

September 14, 2021

The Honorable Joe Manchin
Chair
Senate Energy and Natural
Resources Committee
306 Hart Senate Office Building
Washington, D.C. 20510

The Honorable John Barrasso
Ranking Member
Senate Energy and Natural
Resources Committee
307 Dirksen Senate Office Building
Washington, D.C. 20510

Chair Manchin, Ranking Member Barrasso, and Senate Energy and Natural Resources Committee Membership:

As the professional organization representing over 10,000 nuclear engineers, scientists, and technologists, the [American Nuclear Society](https://www.ans.org/) (ANS) urges the United States Congress to take swift action to address the lack of a secure and reliable source of fuel for advanced reactors.

Many advanced nuclear reactor designs, including nine of the ten designs awarded under the U.S. Department of Energy's (DOE) Advanced Reactor Demonstration Program (ARDP), require uranium enriched up to 20% as reactor fuel. This high-assay, low-enriched uranium (HALEU) is currently available from only two sources: (i) limited amounts from the DOE via down-blending of existing stockpiles of material and (ii) Russia. Without a substantial domestic HALEU enrichment capability, we risk not having the fuel needed to power advanced nuclear energy as part of our clean energy future. Long-term reliance on Russian state-owned uranium producers exposes our largest carbon-free energy source to unacceptable business and political risk. The maturation of new nuclear technologies and advanced reactor designs underscores the need for securing our domestic nuclear fuel supply chains. Unless we want Russia dominating the world market, it is imperative for the United States to accelerate the establishment of domestic production capabilities for HALEU. A domestic supply of HALEU will also help to fuel the decarbonization of our economy while creating good-paying jobs in the nuclear energy industry and mining sectors.

ANS applauds Senator Barrasso's recent efforts to address nuclear supply chain issues by proposing to support a domestic HALEU capability and a strategic uranium reserve. The society supports the approach taken in Senator Barrasso's proposed amendment to the recently passed Infrastructure Investment and Jobs Act (H.R. 3684), which directs the Secretary of Energy to make HALEU available for advanced nuclear reactor demonstration projects and to accelerate the availability of commercially enriched, deconverted and fabricated HALEU in the United States.

Enrichment of uranium to produce HALEU for advanced reactors is a necessary next step for commercial nuclear fuel and must be prioritized. However, even if the United States could begin full-scale HALEU enrichment today, the country would not have the quantities of HALEU needed to fuel its initial demonstration projects unless the DOE were to simultaneously process its existing stockpiles of material. ANS believes an investment of \$200 million annually over a

five-year period is needed to process DOE material at levels sufficient to supply demonstrations of next-generation reactor designs. To address enrichment, ANS recommends \$1.5 billion total over ten years to produce 20 tons annually, which is what our experts believe will be needed in that time frame.

Now is the time to encourage multiple companies to prepare to compete for future DOE funding to build out the nation's HALEU infrastructure. ANS believes that a comprehensive approach should be considered for both enrichment and processing, i.e., \$2.5 billion (\$200 million annually over five years for processing of DOE stockpiles and \$150 million over ten years for uranium enrichment). This recommendation coincides with Senator Barrasso's original amendment and is currently the only viable option available to avoid U.S. dependence on Russian material.

Enrichment should remain a primary focal point before taking into account the processing of DOE stockpiles. In addition to supporting the establishment of HALEU enrichment capability in our country, the processing of EBR-II fuel must continue, and a funding level of \$17.5 million is necessary for FY22 to support advanced reactor deployment schedules. Robust funding for enrichment is also an important mechanism for current enrichers adding HALEU capacity or new enrichers entering the market.

Please send any questions to ANS Director of Public Policy, John Starkey at jstarkey@ans.org.

Sincerely,

Craig H. Piercy

A handwritten signature in black ink, appearing to read "C. H. Piercy", written in a cursive style.

Executive Director/CEO
American Nuclear Society

Steven P. Nesbit

A handwritten signature in black ink, appearing to read "S. P. Nesbit", written in a cursive style.

President
American Nuclear Society

cc: Sen. Maria Cantwell
Sen. Bill Cassidy
Sen. Catherine Cortez Masto
Sen. Steve Daines
Sen. Martin Heinrich
Sen. John Hoeven
Sen. John Hickenlooper
Sen. Cindy Hyde-Smith
Sen. Mazie Hirono
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