

HALEU for Fuel Development and Microreactor Demonstration at Idaho National Lab

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Goal

Support United States leadership in the development and demonstration of nuclear energy technologies – specifically commercially viable microreactor technologies by providing a source of High-Assay Low Enrichment Uranium and opportunities for siting demonstration microreactors on the Idaho National Laboratory (INL).

Background

INL is recovering an inventory of HALEU from used EBR-II reactor fuel. The material contains residual impurities and radioactive contamination that would require glovebox handling for fuel fabrication or would otherwise require further decontamination processing.

Assumptions

- Approximately 10 Metric tons of HALEU material could be available by 2028.
- HALEU/Fuel will remain at Idaho National Laboratory
- Successful applicants will be selected to negotiate a CRADA with the Idaho National Lab
- The applicant will fund capital and operational costs for fuel fabrication, fuel qualification, microreactor demonstration, and post-demonstration disposition.
- DOE will utilize the site use permit process to facilitate industry activities at the Idaho National Lab.
- Technical, regulatory, and other support may be provided by DOE/DOE Laboratories as needed by the applicant

Content of Application (draft)

- Overall description of microreactor design
- Description of fuel form, quantity of HALEU material required, fabrication process and ability to use material being provided by INL
- Licensing/authorization approach
- Microreactor demonstration plan overview, including demonstration objectives, schedule and milestones
- INL / DOE technical, infrastructure, and other support required
- Siting requirements
- Plan for disposition of reactor after demonstration
- Funding plan to perform demonstration including fuel fabrication, fuel qualification, microreactor fabrication, licensing, microreactor demonstration and post-demonstration disposition activities
- Commercialization plan for deployment after demonstration

Preliminary Time Line

- 15 Jul Issue draft Notice of Opportunity for industry comments
- 30 Jul Industry day
- 14 Aug Issue Notice of Opportunity
- 16 Oct Applications due
- 12 Dec Selections announced

Feedback and Questions:

Please provide feedback and questions to:

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