U.S. Department of Energy
Oak Ridge Operations, Oak Ridge, Tennessee

FINDING OF NO SIGNIFICANT IMPACT FOR THE UNITED STATES ENRICHMENT CORPORATION INCORPORATED, AMERICAN CENTRIFUGE LEAD CASCADE FACILITY AT PIKETON, OHIO

AGENCY: Department of Energy

ACTION: Finding of No Significant Impact

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) has prepared an Environmental Assessment (EA) for the United States Enrichment Corporation Incorporated's (USEC) American Centrifuge Lead Cascade Facility (Lead Cascade) at the Department of Energy's (DOE) Portsmouth Gaseous Diffusion Plant (PORTS) and DOE is hereby adopting the EA prepared by NRC (January 2004). NRC's Finding of No Significant Impact (FONSI) was approved on January 21, 2004, and published in the Federal Register on January 27, 2004. The EA and resulting FONSI were completed by NRC for issuance of Material License No. 70-7003 to USEC to authorize possession and use of source and special nuclear material at the Lead Cascade. Based on the EA, the NRC concluded that a FONSI was appropriate.

During the NRC's preparation of the EA for the Lead Cascade, DOE cooperated with NRC and provided detailed information regarding DOE activities that will be performed prior to turning over the existing facilities to USEC to begin Lead Cascade upgrade activities. Specifically considered in the NRC EA are the DOE activities associated with the removal and relocation of material and wastes in the Lead Cascade and additional ongoing DOE activities that could be potentially affected by construction and operation of the Lead Cascade Project. During the draft EA comment period, DOE reviewed the document and determined that DOE's comments had been sufficiently addressed within the NRC EA.

PUBLIC AVAILABILITY: Copies of the NRC's EA and FONSI can be located at the NRC's web site (http://www.nrc.gov), and DOE's FONSI is available from:

U.S. Department of Energy
Environmental Information Center
3930 U.S. Route 23 South
Piketon, Ohio 45661

Telephone: (740) 289-3317

DOE/EA-1495

For further information concerning the DOE NEPA process, contact:

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DESCRIPTION OF PROPOSED DOE ACTION:

The purpose of NRC's proposed action is to authorize possession and use of source and special nuclear material at the Lead Cascade in Piketon, Ohio. The Lead Cascade would have up to 240 operable centrifuges for testing in order to provide reliability information on the machines and auxiliary systems for a commercial uranium enrichment facility. The Lead Cascade is operated in a recycle mode where enriched uranium hexafluoride is recombined with depleted uranium hexafluoride prior to being re-fed to the cascade. No product withdrawals will be made, except for sampling purposes. The Lead Cascade would be installed in portions of the existing DOE Gas Centrifuge Enrichment Plant (GCEP) located at PORTS in Piketon, Ohio.

In order for USEC to implement this action, various activities will need to be performed by DOE or its contractor prior to turning over the existing facilities to USEC to begin Lead Cascade upgrade activities. These activities include preliminary facility repairs and modifications; partial relocation of DOE operations; partial or complete cleanout and disposal of material from Building X-3001 (e.g., old centrifuges/equipment/parts, classified material, records, miscellaneous equipment); and disposition of certain wastes including acetone, solvents, RCRA wastes, and oils that are used for assembly and maintenance activities. These materials are reported annually to the state and federal regulatory agencies pursuant to the Superfund Amendments and Reauthorization Act (SARA). In addition, refurbishment of the centrifuge facilities will include the partial closure of a Resource Conservation and Recovery Act of 1976 (RCRA) Part B permitted facility controlled by DOE.

As part of the facility cleanout activities, non-classified materials currently located in the south portion of Building X-3001 will be relocated or properly disposed. Unclassified records and materials in the north portion of the building will also be relocated or properly disposed. Non-regulated solid waste, RCRA waste, solid sanitary/industrial waste, mixed waste, and low-level radioactive wastes may be generated from DOE activities and will be properly disposed in accordance with applicable requirements.

ALTERNATIVES:

No-Action Alternative

The no-action alternative is considered in accordance with the requirements of the Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) Regulations (40 CFR Parts 1500-1508) and provides a baseline against which the proposed action and other alternatives can be compared. Under this alternative, the NRC would not have granted a license to USEC for the possession of small quantities and use of source and special nuclear material. Therefore, had the Lead Cascade license not been approved, DOE would not be compelled at this time to perform the clean-up, disassembly, and waste removal actions in the building.

Alternative 1: Proposed Alternative

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In order for USEC to implement this action, various activities will need to be performed by DOE or its contractor prior to turning over the existing facilities to USEC to begin Lead Cascade upgrade activities. These activities include preliminary facility repairs and modifications; partial relocation of DOE operations; partial or complete cleanout and disposal of material from Building X-3001 (e.g., old centrifuges/equipment/parts, classified material, records, miscellaneous equipment); and disposition of certain wastes including acetone, solvents, RCRA wastes, and oils that are used for assembly and maintenance activities. These materials are reported annually to the state and federal regulatory agencies pursuant to SARA. In addition, refurbishment of the centrifuge facilities will include the partial closure of a RCRA Part B permitted facility controlled by DOE.

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ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION:

The potential environmental impacts of the proposed action and alternatives were analyzed in the EA. All components of the proposed action were reviewed and appropriate agencies concerned with the protection of wildlife, threatened and endangered species, and cultural and historic resources were notified of the proposed action. Through the application of best management practices and with the implementation of appropriate mitigative measures, potential adverse environmental impacts to soils, water resources, and ecological resources would be expected to be minimal. In all cases where potential minor impacts could occur, appropriate mitigative actions would be taken.

The FONSI for the proposed action is based on the following factors which are supported by information and analyses conducted in the EA.

Demography and Socioeconomics

The proposed action would be expected to have positive, short-term, socioeconomic impacts due to the construction and operation of the Lead Cascade. Short-term impacts would include a greater number of construction related jobs. Since there would be no high and adverse impacts which would disproportionately impact any minority or low-income population, no environmental justice concerns are associated with the proposed action.

Land Use

The proposed action would be performed in the existing industrialized area and buildings on the site and would have no negative impacts on land use at the PORTS site.

Geology and Soils

No adverse impacts to geology and soils would result from the proposed action.

Air Quality

Only Buildings X-7726 and X-3001 will have activities that relate to the assembly, testing, and operation of the gas centrifuges that could affect air quality as a result of the proposed action. The operation of the Lead Cascade is not expected to significantly impact air quality and the PORTS site should still remain in attainment with National Ambient Air Quality Standards (NAAQS) for all criteria pollutants. Modeling performed by USEC using 2001 site data assumed a projected annual activity rate of 0.1 millicuries per week, or 0.0052 curies per year. Doses to workers and potential exposures are well within the dose limits presented in 10 CFR Part 20 for workers (50 mSv/yr, or 5,000 mrem/yr) and members of the public (1 mSv/yr, or 100 mrem/yr).

Hydrology and Water Quality

No adverse impacts to hydrology and water quality would occur under the proposed action. The proposed action would take place in the existing DOE buildings in the Lead Cascade which has little water resource requirements and generates a relatively small quantity of hazardous wastes within the closed loop system.

Floodplains and Wetlands

No impacts to floodplains or wetlands would be impacted under the proposed action. All construction and operations would be conducted within existing DOE buildings.

Ecological Resources

No adverse impacts to ecological resources would be expected under the proposed action. All operations would be conducted within existing DOE buildings. Because the proposed action involves a traditional industrial limited landscaping between buildings at the site, a favorable habitat does not exist for species of concern as identified by the U.S. Fish & Wildlife Service. No impacts to ecological resources are anticipated to occur from the proposed action.

Historical, Cultural and Archaeological Resources

No adverse impacts to historical, cultural, or archeological resources would occur under the proposed action. All activities would take place within existing DOE buildings.

Noise

Noise impacts from the proposed action would be negligible. A minor, short-term increase in noise may be associated with construction activities. Increases in vehicular traffic due to the 160 shipments from Oak Ridge would be expected to have a negligible impact on noise over the short term.

Transportation

Transportation impacts associated with the proposed action would be derived from increased commuter traffic and material (radiological and nonradiological) shipments associated with PORTS operations. Shipments of centrifuge components from Oak Ridge, Tennessee, and volume-reduced old centrifuges and components being transported to an authorized classified contaminated waste disposal landfill were addressed in DOE/EA-1451, *Environmental Assessment for the Leasing of Facilities and Equipment to USEC Inc.* Transportation impacts associated with the Lead Cascade construction and operation will be minor, a risk probability of less than 0.007, for the proposed 160 shipments. No modification of roads or other infrastructure would be required to accommodate the additional traffic.

Accidents

Pursuant to 10 CFR Part 70 Subpart H, USEC prepared an Integrated Safety Analysis (ISA) to document its evaluation of the consequences of potential accidents during operations at the proposed Lead Cascade. The ISA also documents the measures that USEC proposes to reduce the risks of credible accidents which include those involving licensed material (uranium hexafluoride [UF_6]) and hazardous material (hydrogen fluoride [HF]) produced from licensed material. NRC found that USEC has provided reasonable assurance that the risks of each credible high-consequence and intermediated consequence event met NRC's performance requirements.

Accidents relating to the refurbishment and decommissioning phases of the Lead Cascade will be the same as the industrial accidents that would be expected to occur from typical construction activities. Because of the small workforce for these two phases, established work control documentation requirements (e.g., procedures and work orders) and other conduct of operations requirements (e.g., housekeeping, training, configuration management, turnover), it is expected that the possibility of accidents during refurbishment and decommissioning would be further reduced. Therefore, the impacts from accidents expected from refurbishment and decommissioning activities should be minimal.

Cumulative Impacts

Previous NEPA documents for PORTS present the cumulative impacts from actions of past decisions and any reasonably foreseeable future actions at PORTS (DOE, 2001a; DOE, 2001b; and DOE, 1997). The recently published preliminary draft Environmental Impact Statement for the proposed depleted UF6 conversion facilities at PORTS was also reviewed to ensure that any foreseeable potential actions at the site are taken into consideration (DOE, 2003). The results of these reviews demonstrate that the cumulative environmental impacts at PORTS from the construction, operation, and decommissioning of the Lead Cascade are not consequential and are small. Examples include the following situations:

- Air Quality: Air emissions from current and future actions from the gaseous diffusion plant do not violate any of the NAAQS. Proceeding with the proposed action, in combination with existing air emissions, will also not violate any of the NAAQS.

- The maximally exposed individual (MEI) annual dose from the waste management activities was determined to receive a radiation dose from airborne radionuclides of 0.0026 mSv (0.260 mrem) (Section 4.4.12 of DOE, 1997) while the proposed action will increase the MEI dose by 2.3×10^{-4} mSv per year (0.023 mrem per year).

- During 2001, approximately 3,000 m^3 (105,944 ft^3) from various waste streams at the PORTS site were disposed offsite, while the proposed action is estimated to only annually produce 125 m^3 (4,400 ft^3) of solid and 4,540 liters (1,200 gal) of liquid low-level radioactive waste. Approximately 9,817 m^3 (346,684 ft^3) of classified, contaminated

negligible or insignificant.

DETERMINATION:

Based on DOE's analyses of NRC's EA and its resulting FONSI, DOE has determined that the final EA and FONSI adequately address DOE's actions related to the USEC Lead Cascade Project and, therefore, DOE is hereby adopting the EA prepared by NRC as DOE/EA-1495, *Environmental Assessment of the USEC Inc. American Centrifuge Lead Cascade Facility at Piketon, Ohio*. Furthermore, DOE has determined that 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 Protection Act* of 1969 (NEPA), 42 U.S.C. § 4321, et seq. Therefore, the preparation of an Environmental Impact Statement is not required.

Issued in Oak Ridge, Tennessee, this 25th day of March, 2004.

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Oak Ridge Operations Office