AGENCY: U.S. Department of Energy

ACTION: Finding of No Significant Impact

SUMMARY: The U.S. Department of Energy (DOE) has prepared an Environmental Assessment (EA), DOE/EA-0984, to assess environmental impacts associated with the deactivation of the N Reactor, and activities to support this work at the Hanford Site, Richland, Washington. The N Reactor operated from 1963 until 1987 in a plutonium production mission. The N Reactor is located in the 100 N Area of DOE's Hanford Site near the City of Richland, Washington. Alternatives considered in the review process included: the No Action alternative; the preferred alternative to deactivate the reactor and thereafter to perform surveillance and maintenance pending future decommissioning decisions; and an alternative addressing discharge of contaminated water to the Columbia River after treatment, instead of to the Effluent Treatment Facility in the 200 East Area as in the preferred alternative.

Based on the analysis in the EA, and considering preapproval comments from the National Park Service, the State of Washington, and the Yakama Indian Nation, DOE has determined that the proposed action is not a major federal action significantly affecting the quality of the human environment within the meaning of the *National Environmental Policy Act of 1969* (NEPA), 42 U.S.C. 4321, et seq. Therefore, the preparation of an Environmental Impact Statement (EIS) is not required.

ADDRESSES AND FURTHER INFORMATION

Single copies of the EA and further information about the proposed action are available from:

Ms. Julie K. Erickson, Director
River Sites Restoration Division
U.S. Department of Energy
Richland Operations Office
P. O. Box 550
Richland, Washington 99352
(509) 376-3603

For further information regarding the DOE NEPA process, contact:

Ms. Carol M. Borgstrom, Director
Office of NEPA Oversight
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585
(202) 586-4600 or (800) 472-2756

PURPOSE AND NEED: DOE needs to place the N Reactor facilities in a condition that enhances worker safety and environmental protection, and reduces the cost of surveillance and maintenance.

BACKGROUND: The N Reactor was the last plutonium reactor constructed and operated at the Hanford Site. It operated from December 1963 until December 1987, when it was placed in standdown status for an extensive maintenance and safety enhancement program. In 1988, DOE ordered N Reactor be placed in cold standby status, which was achieved by October 1990. In July 1991, after evaluating national defense needs, the DOE decided to cease preservation of N Reactor, and to proceed with activities leading to eventual decommissioning.

PROPOSED ACTION: The proposed action is to deactivate the facilities to remove conditions that present a potential threat to human health and the environment and to reduce future surveillance and maintenance requirements. The action will include surveillance and maintenance after deactivation. Deactivation will take about three years and involve about 80 facilities. Surveillance and maintenance will continue until N Reactor and its ancillary facilities are all decommissioned.

Specific actions include: existing equipment would be restarted to support deactivation activities; equipment fluids, hazardous substances and unattached equipment and materials would be removed and characterized, packaged, and transported to the 200 Areas for use, recycling, storage or disposal as waste; basins and tanks would be drained, and contaminated water and residuals would be removed and transported to the 200 Areas for disposal; the 105-N Fuel Storage Basin would be inspected for irradiated fuel fragments, which would be removed, packaged and stored in the basin awaiting future decisions regarding interim storage; contaminated water from the 105-N Fuel Storage Basin and the Emergency Dump Basin would be removed, pretreated as necessary in a facility specially constructed in the 100-N Area, then transported to the permitted Effluent Treatment Facility in the 200 East Area for additional treatment and disposal to the soil; contaminated sediment, hardware, pieces of lithium targets, and irradiated fuel spacers would be removed, packaged as necessary, and transported to the 200 Areas for storage or disposal; radiation zones would be decontaminated and removed or stabilized to fix loose contaminants; support systems such as heating, ventillation, and air conditioning, water and monitors that are not required for future environmental compliance or personnel safety would be de-energized; structural repairs would be made as necessary for future surveillance and maintenance needs; building penetrations would be sealed to prevent entry of animals, and personnel access controls would be installed; and routine maintenance, including inspections, and vermin and weed control would continue.

ALTERNATIVES CONSIDERED: The EA discussed a contaminated waste water disposal alternative, as well as the No Action Alternative.

No-Action Alternative. This alternative would leave the N Reactor facilities in their current condition. Current levels of surveillance and maintenance would be performed to minimize the potential for environmental release, protect workers, and assure compliance with applicable regulations. Electrical distribution, fire protection, sewer, water, telephone, and other communications needed to support active facilities would remain active. Contaminated materials would remain in place.

Discharge to the Columbia River. This alternative would involve performing all activities described in the proposed action with the exception of the method of disposal of the contaminated water. Rather than treating the water at the 200 Area Effluent Treatment Facility, the water would be treated at the 100-N Area and discharged to the Columbia River.

ENVIRONMENTAL IMPACTS: Routine conduct of the proposed action would not result in any significant increase in Hanford Site emissions and effluents. Before beginning the proposed activity, appropriate procedures and administrative controls would be in place to maintain exposure to workers and other onsite personnel to within requirements established by DOE Orders and as low as reasonably achievable principles. Minor additional radiation exposure to either onsite personnel or offsite individuals would be expected from the proposed action. The whole body collective effective dose equivalent (CEDE) to N Reactor and transportation work force would be approximately 199 person-rem over the duration of Proposed Action. Based on a work force of 194 during the deactivation phase the average worker would receive an effective dose equivalent (EDE) of 1 person-rem. The estimated probability of the worker dying from cancer induced by such radiation doses is approximately 4×10^{-4} (1 in 2,500). The projected offsite popuation dose would be about 0.025 person-rem. The probability of any member of the offsite population having a cancer death due to radiation exposure from the Proposed Action would be 1.3×10^{-5}, or one chance in 80,000.

The proposed action would result in the generation of hazardous materials and hazardous, mixed and radioactive wastes. These would be removed, and would be managed and reused, recycled, or disposed of in accordance with applicable regulations.

The 100 N Area is a developed, highly disturbed area. Most activities will take place within existing buildings. No sensitive or critical plant or animal habitat would be affected.

Socioeconomic Impacts

Under either the Proposed Action or the Discharge to the Columbia River alternative, the N Reactor facilities deactivation would require about 194 workers, about 144 more than are currently employed performing surveillance and maintenance. It is expected most of these additional workers are already employed on the Hanford Site, or would be available from the labor pool in the Tri-Cities. As deactivation progresses, the staffing levels would be reduced, to a final total of about 3 to perform surveillance and maintenance. This

increase and reduction represent about 0.8% of the 1994 Hanford Site workforce. Social and economic impacts cannot be quantified at this time because of the ongoing reductions in the Hanford work force and uncertainty about future Hanford budgets.

The No Action alternative would not change current staffing levels, therefore, no socioeconomic impacts are expected.

Cumulative Impacts

The proposed action is not expected to contribute substantially to the overall cumulative impacts from operations on the Hanford Site. Standard Operating Procedures will provide sufficient personnel protection such that exposure to radiological and chemical materials will be kept below DOE guidelines. Deactivation operations will not significantly increase the amount of radioactivity released from total Hanford operations. The wastes generated from the proposed action would not add substantially to waste generation rates at the Hanford Site and would be stored or disposed in existing facilities.

Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires that Federal agencies identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs and activities on minority and low-income populations. This proposed action would occur within the Hanford Site boundaries. As discussed in the EA, no health effects are expected. With the exception of socioeconomic impacts which are unknown, it is not expected that there would be any disproportionate adverse effects to low-income or minority populations in the surrounding community.

Impacts From Postulated Accidents

In addition to environmental impacts that were postulated from routine operations, the EA discussed a range of reasonably foreseeable accident scenarios that could lead to environmental impacts. Scenarios were related to a release of water from the 105-N Fuel Storage Basin either as a release to the Columbia River, or contained in the 105-N Building.

In the case in which the basin water would be released to the Columbia River, it was assumed that the release would occur over a period of 90 days. No probability for this accident was calculated, however, since a basin release has previously occurred on the Hanford Site makes this event reasonably forseeable. The radiation doses from specific radionuclides would total 4×10^{-4} person-rem EDE to the maximally exposed offsite individual. This is 10 times less than the EPA drinking water standard of 4 mrem/yr. Using a health effects conversion factor of 500 latent cancer fatalities (LCF) per million person-rem, the probability of this individual dying of cancer due to this release would be approximately 2×10^{-7} (1 in 5,000,000).

In the case in which the basin water release would be confined within the 105-N Building, no offsite radiological dose consequences were evaluated, because the water would remain within the building, and particulate airborne contamination would remain within the

ventilation envelope of the building where the air is collected and filtered prior to being exhausted from the facility.

DETERMINATION: Based on the analysis in the EA, and after considering the preapproval comments of the National Park Service, the State of Washington, and the Yakama Indian Nation, I conclude that the proposed deactivation of the N Reactor facilities at the Hanford Site does not constitute a major federal action significantly affecting the quality of the human environment within the meaning of NEPA. Therefore, an EIS for the proposed action is not required.

Issued at Richland, Washington, this 1st day of May, 1995.

John D. Wagoner
Manager
Richland Operations Office