



# U.S. Department of Energy Categorical Exclusion Determination Form

Proposed Action Title: MOLLER MIE Project – TJSO-SC-20-01

Program or Field Office: Thomas Jefferson Site Office

Location(s) (City/County/State): Newport News, VA

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Proposed Action Description:

This project involves the design, construction, and installation of experimental equipment for the Measurement of a Lepton-Lepton Electroweak Reaction (MOLLER) experiment to be located in Hall A in the Continuous Electron Beam Accelerator Facility (CEBAF) at the Thomas Jefferson National Accelerator Facility (TJNAF) in Newport News, Virginia. Testing and pre-assembly will occur in Building 58, the Large System Assembly and Test (LSAT) facility, and the cryogenics target lab located in Building 90. The goal of this project is to provide design and modification to Hall A systems to support performance of the MOLLER experiment.

The entire project would be located within the TJNAF on Department of Energy (DOE) property. The MOLLER Project has the following principle elements: Liquid Hydrogen Target; Spectrometer; Integrating Detectors; Tracking Detectors; Hall A Infrastructure and Integration; and Data Acquisition (DAQ) and Trigger. Support equipment for the MOLLER experiment will require connections to Hall A infrastructure including electrical, Low Conductivity Water (LCW), and cryogenics cooling systems. The project will also include the design and installation of shielding located around the beam line and target to ensure radiation protection levels outside of Hall A remain below the threshold requirements as defined in EA-1534.

There would be minor impacts to the environment as the majority of work associated with the project will occur inside of existing buildings and structures at the facility. Proposed impacts include the minor generation of solid waste and liquid waste. All waste generated from the project will be properly disposed of at a licensed solid waste disposal facility or Transport, Storage, and Disposal Facility as required by applicable State and Federal waste management regulations.

Cultural Resources and Historic Preservation was addressed through coordination with the Virginia Department of Historic Resources (VADHR) as referenced in DOE/EA-1384 (*Proposed Improvements at the Thomas Jefferson National Accelerator Facility*). DOE was advised by the VADHR that their archives indicated no recorded architectural or archaeological resources within or adjacent to the property and no adverse impacts to archaeological and historic resources would be expected from improvements at the TJNAF.

The proposed action would not impact any threatened/endangered species or protected habitat, wetlands or waters of the U.S., or cultural/historical resources. The proposed action would not be part of an ongoing Environmental Assessment or Environmental Impact Statement. The proposed action would not be related to any extraordinary circumstances or other actions with potentially significant impacts.

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Categorical Exclusion(s) Applied:

B1.31 - Installation or relocation of machinery and equipment

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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 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, 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.

**TJSO Federal Project Manager:** Bryan Foley

**Date Determined:**

**TJSO NEPA Coordinator:** Patricia Hunt

**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:** Peter Siebach

**Date Determined:**