



# U.S. Department of Energy

## Categorical Exclusion Determination Form

**Proposed Action Title:** Transfer, Transportation, Management, and Redistribution of Heavy Water at Oak Ridge National Laboratory (3967CXD)

**Program or Field Office:** Office of Science - ORNL

**Location(s) (City/County/State):** Oak Ridge, Tennessee

**Proposed Action Description:**

The U. S. Department of Energy Isotope Program managed by the Office of Nuclear Physics proposes to transfer and transport 32 Metric Tons (MT) of heavy water from Oman to Oak Ridge National Laboratory (ORNL), located in Oak Ridge, Tennessee. The proposed action would involve the transfer, transport, management, and redistribution of 32 MT of nuclear or commercial grade heavy water which was produced overseas and is being offered for purchase by an international seller. Following shipment of the material to ORNL, the proposed action would additionally include temporary storage; possible sampling and analysis; redistribution of the heavy water by resale to commercial purchasers; and potential retention of a portion of the material by ORNL to meet future needs and in support of near term research and development efforts at the Spallation Neutron Source (DOE/EIS-0247 *Final Environmental Impact Statement for Construction and Operation of the Spallation Neutron Source*, April 23, 1999). Other approved end users would purchase the heavy water from DOE's Isotope Program (IP) and pay for subsequent transport of the material from ORNL to their facilities.

Heavy water is isotopically enriched and chemically purified water in which the concentration of the deuterium isotope of hydrogen has been increased from the naturally occurring abundance of around 0.01% to at least 99.8% (from this seller). Heavy water is used in certain nuclear reactors or accelerators as a moderator, in a variety of scientific research applications, and in certain medical tests. Heavy water may contain impurities, including tritium; however, the provenance of this material suggests it should contain no tritium, and DOE's analyses of samples of the material have found no detectable amount of tritium and low or undetectable amounts of other impurities.

ORNL is operated by UT-Battelle for DOE-OSO. The ORNL Isotope Program (ORNL-IP) is recognized as a world leader in the research and development, production, analysis, management and transport technology for isotopic materials. ORNL-IP has available space within existing facilities sufficient to manage, temporarily store, and redistribute the heavy water, and therefore no additional capabilities or facilities would be needed to complete the proposed transfer and transportation of this material. Management, temporary storage, and staging for redistribution of the material would take place in Building 6000 or within other suitably equipped facilities at ORNL.

UT-Battelle would purchase the heavy water on behalf of DOE and arrange for transport in accordance with applicable national and international laws and regulations, and execute the scope of this project in such a manner so as to minimize cost and risk to public health, the environment, and ongoing operations within the ORNL-IP. The ORNL-IP possesses the necessary expertise and infrastructure to successfully facilitate this effort.

The heavy water is packaged in suitable 50 kg kegs and all potential receiving facilities have been so informed and agree to the technical suitability of the kegs. These 50 kg kegs utilized for shipment will become property of the receiving end use facility, together with the contents. Purchaser(s) would assume title and be responsible for disposition in accordance with applicable laws and regulations when the containers are emptied and no longer needed. It is expected that the emptied and cleaned containers could be recycled for their metal content.

Any wastes generated by the proposed activity are expected to be managed through existing, standard waste management and/or recycling programs. Stored materials would be managed so as to prevent discharges to storm drains and/or waters of the state.

This action falls under Section 5.1.1.3.A. of the Cultural Resource Management Plan (DOE/ORO 2085, July 2001). This facility is not located within the ORNL Historic District, and has been surveyed in accordance with Section 106 of the National Historic Preservation Act. Building 6000 is not considered eligible for inclusion in the National Register of Historic Places.<sup>1</sup>

<sup>1</sup>Architectural/Historical Assessment of the Oak Ridge National Laboratory, Oak Ridge Reservation, Anderson and Roane Counties, Tennessee, ORNL/M-3244, January 1994.

**Categorical Exclusion(s) Applied:**

B1.24 - Property transfers

B1.30 - Transfer actions

For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, including the full text of each categorical exclusion, see Subpart D of 10 CFR Part 1021.

Regulatory Requirements in 10 CFR 1021.410(b): (See full text in regulation)

The proposal fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D.

To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or

(including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal.

The proposal has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The above description accurately describes the proposed action, which reflects the requirements of the CX cited above. Therefore, I recommend that the proposed action be categorically excluded from further NEPA review and documentation.

Program Point of Contact:

*Martha J. Kass*

Martha J. Kass, DOE-OSO  
Director, Operations and Oversight Division

*2/24/2016*

Date Determined:

Based on my review of the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1B), I have determined that the proposed action fits within the specified class(es) of action, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

NEPA Compliance Officer:

*James T. Elmore*

James Elmore, DOE OR-ISC  
NEPA Compliance Officer

*2/25/16*

Date Determined: