



U.S. Department of Energy

Categorical Exclusion Determination Form

Submit by E-mail

Proposed Action Title: NEPA 4949, Manufacturing Sciences Corporation (MSC), Cold Hearth Furnace

Program or Field Office: Location(s) (City/County/State): Y-12 National Security Complex / NNSA Production Office / Oak Ridge, TN

Proposed Action Description:

The Y-12 National Security Complex's proposed action is to contract MSC to install, test, and operate an electron beam Cold Hearth Melting System (CHM), procured by the Lawrence Livermore National Laboratory from ALD Vacuum Technologies GmbH in Germany. The CHM would support Y-12 research and development (R&D) of casting and recycling depleted uranium (DU) alloys under vacuum, using an electron beam cold hearth refining process. This technology cannot be housed at Y-12 Development (Buildings 9202 and 9203) and limited floor space prohibited the original plan to install at the Teledyne Brown Engineering, Test and Demonstration Facility (please see NEPA 4909). Under contract to Consolidated Nuclear Security (CNS), MSC would provide the following accommodations: controlled and secured access, active radiation areas, DU radiological license, grit sand blasting capability, DU rolling operations capability in support of the CHM system, and the available space to accommodate the CHM, wire drawing equipment, and other associated Y-12 R&D activities. MSC would conduct R&D work on modern technologies, or on additional applications of existing technology, that could potentially be deployed at the Y-12 or other federal agencies. Work for other federal agencies is possible and within the bounds of this work scope. Demonstration actions undertaken at MSC are not for commercial deployment.

Categorical Exclusion(s) Applied:

B3.6 - Small-scale research and development, laboratory operations, and pilot projects

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):

- The proposal fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. See paragraph above for specific categorical exclusion(s) applied.
- The classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B include conditions that are integral elements of the class of actions which must be satisfied in order to determine that a proposal is categorically excluded under Appendix B. Specifically, 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 Executive Orders;
 - (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (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:
 - (i) Property (such as sites, buildings, structures, and objects) of historic, archeological, or architectural significance designated by a Federal, state, or local government, Federally recognized Indian tribe, or Native Hawaiian organization, or property determined to be eligible for listing on the National Register of Historic Places;
 - (ii) Federally-listed threatened or endangered species or their habitat (including critical habitat) or Federally-proposed or candidate species or their habitat (Endangered Species Act); state-listed or state-proposed endangered or threatened species or their habitat; Federally-protected marine mammals and Essential Fish Habitat (Marine Mammal Protection Act; Magnuson-Stevens Fishery Conservation and Management Act); and otherwise Federally-protected species (such as the Bald and Golden Eagle Protection Act or the Migratory Bird Treaty Act);
 - (iii) Floodplains and wetlands (as defined in 10 CFR 1022.4, "Compliance with Floodplain and Wetland Environmental Review Requirements: Definitions," or its successor);

- (iv) Areas having a special designation such as Federally- and state-designated wilderness areas, national parks, national monuments, national natural landmarks, wild and scenic rivers, state and Federal wildlife refuges, scenic areas (such as National Scenic and Historic Trails or National Scenic Areas), and marine sanctuaries;
 - (v) Prime or unique farmland, or other farmland of statewide or local importance, as defined at 7 CFR 658.2(a), "Farmland Protection Policy Act: Definitions," or its successor;
 - (vi) Special sources of water (such as sole-source aquifers, wellhead protection areas, and other water sources that are vital in a region); and
 - (vii) Tundra, coral reefs, or rain forests;
- 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. Extraordinary circumstances are unique situations presented by specific proposals, including, but not limited to, scientific controversy about the environmental effects of the proposal; uncertain effects or effects involving unique or unknown risks; and unresolved conflicts concerning alternative uses of available resources.

The proposal has not been segmented to meet the definition of a categorical exclusion. Segmentation can occur when a proposal is broken down into small parts in order to avoid the appearance of significance of the total action. The scope of a proposal must include the consideration of connected and cumulative actions, that is, the 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 §1021.211 of this part concerning limitations on actions during EIS preparation.

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:

Date Determined:

Mary H. (MHX)
Hitson

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Date: 2021.03.01 09:20:45 -05'00'

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