The Secretary of Energy
Washington, DC 20585

May 15, 2015

The Honorable Fred Upton
Chairman
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Upton:

Thank you for your April 14 letter concerning the finding made by President Obama that the development of a separate repository for the disposal of high-level radioactive waste resulting from atomic energy defense activities is required.

This finding, made pursuant to Section 8 of the Nuclear Waste Policy Act of 1982 (NWPA), authorized the Department of Energy (DOE) to move forward with planning for a separate repository for the disposal of high-level radioactive waste resulting from atomic energy defense activities. This finding did not in any way change the technical basis for geologic disposal of defense or commercial spent nuclear fuel and high-level radioactive waste either in a common repository or separate repositories. Instead, the decision to move forward with planning for the separate disposal of defense high-level radioactive waste offers greater flexibility and optionality in developing programmatic pathways for the disposal of such waste.

In 1985, a decision was made to "co-mingle" high-level radioactive waste from defense activities and commercial spent nuclear fuel and high-level radioactive waste. At the time, it was assumed that, among other things, production of new nuclear weapons would continue indefinitely. The 1985 decision also assumed that more than one repository would be needed and available for this combined inventory – the first in 1998, and a second soon thereafter.

Since 1985, circumstances have changed significantly. Among other things, the Cold War is over and the United States is no longer generating defense high-level radioactive waste associated with weapons production. As a result, a known quantity of defense high-level radioactive waste now exists in different forms that are largely defined, thereby opening up opportunities to look at separate disposal pathways for these waste forms. Some of this defense high-level radioactive waste is less radioactive, cooler, and easier to handle than commercial spent nuclear fuel, which could mean a simpler design and potentially fewer licensing and transportation challenges for a separate defense repository. Separate disposal of defense high-level radioactive waste could also allow greater flexibility in site selection – and that could help keep costs down. Meanwhile, the path to a common repository has been significantly more controversial, costly, and delayed than was anticipated in 1985.

The potential for earlier availability of a defense high-level radioactive waste repository could also reduce the substantial ongoing storage, treatment, and management costs for waste currently at DOE facilities, and could also help DOE in meeting its regulatory obligations, thereby avoiding still other costs triggered by missed milestones prescribed in various legal agreements with the states. Finally, moving forward with a defense high-level radioactive waste repository that may have a simpler design and present fewer licensing challenges in the near-term could reduce the overall cost and time required to develop future repositories through the experience gained in design, siting, licensing, and development.

The decision to move forward with planning for a separate defense repository does represent a significant change in our nuclear waste management policy, but I believe it is well justified in light of the changed circumstances, experience gained, and lessons learned over the last 30 years.

Your letter also asked a number of questions related to cost and schedule for past activities as well as the anticipated costs for program activities outlined in the Administration's *Strategy for Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste*, the President's Fiscal Year 2016 Budget Request, and the March 24, 2015 decision to go forward with planning for a separate repository for defense high-level radioactive waste. With respect to funds spent to date for activities related to the disposal of defense waste, a total of $3.7 billion was appropriated from Fiscal Year 1993 through Fiscal Year 2010 under the Defense Nuclear Waste Disposal account for activities carried out under the nuclear waste program. That funding was in part to support activities related to Yucca Mountain, but also to support activities associated with an integrated waste management system including transportation planning and infrastructure development. With respect to the time required to develop a geologic repository for commercial spent nuclear fuel and high-level radioactive waste, our goal, as noted in the Administration's *Strategy*, is to implement a phased, adaptive, and consent-based approach to siting and implementing a comprehensive management and disposal system that would result in the operation of a geologic repository by 2048. Interim milestones for repository development include completion of siting by 2026, with site characterization and repository design and licensing completed by 2042.

Your letter also asks about deep borehole disposal. The Department is now beginning a field test to evaluate the concept. The Fiscal Year 2015 appropriation included $8 million for the preliminary borehole test work and the Fiscal Year 2016 Budget Request includes $26 million for the test and an additional $13.5 million for other core ongoing subsurface-related research and development. The Department's currently planned field test, during which the feasibility of the concept will be evaluated without the use of radioactive waste, envisions the use of a small characterization borehole and a second larger research borehole, and is estimated to last approximately 5 years. The siting, characterization, and drilling of a single borehole for disposal would likely take 4 to 5 years, with an additional 6 months likely required for each additional disposal hole if it is determined that more than one is needed. Further work will be required to estimate the scope and duration of the licensing process for a deep borehole disposal site if the concept is proved feasible; the

Nuclear Regulatory Commission's licensing process for geologic repositories does not currently explicitly address specific requirements for licensing deep boreholes for permanent disposition of radioactive waste. We will continue to refine cost and schedule estimates for deep borehole disposal as work goes forward and data and information is obtained from the field test.

With respect to the cost estimates contained in the Department's March 2015 *Report on Separate Disposal of Defense High-Level Radioactive Waste*, it warrants emphasis that these cost estimates are intended to compare the relative costs between repository concepts in different geologic media for disposal of different waste inventories. The low and high range repository cost estimates represent rough order of magnitude costs that reflect the large inherent uncertainties involved in estimating costs well into the future and the limited cost data available on the construction, operation, and closure of actual repositories in most geologic media. These cost ranges were derived from studies that are available on the Department's Office of Nuclear Energy website (www.energy.gov/ne/office-nuclear-energy). These studies were conducted in support of the Used Nuclear Fuel Research and Development program and relied on selected repository design and emplacement concepts appropriate for each of the geologic media adopted from international experience and past work in the United States. Going forward, the Department will continue to refine the cost estimates for a separate defense repository and will continue to look at optimizing the cost of disposal of defense waste.

We are still looking at what is the best future organizational structure to move forward with programmatic tasks related to a defense waste repository, which would include addressing not only the technical issues related to a repository but also planning for a consent-based siting process. The Office of Nuclear Energy currently performs ongoing research and development (R&D) as well as non-R&D activities related to storage, transportation, and disposal of spent nuclear fuel and high-level radioactive waste, making it the logical choice to move forward with planning for a separate defense repository, at least for the near-term. The Department is carrying out modest planning activities for a separate defense repository in Fiscal Year 2015.

The Department is committed to pursuing a consent-based siting process that will ensure public trust and confidence in decision-making throughout the process. The Administration's *Strategy* endorses the principle that prospective host jurisdictions must be recognized as partners, and that overall public trust and confidence is a prerequisite to success. Accordingly, the Department seeks to consult with affected parties and stakeholders at every step of the process. Following release of the October 2014 report, *Assessment of Disposal Options for DOE-Managed High-Level Waste and Spent Nuclear Fuel*, the Department began an informal process of reviewing the technical recommendations of that report with – and soliciting input from – a broad group of interested parties, including industry and state and local governmental stakeholders. Those discussions provided valuable input to the Department in making a recommendation to the President to go forward with planning for a separate repository for defense high-level radioactive waste. For the reasons articulated above, the

Department does not believe that the decision to go forward with planning for a separate defense repository would have a predictable material net effect on its existing liability.

Finally, as noted in the March 2015 report, the Presidential finding in section 8(b) is necessary only for the separate disposal of defense high-level radioactive waste. The Department has broad authority under the Atomic Energy Act of 1954 (AEA) and other laws to dispose of nuclear materials including spent nuclear fuel and high-level radioactive waste. The NWPA does not limit the Secretary's authority to dispose of high-level radioactive waste and spent nuclear fuel from the Department's research and development activities or defense spent nuclear fuel. The Department's authority to dispose of such spent nuclear fuel and high-level radioactive waste separately derives from the Atomic Energy Act. Consistent with Section 8 of the NWPA, a defense high-level waste repository would be subject to licensing by the Nuclear Regulatory Commission pursuant to section 202 of the Energy Reorganization Act of 1974.

Thank you again for your letter. I look forward to working with you on this important issue. Please contact me should you need clarification on any of these points or additional information.

Sincerely,

Ernest J. Moniz