CX Posting No.: DOE-ID-INL-23-074

SECTION A. Project Title: TRIGA Storage in CPP-651

SECTION B. Project Description and Purpose:

The Department of Energy (DOE) needs a Training, Research, Isotopes, General Atomics (TRIGA) fuel receipt, inspection, and storage facility. The DOE will be fabricating approximately 960 TRIGA fuel elements for university reactor facilities and 45 to 50 fuel elements for the NRAD facility located at the Idaho National Laboratory (INL) over the next 10 years. Due to Nuclear Regulatory Commission (NRC) license possession limitations at the reactor facilities, the TRIGA fuel must be stored until spent fuel is removed from the facilities which will make space available for receiving the fresh fuel at the reactor facilities.

TRIGA International is estimating that their annual fabrication throughput rate will be approximately 100 fuel elements. TRIGA International has storage capacity for 200 fuel elements on site in Romans, France. Once TRIGA Fuel storage in France reaches capacity, fuel will need to be shipped to the INL and University Reactor Facilities that are able to receive fuel directly. It is anticipated that one shipment of approximately 100 fuel elements will be shipped to the TRIGA fuel receipt, inspection and storage facility annually. It is forecasted that the fuel storage located at TRIGA International will reach storage capacity in approximately 2025. The new TRIGA fuel receipt, inspection and storage facility will be needed by that time so that fabrication activities can continue at the TRIGA fuel fabrication facility. The shipments from the TRIGA fuel receipt, inspection and storage facility to the selected universities is still to be determined, but for planning purposes, it is anticipated approximately two packaging and shipment activities annually, one to the storage facility and one directly to a university. It is estimated that a maximum of 600 fuel elements would be stored at the facility at any time. Universities have forecasted that approximately 570 of the 960 fuel elements being fabricated will not be needed until after 2030. The remaining 390 will be shipped either directly to university reactor facilities or from the TRIGA fuel receipt, inspection and storage facility to the universities between the last quarter of FY-23 and 2030.

Based on several storage location evaluations (see INL/RPT-23-72222, Evaluation of Options for Providing a Centralized Storage Capability for Unirradiated TRIGA) it is recommended that the Material Security & Consolidation Facility (CPP-651) located at Idaho Nuclear Technology and Engineering Center (INTEC), would serve DOE-NE as the best long-term storage and shipping facility for TRIGA research fuel. This option presents the most likely option for meeting the TRIGA International production schedule and objective of meeting the safe storage and centralized shipping location to support the Department and end users of TRIGA fuel.

All of the fuel elements will be inspected on arrival at the CPP-651 facility. If any are found to be damaged or unacceptable due to inspection criteria, they would be returned to the supplier, TRIGA International, for disassembly and replacement per their guarantee clause of the contract.

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions

NA

Discharging to Surface-, Storm-, or Ground Water

NA

Disturbing Cultural or Biological Resources

Cultural: Pursuant to the 2023 Programmatic Agreement, this federal undertaking is excluded from Section 106 review as the proposed activity has little to no potential to cause effects to historic properties.

Generating and Managing Waste

NA

Releasing Contaminants

NA

Using, Reusing, and Conserving Natural Resources

NA

Environmental Justice

NA

SECTION D. Determine Recommended Level of Environmental Review, Identify Reference(s), and State Justification: Identify the applicable categorical exclusion from 10 Code of Federal Regulation (CFR) 1021, Appendix B, give the appropriate justification, and the approval date.

For Categorical Exclusions (CXs), the proposed action must not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, or similar requirements of Department of Energy (DOE) or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment or facilities; (3) disturb hazardous substances, pollutants, contaminants, or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources (see 10 CFR 1021). In addition, no extraordinary circumstances related to the proposal exist that would affect the significance of the action. In addition, the action is not "connected" to other action actions (40 CFR 1508.25(a)(1) and is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1608.27(b)(7)).

References: B1.30 "Transfer actions", DOE/EIS-0203 "Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Final Environmental Impact Statement "

Justification: B1.30 Transfer actions. Transfer actions, in which the predominant activity is transportation, provided that (1) the receipt and storage capacity and management capability for the amount and type of materials, equipment, or waste to be moved already exists at the receiving site and (2) all necessary facilities and operations at the receiving site are already permitted, licensed, or approved, as appropriate. Such transfers are not regularly scheduled as part of ongoing routine operations.

Department of Energy Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Final Environmental Impact Statement

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act) ☐ Yes ☒ No

Approved by Robert Douglas Herzog, DOE-ID NEPA Compliance Officer on: 1/8/2024