



Regional Outreach Work Group

Midwestern Radioactive Materials Transportation Project

Nuclear Waste Management In the U.S.

Nuclear power provided nearly 18% of the U.S. utility-scale electricity generation in 2023, and that number is expected to increase in the coming years. Since the 1960s, nuclear energy generation has produced over 90,000 metric tons of spent nuclear fuel (SNF). In the Midwest, SNF is stored at 16 operating nuclear power plants, five shutdown plants, and one away-from reactor storage facility.

In 2009, the Blue Ribbon Commission (BRC) on America's Nuclear Future was charged with recommending a strategy for managing the nation's SNF and high-level radioactive waste (HLRW). They recommended the development of a geologic disposal facility and one or more consolidated interim storage facilities (CISF). To site such facilities, the commission recommended developing a consent-based process. Other recommendations addressed transportation planning, financing the waste-management program, and research into advanced fuel cycle technologies. The Department of Energy (DOE) heeded BRC's recommendations, and is currently working through a consent-based siting process to identify one or more locations for the CISF(s) with the goal for final disposal in a geologic disposal facility.

SNF currently in storage at shutdown and decommissioned nuclear power plants remains "stranded" at these sites after the power plants stopped producing electricity. The removal of SNF from shutdown sites reduces costs to utility ratepayers and allows decommissioning to be completed so that the land is available for other uses beneficial to the local community.

Additionally, moving SNF into consolidated storage would increase protections for sensitive areas like the shores of the Great Lakes.

Transportation

Implementing the BRC's recommendations means reevaluating two of the three components of the federal waste management program: disposal and storage. The third component—transportation—has a history of success due to the consultative cooperative approach DOE follows for planning shipments with input from the affected states. Shipments of radioactive material have taken place since the 1950s in the U.S. DOE involves states in transportation planning through regional cooperative agreements with organizations like The Council of State Governments' Midwestern Office (CSG Midwest). CSG Midwest has worked with DOE on more than 200 shipments of SNF and transuranic waste.

The process of planning shipments on a regional basis was pioneered for shipments of transuranic waste to DOE's Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico. The BRC cited this regional planning process as a model for a new national radioactive waste management program. DOE committed to utilizing the infrastructure and lessons learned from the WIPP transportation planning program as it works with states and other stakeholders and partners to plan shipments of SNF and HLRW. As of July 2024, WIPP has received more than 14,000 shipments from sites across the nation.

CSG Midwest's Radioactive Transportation Committee (MRMTC)

To ensure that Midwestern state officials have input into the federal program for transporting SNF and other types of radioactive waste and material, CSG Midwest established the Midwestern Radioactive Materials Transportation Project (MRMTP) and its attendant committee (MRMTC) in 1989 through a cooperative agreement with DOE. The project establishes a system of two-way communication that keeps state officials informed of developments within DOE and, in turn, provides the department with input on regional issues related to transportation and storage. The MRMTC is the primary vehicle for identifying and resolving regional issues related to these shipments.

Each of the 12 Midwestern governors appoints one representative to the committee, and the chair of CSG Midwest's Midwestern Legislative Conference appoints up to 12 legislative members. The MRMTC convenes meetings and organizes work groups to address federal, regional, Tribal, and state issues concerning the transportation and storage of radioactive waste. The committee's goal is to ensure the states have the resources they need to be prepared for shipments of radioactive waste and to understand the impacts on their states resulting from shipments and from the long-term storage of SNF.

Federal Assistance to the States

Section 180(c) of the Nuclear Waste Policy Act (NWPA) requires that DOE provide funds and technical assistance to the states affected by shipments to a national repository or interim storage facility. This assistance will help the states prepare for both routine transportation and emergencies.

Inspection of Shipments Carrying Spent Nuclear Fuel

State oversight of transportation may include inspecting and escorting shipments to provide security and rapid emergency response capabilities. Several Midwestern states have inspectors who are trained to conduct inspections under a reciprocal inspection program developed by the Commercial Vehicle Safety Alliance with support from DOE.

However, SNF will primarily travel by rail to facilities for disposal or consolidated storage. In anticipation of these shipments, the Association of American Railroads (AAR) certified the Atlas rail car system, a high-tech rail car developed by DOE to transport the nation's commercial SNF and HLRW in June 2024. The AAR certification is the highest safety standard currently established. Additionally, in June 2023 the Department of Transportation's (DOT) Federal Railroad Administration (FRA) published a Safety Coordination and Compliance Oversight Plan for Rail Transportation of High-Level Radioactive Waste and SNF (SC-COP). The FRA is working with the states and Tribes to establish a reciprocal rail inspection program that enhances shipment safety and promotes information sharing among state, Tribal, federal agencies without compromising security.

Shipments through the Midwest

Midwestern states are affected by shipments of transuranic waste, SNF, and other radioactive waste and material. For example, shipments of transuranic waste from DOE's Argonne National Laboratory near Chicago will continue to pass through Illinois, Iowa, and Nebraska on their way to WIPP. In addition, shipments of low-level radioactive waste routinely pass through the Midwest headed to disposal sites in the West. Occasionally, shipments of SNF from research reactors pass through the Midwest as the waste is sent to DOE facilities for research or long-term storage until a CISO or permanent repository is available. The committee coordinates with DOE and other shippers on their shipping plans both regionally and nationally, through DOE's National Transportation Stakeholders Forum.

