DOE-ID NEPA CX DETERMINATION
Idaho National Laboratory

CX Posting No.: DOE-ID-INL-23-010

SECTION A. Project Title: HALEU Fuel Material Acquistion for Westinghouse eVinci

SECTION B. Project Description and Purpose:

Public Abstract

Westinghouse and INL will cooperate in the evaluation, acquisition, and distribution among INL and ORNL/TRISO-X ZPPR pin uranium oxide materials or other appropriate uranium materials for use in Westinghouse TRISO fuel fabrication.

SCOPE

Duration of PTS

The period of performance of this PTS is twelve (12) months for HEU and HALEU preparation, gamma scan of targeted pins, and transportation of uranium materials to ORNL/TRISO-X. Handling and shipping of fuel may overlap with similar PTS covering uranium needs for further Westinghouse eVinci TRISO testing.

Technical Objectives

The objective of this PTS is to establish an agreement for INL to prepare and provide to ORNL/TRISO-X HEU and HALEU fuel material for the Westinghouse eVinci testing program. Westinghouse and INL will develop a uranium preparation and delivery schedule and any financial agreement needed for the fuel materials. Westinghouse (for fuel fabrication) and ORNL representatives (for facility handling and down-blending limits) will define the specifications of acceptable HEU and HALEU materials in subsequent communications to INL as part of this agreement.

Phases of the Project

Phase 1: ZPPR Pin Uranium Oxide Material Evaluation, Gamma Scan, and HEU/HALEU Specifications
Phase 1 covers actions by INL to confirm the availability of the 46% and 16% rods, perform gamma scanning of targeted 46% rods, and shipping schedule of available uranium material. W/INL/ORNL are in the process of confirming via examination that the desired uranium material (specifically the 46% enriched ZPPR pin uranium oxide material) will meet Westinghouse and ORNL HEU and HALEU material and activity specifications. In the event that this material is unacceptable following the gamma scan further execution of this agreement will be evaluated for suitability. In the event that the gamma scan determines unacceptable levels of fission products, then Phase 2 of this agreement will not be executed.

Phase 2: Handling and Delivery of HEU and HALEU to ORNL

Phase 2 covers the handling and preparation of INL fuel material (ZPPR pin uranium oxide material) for shipping. Westinghouse requests INL to pack the uranium oxide pins for sub-critical transportation after gamma scanning to ORNL. On an agreed upon schedule HEU and HALEU will be transported under INL cognizance to ORNL in order for it to be ultimately used for TRISO fuel production (TRISO-X) and eVinci microreactor testing.

Waste generation will include:

- 5 gallons of suspect LLW waste from wipes and used PPE and 5 gallons of industrial (cold) waste.

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

NA

Generating and Managing Waste

NA

Releasing Contaminants

When chemicals are used during the project there is the potential for spills that could impact the environment (air, water, soil).

Using, Reusing, and Conserving Natural Resources

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:

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

Justification:

B3.6 Small-scale research and development, laboratory operations, and pilot projects. Siting, construction, modification, operation, and decommissioning of facilities for small-scale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.

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

Approved by Jason L. Anderson, DOE-ID NEPA Compliance Officer on: 04/24/2023.