

HALEU Allocation Process

I. Introduction

The United States (U.S.) must expand its use of nuclear energy to achieve the national goals set by the Biden-Harris Administration to enhance energy security and achieve a 100 percent clean electric grid by 2035 with net-zero emissions by 2050. Deploying advanced nuclear reactors is an important part of the Nation’s strategy to increase access to clean energy, create new economic opportunities for American workers, advance scientific knowledge, and reestablish the U.S. as a global leader in nuclear technologies. Many of the advanced reactor designs under development in the U.S. require high-assay low-enriched uranium (HALEU)—uranium enriched between above 5 percent and less than 20 percent with uranium-235—to achieve smaller designs, longer operating cycles, and increased efficiencies over today’s commercial reactors.¹

II. Purpose and Background

This document describes: (1) the process for interested parties to request HALEU from the Department of Energy (DOE); (2) the considerations and criteria that will be used to evaluate requests; (3) how requests for HALEU will be prioritized; and (4) how HALEU will be provided and monitored. It also describes the statutory provisions relevant to distribution of HALEU.

Statutory Provisions

Section 53 of the Atomic Energy Act (“AEA”), as amended (codified at 42 U.S.C. § 2073) authorizes DOE to distribute special nuclear material (which includes HALEU) for a variety of research and development, commercial, and other activities determined by the Secretary as appropriate in carrying the purposes of the AEA. Distributions, occurring after December 31, 1970, to operators of reactors licensed under Section 103 or 104(b) of the AEA for activities under such license must be by sale “unless otherwise authorized by law.”

Section 2001(a)(1) of the Energy Act of 2020 (Public Law 116-260, Div. Z (Dec. 27, 2020) (codified at 42 U.S.C. § 16281(a)(1))) requires the Secretary of Energy to “establish and carry out, through the Office of Nuclear Energy, a program to support the availability of HALEU for civilian domestic research, development, demonstration, and commercial use” (“HALEU Availability Program”). In carrying out the HALEU Availability Program, the Secretary shall consider options for acquiring or providing HALEU from DOE-owned stockpiles or using

¹ HALEU provides a higher concentration of fissile material, improving reactor fuel energy density to either obtain higher powers or longer fuel cycle times in reactor designs, while also enabling these designs to be more compact compared to conventional light water reactor-based nuclear power plants.

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enrichment technology to make that material available to members of a statutorily-mandated consortium for commercial use or demonstration projects.

Section 3131(h) of the National Defense Authorization Act for FY 2024 (Public Law 118-31 (Dec. 22, 2023)) (“NDAA 2024”), which establishes the “HALEU for Advanced Nuclear Reactor Demonstration Projects Program” (“Section 3131(h)”), requires DOE to immediately accelerate (and as necessary) initiate activities to make available from inventories or stockpiles owned by DOE and made available to the consortium, HALEU for use in advanced nuclear reactors that cannot operate with lower enrichment levels or on alternate fuels. Priority must be given to making HALEU available to the two Pathway 1, Advanced Reactor Demonstrations award recipients (“Pathway 1 Recipients”) – with additional HALEU to be made available to other advanced nuclear reactor developers as DOE determines to be appropriate. In addition, Section 3131(h) requires the Secretary to consider and implement, as necessary, all viable options to meet the needs and schedules of advanced nuclear reactor developers, including to seek to make available 21 metric tons (“MT”) of HALEU pursuant to the following schedule: 3 MT by September 30, 2024, 8 MT by December 31, 2025, and 10 MT by June 30, 2026.

Under both Section 2001 and Section 3131, DOE may only make available HALEU that is not needed for national security. *See* Sec. 2001(a)(4) (specifying that the Secretary shall only make available to consortium members for commercial or demonstration project use material that “the President has determined is not necessary for national security needs, provided that this available material shall not include any material that the Secretary may determine to be necessary for the National Nuclear Security Administration or other critical Departmental missions.”) *See also* NDAA 2024, Sec. 3131(m) (specifying the same). In addition, Congress indicated that DOE should consider and implement all viable options to make HALEU available in a manner that is sufficient to maximize the potential to meet the needs and schedules of advanced nuclear reactor developers without impacting existing DOE missions. *See* NDAA 2024, Sec. 3131(b)(2)(A), (h)(3)(A)(v).

Availability of HALEU for Distribution

To support the availability of HALEU, the Department is pursuing options for acquiring HALEU from multiple sources to meet near-term (i.e., before 2027) needs. These sources include material from surplus stockpiles currently being managed at DOE and NNSA facilities across the U.S. such as DOE-owned uranium located at the following separate locations: the Y-12 National Security Complex in Tennessee, the Savannah River Site in South Carolina, and the Idaho National Laboratory. In addition, the Department is supporting the production of HALEU supplies from the new enrichment capability at the Piketon plant at the DOE Portsmouth Site. Given DOE’s obligation to seek to make 21 MT of HALEU available to advanced nuclear reactor developers by June 30, 2026, ensuring these existing sources of HALEU materials can be made available in a timely manner and in the form(s) needed to support advanced nuclear reactor developers is a DOE priority.

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In addition, the Department is in the process of planning to acquire HALEU produced through domestic commercial enrichment capacity with available appropriations. Specifically, DOE issued Requests for Proposals for deconversion services in November 2023 and for HALEU enrichment services in January 2024. See [HALEU Deconversion Services RFP](#) and [HALEU Enrichment Acquisition RFP](#). Thus, DOE expects to have domestic commercial enrichment capacity for HALEU available in the 2027 timeframe.

III. Request Process

DOE will review requests for HALEU upon receipt of a completed request form (see Appendix A) submitted via email to haleuprogram@nuclear.energy.gov. Any pending requests for HALEU submitted prior to the date of publication of this HALEU request process ***should be resubmitted in final form in 30 days***. DOE will confirm receipt of the request to the requestor and expeditiously complete an initial review of the request for completeness. If necessary or appropriate, DOE may request additional information from the request to assist DOE's review.

IV. Federal Government Evaluation and Prioritization

DOE will begin evaluating requests 30 calendar days after publication of the HALEU request form (Appendix A). As discussed above, as new HALEU requests are received, DOE will review them and endeavor to notify an applicant whether it can fulfill the request within 30 days from the application's receipt.

Evaluation of Requests

DOE will consider the following factors when evaluating a HALEU request:

- Whether the intended project involves a government-funded program, an existing public-private partnership, or cost-shared agreement with DOE.
- Whether the potential recipient's stated use for the requested HALEU is consistent with DOE's objective to support: (1) the establishment of a sustainable HALEU supply chain; (2) DOE's research and development mission; (3) partnerships with universities to advance innovation and develop future human capital; and (4) efforts at technology development and deployment of advanced nuclear technologies.
- Whether the request provides a well-developed schedule with milestones clearly describing the status of licensing and regulatory approaches needed to support utilization.
- Whether the request provides objective evidence that the requesting entity has access to the capabilities to use the HALEU (e.g., capability to manufacture fuel for an initial core, capability to perform R&D or experiments to support fuel qualification or validate

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design parameters, the ability to meet transportation and shipping requirements, and the capability to provide licensed storage solutions).

- Subject to the evaluation and the required prioritization of certain requests, whether the requested HALEU (both in form and amount) is readily available in the DOE inventory. If not, whether the material will be readily available within the requestor's schedule. Consideration will be given to (1) the amount of material requested as it relates to the currently available HALEU inventory, (2) the availability schedule sought by the applicant for the requested HALEU, and (3) how that availability schedule would impact other HALEU requests.

Prioritization

Section 3131(h) requires DOE to prioritize making HALEU available on the schedule needed for use in the X-Energy Demonstration Reactor and the Terra Power Sodium Demonstration Reactor, the awardees under the Funding Opportunity Announcement ((DE-FOA-0002271) for Pathway 1 Advanced Nuclear Reactor Demonstrations. Factors DOE will consider in determining how much and when to allocate to these demonstration projects include, among others, whether DOE expects to acquire sufficient HALEU in the future to meet the Pathway 1 Recipients' need on the schedule provided and whether the HALEU available for distribution is in a form that the Pathway 1 Recipients can use. DOE, at its discretion, may then allocate any additional HALEU to other advanced nuclear reactor developers (including demonstration projects) in accordance with NDAA 2024, Sec. 3131(h).

While Section 3131 of the NDAA 2024 evinces a Congressional intent to support the development of advanced nuclear reactors through the provision of HALEU, DOE is also mindful that HALEU may also be needed for existing programs, including R&D, and for commercial reactors. Accordingly, if there is insufficient supply to satisfy all HALEU requests, preference will be given to those activities that are most likely, in the opinion of the Department, to best further its missions.

V. Documents Required for Transfer of HALEU to Approved Requestors

For approved HALEU requests, several documents will need to be prepared. Prior to DOE physically transferring the HALEU, the requestor must take all actions necessary to receive the HALEU in accordance with applicable laws, such as executing any contracts and agreements between DOE (including NNSA, if applicable) and the requestor, obtaining an NRC-issued license for possession of the requested HALEU, procuring transportation and storage services, making material disposal/disposition plans, and arranging for fuel fabrication services.

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NE will track the development of civilian domestic R&D, demonstration, and commercial use activities of all HALEU recipients. All HALEU recipients should submit a quarterly update via email on key milestones and critical activities associated with utilizing the HALEU allocated. These key milestones and critical activities will be specified in a separate written agreement prior to HALEU being allocated to a requestor. In the case of significant delays, DOE reserves the right to rescind allocations of HALEU if circumstances require the reallocation of some or all prior allocated amounts to support a more immediate and higher priority request.

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Appendix A

High-Assay Low-Enriched Uranium (HALEU) Request Form

This request form should be used to request HALEU from DOE.

Requesters are requested to provide the following items, at a minimum, to enable DOE to review individual requests for HALEU:

1. Entity requesting the HALEU.
2. Individual to contact with questions while reviewing and processing the request (name, organization, title, email address, phone number).
3. Quantity requested (in kilograms), enrichment level(s), and form (e.g., UF₆, metal, oxide, other).
4. Desired delivery date(s) for HALEU. Provide multiple dates and quantities, if applicable, to support multiple experiments over time.
5. How will the HALEU be used? Briefly describe the fuel form, fabrication, and the operations or experiments to be conducted as well as the ultimate purpose of the activity for which HALEU requested.
6. A schedule with key fuel form, fabrication, experiment(s), and reactor deployment milestones, if applicable.
7. Is this activity associated with an existing partnership or cost-shared agreement with DOE? If so, please identify the partnership or agreement.
8. Describe the entity's capabilities, experience, and financing that will enable it to use the HALEU for the intended purpose on the schedule provided.
9. Describe progress in achieving the following to the extent applicable:
 - a. Regulatory approvals,
 - b. Fabrication services,
 - c. Access to experimental facilities,
 - d. Capabilities to ship/receive HALEU,
 - e. Storage and disposal/disposition pathway, and
 - f. Any other areas that are required to execute the project for which HALEU requested.
10. Provide detailed material specifications for the HALEU requested including contamination and purity limits.
11. Provide any other information believed to be relevant to DOE in evaluating the request.