



**UNITED STATES**  
**NUCLEAR WASTE TECHNICAL REVIEW BOARD**  
2300 Clarendon Boulevard, Suite 1300  
Arlington, VA 22201-3367

June 9, 2025

Dr. Michael Goff  
Principal Deputy Assistant Secretary for Nuclear Energy  
U.S. Department of Energy  
1000 Independence Ave., SW  
Washington, DC 20585

Dear Dr. Goff:

On behalf of the U.S. Nuclear Waste Technical Review Board (Board), I want to thank you and your staff for supporting the Board's Summer 2024 Meeting in North Augusta, SC, on August 29, 2024. One purpose of the meeting was to receive a program update on U.S. Department of Energy, Office of Nuclear Energy (DOE-NE), Office of Spent Fuel and High-Level Waste Disposition activities.<sup>1</sup> This letter<sup>2</sup> presents the Board's review of DOE-NE's presentations during the Summer 2024 Meeting and information obtained from a December 16, 2024, fact-finding meeting with DOE-NE staff on a consent-based siting process for a federal consolidated interim storage facility for commercial spent nuclear fuel.

The program update summarized DOE-NE's research and development activities to enable the storage, transportation, and eventual disposal of spent nuclear fuel and high-level radioactive waste from existing and potential future nuclear reactors and emphasized that DOE's program will change in response to the ADVANCE Act of 2024. Mr. Paul Murray, Deputy Assistant Secretary for Spent Fuel and High-Level Waste Disposition, provided information on DOE's responsibility, under the ADVANCE Act, to report to Congress by January 1, 2026, on the cumulative amount spent by DOE to manage spent nuclear fuel and high-level radioactive waste, the activities DOE has taken since 2008 to reduce the liabilities, and the projected lifecycle costs to store, manage, transport, and dispose of those wastes. DOE's program update described a planned package performance demonstration (now known as the Package Performance Project), planned transport of a high burnup spent nuclear fuel<sup>3</sup> demonstration cask (now known as the high burnup research cask), consent-based siting consortia activities, and plans for a federal consolidated interim storage facility that DOE assumes will receive spent nuclear fuel beginning in 2038.<sup>4</sup> Mr. Murray stated that DOE will be prioritizing research and development and

---

<sup>1</sup> The meeting agenda, presentation materials, transcript, and an archived recording of the webcast are available online at <https://www.nwtrb.gov/meetings/past-meetings/summer-2024-board-meeting---august-29--2024>.

<sup>2</sup> Current and past Members of the Board who have contributed to this letter include P. Swift (Chair), R. Ballinger, S. Becker, A. Croff, T. Illangasekare, K.L. Peddicord, N. Siu, S. Tuler, S. Tyler, and B. Woods.

<sup>3</sup> Fuel burnup is a measure of the thermal energy generated in a nuclear reactor per unit mass of nuclear fuel as initially loaded in the reactor. Burnup is typically measured in units of gigawatt-days per metric ton of uranium (GWd/MTU). In the U.S., the U.S. Nuclear Regulatory Commission defines nuclear fuel utilized beyond 45 GWd/MTU as high burnup fuel.

<sup>4</sup> DOE also assumes a repository will be operating in the mid-2060s [https://www.nwtrb.gov/docs/default-source/meetings/2024/august/nwtrb-summer-2024-meeting\\_8-29-24.pdf?sfvrsn=7244c305\\_3](https://www.nwtrb.gov/docs/default-source/meetings/2024/august/nwtrb-summer-2024-meeting_8-29-24.pdf?sfvrsn=7244c305_3).

refocusing its program to reduce liabilities. As he explained, resource constraints could adversely affect DOE's programs moving forward and its communication efforts will be integral to engendering public trust that is vital for program success.

Based on the information presented at the Summer 2024 Meeting, in the fact-finding meeting, and in related technical reports, the Board has developed observations on Office of Spent Fuel and High-Level Waste Disposition activities. The Board commends Mr. Murray for his informative presentation at the Summer 2024 Meeting, which effectively addressed the Board's questions, as well as the DOE staff for their candid discussions in the fact-finding meeting.

### DOE's Activities Supporting Its ADVANCE Act Report

DOE is developing an integrated waste management system program plan that will serve as the basis for DOE's ADVANCE Act report on its liabilities and projected lifecycle costs. Key to accurate estimates of liabilities and lifecycle costs is the number of facilities for storage and disposal,<sup>5</sup> their assumed start dates for operations, and the technical bases underlying the analyses and assumptions. Another key cost consideration is the potential need to repackage commercial spent nuclear fuel in dual-purpose (storage and transportation) canisters to facilitate disposal of the spent nuclear fuel.<sup>6,7</sup>

Although the Board has concluded elsewhere that as of December 2024 the DOE does not have an effective program that could lead to permanent disposal of spent nuclear fuel and high level waste,<sup>8</sup> it commends DOE for its commitment to developing an integrated waste management system program plan that could initiate a workable pathway to site, license, construct, and operate a geologic repository. The Board looks forward to hearing about DOE's integrated waste management system program plan, its assumptions, analyses, and technical bases, and how DOE has addressed relevant Board recommendations (see cited Board reports and letters) in developing the program plan, which will support DOE's ADVANCE Act report.

### Activities Focused on Developing Public Trust

---

<sup>5</sup> NWTRB. 2015. *Evaluation of Technical Issues Associated with the Development of a Separate Repository for U.S. Department of Energy-Managed High-Level Radioactive Waste and Spent Nuclear Fuel*. Arlington, Virginia: U.S. Nuclear Waste Technical Review Board. June. [https://www.nwtrb.gov/docs/default-source/reports/disposal\\_options.pdf?sfvrsn=4f6f605\\_7](https://www.nwtrb.gov/docs/default-source/reports/disposal_options.pdf?sfvrsn=4f6f605_7).

<sup>6</sup> Bahr, J.M. 2021. Board letter to DOE following the Board's July 2020 meeting. January 11. [https://www.nwtrb.gov/docs/default-source/correspondence/jmb026.pdf?sfvrsn=cab5f105\\_8](https://www.nwtrb.gov/docs/default-source/correspondence/jmb026.pdf?sfvrsn=cab5f105_8). As described in the Summer 2024 meeting, DOE's federal consolidated interim storage facility does not include capabilities for repackaging spent nuclear fuel contained in dual-purpose canisters.

<sup>7</sup> NWTRB. 2024. *Evaluation of the U.S. Department of Energy Research and Development Activities on the Disposition of Commercial Spent Nuclear Fuel in Dual-Purpose Canisters*. Arlington, Virginia: U.S. Nuclear Waste Technical Review Board. February. [https://www.nwtrb.gov/docs/default-source/reports/nwtrb\\_feb2024\\_report\\_evaluation\\_csnf\\_dpcs.pdf?sfvrsn=626af005\\_5](https://www.nwtrb.gov/docs/default-source/reports/nwtrb_feb2024_report_evaluation_csnf_dpcs.pdf?sfvrsn=626af005_5).

<sup>8</sup> Swift, P. 2025. Board letter to U.S. Congress and the Secretary of Energy on DOE's program for managing the nation's spent nuclear fuel and high-level radioactive waste. Arlington, Virginia: U.S. Nuclear Waste Technical Review Board. March 18. [https://www.nwtrb.gov/docs/default-source/correspondence/pns001vf-nwtrb-mar2025-letter-report.pdf?sfvrsn=1c82c205\\_10](https://www.nwtrb.gov/docs/default-source/correspondence/pns001vf-nwtrb-mar2025-letter-report.pdf?sfvrsn=1c82c205_10).

DOE stated that the Package Performance Project, the planned transport of the high burnup research cask, and the work of the consent-based siting consortia are all important activities for developing public trust in DOE's program to manage, store, transport, and dispose of spent nuclear fuel and high-level radioactive waste. The Board commends DOE for addressing the Board's recommendation to engage the public early in developing the Package Performance Project. DOE's phased approach and extensive efforts<sup>9</sup> both prior to, and post publication, of the July 2024 request for information are noteworthy. DOE's efforts to coordinate among the three projects, including integrated engagement and communication plans, are especially noteworthy. For example, DOE held a virtual event with the consortia to explain the Package Performance Project and invited consortia support on the request for information. The consortia worked with minority serving institutions to improve student engagement in civic processes and these groups subsequently provided input in response to the request for information. Now that DOE has announced the destination for transport of the high burnup spent nuclear fuel demonstration cask as the Idaho National Laboratory,<sup>10</sup> the Board looks forward to hearing an update from DOE on this important project.

### Next Steps in the Siting Process and Implementing a Refocused Program

In the December 2024 fact-finding meeting, DOE staff discussed an initial draft report on site screening criteria for a federal consolidated interim storage facility for commercial spent nuclear fuel. At that time, DOE planned to release the final report and a Federal Register notice of expression of interest in Spring to Summer 2025.<sup>11</sup> The Board participants found the draft document criteria logical, clear, simple, and defensible. The Board members noted that improvements to terminology describing the criteria (e.g., initial criteria) and re-organizing portions of the report could make the information clearer and more accessible to the intended audience. The Board looks forward to hearing an update on DOE's siting process prior to DOE's release of the final report and a Federal Register notice of expression of interest.

In the Summer 2024 Meeting, Mr. Murray described that in 2025, DOE would be refocusing its program using a risk-informed approach and that future research and development would have to have a clear programmatic need that reduces risk and liability. DOE staff described that it would develop a risk register<sup>12</sup> to assist in prioritization of activities. The Board looks forward to hearing about DOE's risk register and its prioritization efforts this summer.

---

<sup>9</sup> Goff, K.M. 2025. DOE response to the Board's letter to DOE on the Board's March 2023 meeting. September 9. [https://www.nwtrb.gov/docs/default-source/correspondence/goff-letter-to-siu\\_9-sep-2024.pdf?sfvrsn=fe75c305\\_3](https://www.nwtrb.gov/docs/default-source/correspondence/goff-letter-to-siu_9-sep-2024.pdf?sfvrsn=fe75c305_3).

<sup>10</sup> Idaho National Laboratory. 2025. Idaho and Trump Administration sign agreement to support US nuclear energy future. April 29. <https://inl.gov/news-release/idaho-and-trump-administration-sign-agreement-to-support-us-nuclear-energy-future/>.

<sup>11</sup> While the schedule has slipped, DOE (2023) described its next steps as starting with "DOE issuing a list of site-screening and preliminary assessment criteria. Then, DOE will issue a national call for volunteer host communities followed by interested communities responding with an expression of interest." DOE. 2023. *Consent-Based Siting Process for Federal Consolidated Interim Storage of Spent Nuclear Fuel*. April. <https://www.energy.gov/sites/default/files/2023-05/Consent-Based%20Siting%20Process%20Report-0424%203.pdf>.

<sup>12</sup> A risk register is a document used in risk management to identify, analyze, and track potential programmatic risks within a project or organization.

Thank you again, on behalf of the Board, for the participation of DOE staff at our Summer Meeting in August 2024, and the December 2024, fact-finding meeting. We look forward to continuing our ongoing evaluation of the technical and scientific validity of DOE's activities related to managing and disposing of spent nuclear fuel and high-level radioactive waste.

Sincerely,

A handwritten signature in cursive script, appearing to read "Peter Swift".

Peter Swift  
Chair