



**UNITED STATES**  
**NUCLEAR WASTE TECHNICAL REVIEW BOARD**  
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## **U.S. NWTRB Releases Report on Canisters Containing Spent Nuclear Fuel from Commercial Nuclear Reactors**

On February 29, 2024, the U.S. Nuclear Waste Technical Review Board (NWTRB) issued a new report to the U.S. Congress and the Secretary of Energy titled *Evaluation of The U.S. Department of Energy Research and Development Activities on the Disposition of Commercial Spent Nuclear Fuel in Dual-Purpose Canisters*. The report presents the Board's findings, conclusions, and recommendations regarding its evaluation of U.S. Department of Energy (DOE) research and development (R&D) activities related to the disposition of commercial spent nuclear fuel (SNF) stored inside U.S. Nuclear Regulatory Commission (NRC) approved dry-storage casks at independent spent fuel storage installations (ISFSIs).

In the United States, commercial SNF is stored at more than 70 sites and continues to be generated at a rate of more than 2,200 metric tons per year. Much of the SNF inventory has been stored inside large, welded canisters known as dual-purpose canisters (DPCs) at ISFSIs associated with nuclear power plant sites. These DPCs have been designed for interim storage and transportation but not for geologic disposal. The storage of SNF in DPCs, particularly larger DPCs, will have significant implications for the later stages of the SNF management and disposal system, for which DOE is responsible.

The Board's report examines three alternative approaches for managing commercial SNF in an integrated, nationwide manner. The Board also evaluates specific DOE R&D programs that are focused on the direct disposal of SNF in large DPCs. Particular areas of focus include DOE-sponsored criticality analyses, testing of potential DPC filler materials, and modifications of DPCs to be loaded in the future to preclude criticality after the DPCs are emplaced in a repository. Lastly, the Board in the report provides three recommendations to DOE. The first addresses an evaluation of alternative approaches for implementing an integrated waste management system. The second recommendation notes needed improvements in criticality

analyses. The third recommendation addresses the need for criteria to facilitate the selection of future DPC modifications.

The Board is an independent federal agency in the Executive Branch. It was established in the Nuclear Waste Policy Amendments Act of 1987 (Public Law 100-203) to perform ongoing evaluation of the technical and scientific validity of U.S. Department of Energy activities related to developing and implementing a program for the management and disposal of spent nuclear fuel and high-level radioactive waste, in accordance with the terms of the Nuclear Waste Policy Act of 1982. The Board is required to report its findings, conclusions, and recommendations to Congress and the Secretary of Energy. Board members serve part-time and are appointed by the President from a list of nominees submitted by the National Academy of Sciences.

The new report and other Board reports, correspondence, testimony, and information are available on the Board's website at [www.nwtrb.gov](http://www.nwtrb.gov).

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