

DOE-ID NEPA CX DETERMINATION

SECTION A. Project Title: Fuel Fabrication Line for Advanced Reactor Fuel Research, Development and Testing – University of Texas at San Antonio

SECTION B. Project Description

The University of Texas at San Antonio (UTSA) proposes to expand the existing fuel fabrication capability of its Extreme Environment Materials Laboratory (EEML) to include a double glovebox fabrication line, (four workstations with a total of 2.8 m² of workspace), with an integrated, refractory furnace capable of sintering GSI-21-25241 Sooby-UTSA 3 monolithic fuel samples and other relevant ceramic and intermetallic samples at temperatures in excess of 2000°C. The proposed capability will be customized with design priority focused on the production of advanced and conventional uranium-bearing fuel samples, specifically UC, UN, U₃Si₂, their composites, and doped forms of these fuels, of uniform geometry (pellets) with high density (>90% theoretical density) for future collaborative proposals in support of the DOE-NE and Nuclear Science User Facilities (NSUF) missions. The EEML's existing fabrication capabilities, including a Centorr Tri-Arc melt furnace, three welding power supplies, and 11kW chiller, will be integrated with the glovebox fabrication line proposed. The existing chiller that cools the arc melt furnace will be shared among the arc melt furnace and refractor furnace that will be adapted to the glovebox line. In addition, a glovebox-sized Carver press, Spex Mill, punch and dye sets, and sieves will be relocated to the fabrication line. The requested equipment will expand UTSA's capabilities and research portfolio and provide research, training, and educational opportunities for its students.

SECTION C. Environmental Aspects / Potential Sources of Impact

The glovebox facility is to be commissioned with house depleted uranium, for which UTSA has a license to work and store. No environmental hazard is anticipated. The university has procedures in place to handle any waste that will be generated through this project. The action would not create additional environmental impacts above those already occurring at the university.

SECTION D. Determine the Level of Environmental Review (or Documentation) and Reference(s): Identify the applicable categorical exclusion from 10 CFR 1021, Appendix B, give the appropriate justification, and the approval date.

Note: 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, including requirements of DOE orders; 2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities; 3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; 4) adversely affect environmentally sensitive resources. In addition, no extraordinary circumstances related to the proposal exist which would affect the significance of the action, and the action is not "connected" nor "related" (40 CFR 1508.25(a)(1) and (2), respectively) to other actions with potentially or cumulatively significant impacts.

References: B1.31 Installation or relocation and operation of machinery and equipment (including, but not limited to, laboratory equipment, electronic hardware, manufacturing machinery, maintenance equipment, and health and safety equipment), provided that uses of the installed or relocated items are consistent with the general missions of the receiving structure. Covered actions include modifications to an existing building, within or contiguous to a previously disturbed or developed area, that are necessary for equipment installation and relocation. Such modifications would not appreciably increase the footprint or height of the existing building or have the potential to cause significant changes to the type and magnitude of environmental impacts.

Justification: The activity consists of the acquisition, integration, installation, and commissioning of equipment to enable the fabrication of relevant conventional and advanced reactor fuel forms.

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

Approved by Jason Anderson, DOE-ID NEPA Compliance Officer, on 07/23/2021.