construction workforce of approximately 250 workers over a six-month period. No adverse health effects would be expected to result from these exposures.

Solid and Hazardous Waste Generation Impacts

Environmental impacts due to waste generation during construction were assessed. Some hazardous mixed waste (e.g., piping with acid residues) and radioactively contaminated waste would be generated. The quantity of the waste that would be generated is small relative to that generated by normal operations. The radioactivity present in material generated as a result of the proposed activity would amount to less than 10 curies total. Seven (7) curies of the total would be present in the liquid waste as a result of decontamination of stainless steel components. This liquid waste would remain at the ICPP. The remaining 3 curies would be present as fixed contamination in concrete stainless steel scrap materials. All of these materials would be handled in accordance with established DOE, EPA and State of Idaho procedures. The impact, therefore, is not considered to be significant.

Alternatives to the Proposed Action

Three alternatives were identified: (1) reroute pipes and use visual inspection instead of secondary containment, (2) construct new facilities, and (3) no action (continue to operate the current facilities without any changes).

Visual Inspection

The current environmental regulations provide for performing visual inspection of hazardous waste tank ancillary equipment on

a daily basis as an alternative to providing secondary containment and leak detection (40 CFR 265.193(f)). This alternative was evaluated for all affected facilities. The majority of hazardous waste transfer piping being replaced with this construction effort is beneath the floors of buildings where it is not possible to visually inspect. The remaining piping is located in the process cells. Because the cells are often inaccessible due to radiation fields, visual inspection is difficult or impossible.

For the reasons stated above, this alternative was not considered reasonable or feasible.

New Facilities

An alternative to the proposed action is to construct new facilities and abandon existing facilities. The new facilities would duplicate the existing processes. The existing facilities would have to operate while new facilities were constructed or extensive new fuel storage would be required to avoid impact on the receipt of recoverable irradiated fuels from defense reactors. Operation of these facilities in the present condition does not assure compliance with current regulations related to the management of hazardous material. The proposed action would still be required to allow operation prior to completion of construction of new facilities. The existing facilities would be required to be decontaminated and decommissioned following shutdown.

Since the proposed action would still be required in addition to undertaking the construction of new facilities, this alternative was not considered reasonable.

No Action

Continuing operations with buried, singly-contained pipe carrying hazardous waste would not meet the regulatory requirements since verification of integrity, as required by these regulations, is not possible.

Therefore, this alternative was not considered reasonable.

Determination

The proposed action does not constitute a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act. Therefore, DOE has determined that an environmental impact statement is not required for the proposed action. This finding is based upon analyses presented in the EA.

Issued at Washington, D.C., this 27 day of June 1990.

Peter N. Brush
Acting Assistant Secretary
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