



September 29, 2015

TO: Members, Subcommittee on Environment and the Economy

FROM: Committee Majority Staff

RE: Hearing entitled “Transporting Nuclear Materials: Design, Logistics, and Shipment”

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## **I. INTRODUCTION**

On Thursday, October 1, 2015, at 10:15 a.m. in 2123 Rayburn House Office Building, the Subcommittee on Environment and the Economy will hold a hearing entitled “Transporting Nuclear Materials: Design, Logistics, and Shipment.”

## **II. WITNESSES**

- Mr. Christopher Kouts, Managing Partner, Kouts Consulting;
- Mr. Edward R. Hamberger, President and Chief Executive Officer, Association of American Railroads;
- Mr. Kelly Horn, Co-Chairman, Midwestern Radioactive Materials Transportation Committee;
- Mr. Robert Quinn, Vice President, Cask and Container Technology, EnergySolutions; Chairman, Spent Fuel Transportation Task Force, U.S. Nuclear Infrastructure Council;
- Mr. Franklin Rusco, Director, Natural Resources and Environment, U.S. Government Accountability Office; and,
- Mr. Kevin Kamps, Radioactive Waste Watchdog, Beyond Nuclear.

## **III. BACKGROUND**

Nuclear materials are transported throughout the United States on a daily basis. About three million packages of radioactive materials are shipped annually by rail, highway, or water.<sup>1</sup> For example, low-level radioactive waste is shipped to New Mexico and Texas for disposal, research reactor fuel is transported to universities across the country, and spent nuclear fuel from naval vessels is shipped to Idaho for storage. However, to permanently dispose of the existing inventory of approximately 74,000 tons of commercial high-level radioactive waste (HLW) and

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<sup>1</sup> U.S. Nuclear Regulatory Commission, “Materials Transportation,” Updated on February 10, 2015. Accessible at: <http://www.nrc.gov/materials/transportation.html>.

spent nuclear fuel (SNF) in thirty-five States,<sup>2</sup> the U.S. Department of Energy (DOE) will have to plan and execute a national transportation campaign to move the material to a repository.

DOE disposes of transuranic (TRU) waste, which consists of contaminated items such as clothing, rags, or tools, in the Waste Isolation Pilot Project (WIPP). Since 1999, DOE has overseen over 90,000 cubic meters and 12,000 shipments for disposal at WIPP.<sup>3</sup> The experience of WIPP demonstrates key aspects of a system to transport nuclear materials, including coordination with the Department of Transportation (DOT) on hazardous cargo regulations and cooperation with State, local, and tribal governments on emergency responder training and route identification.<sup>4</sup>

Section 180 of the Nuclear Waste Policy Act (NWPA)<sup>5</sup> requires that DOE only transport HLW and SNF in packages that have been certified by the Nuclear Regulatory Commission (NRC) and stipulates that DOE must provide advance notice to State and local governments before nuclear material is transported. Section 180(c) requires the Secretary of Energy to provide “technical assistance and funds to States for training for public safety officials of appropriate units of local government and Indian tribes through whose jurisdiction the Secretary plans to transport”<sup>6</sup> HLW and SNF. The training is to cover procedures required for safe, routine transportation of these materials, as well as procedures for dealing with emergency response situations.<sup>7</sup>

NRC’s Office of Nuclear Material Safety and Safeguards (NMSS) is responsible for safe storage, transportation, and disposal of radioactive material by regulation, certification, inspections, and system monitoring. Prior to shipment, packages with radioactive material must be reviewed, receive an NRC Certificate of Compliance (CoC), and take radiation measurements to assure package performance. Shippers must also meet all DOT requirements during transport. To move SNF and HLW, DOE will work with utilities and the NRC to prepare and move material in the twenty-eight currently licensed dry cask storage designs.<sup>8</sup>

In 2006, the National Academy of Sciences (NAS) published a comprehensive analysis of HLW and SNF transportation issues and provided a series of findings and recommendations.<sup>9</sup>

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<sup>2</sup> Nuclear Energy Institute, “*US State by State Used Fuel and Payments to the Nuclear Waste Fund*,” updated 4/15. Accessible at: <http://www.nei.org/Knowledge-Center/Nuclear-Statistics/On-Site-Storage-of-Nuclear-Waste/US-State-by-State-Used-Fuel-and-Payments-to-the-Nu>.

<sup>3</sup> New Mexico Environment Department, “Waste Isolation Pilot Project Information,” Updated September 23, 2015. Accessible at: <https://www.env.nm.gov/wipp/>.

<sup>4</sup> For more information, see Blue Ribbon Commission on America’s Nuclear Future, “*Report to the Secretary of Energy*,” January 2012. p. 87 Accessible at: [http://energy.gov/sites/prod/files/2013/04/f0/brc\\_finalreport\\_jan2012.pdf](http://energy.gov/sites/prod/files/2013/04/f0/brc_finalreport_jan2012.pdf).

<sup>5</sup> Nuclear Waste Policy Act, 42 USC 10101.

<sup>6</sup> Id.

<sup>7</sup> Id.

<sup>8</sup> U.S. Nuclear Regulatory Commission, “Dry Spent Fuel Storage Designs: NRC approved for General Use,” Updated June 12, 2015. Accessible at: <http://www.nrc.gov/waste/spent-fuel-storage/designs.html>.

<sup>9</sup> Nuclear and Radiation Studies Board; Transportation Research Board; National Research Council, “*Going the Distance? The Safe Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States*,” National Academies Press: 2006.

The report endorsed DOE's "mostly rail" option to ship material for disposal and found that challenges associated with transportation were primarily social issues which required community engagement and planning.<sup>10</sup> In 2012, the Blue Ribbon Commission on America's Nuclear Future (BRC) evaluated DOE's ongoing implementation of the NAS recommendations.<sup>11</sup> The BRC determined that many of the recommendations were halted during DOE's termination of the Yucca Mountain Project and still needed to be acted upon.

On June 24, 2015, the Nuclear Waste Technical Review Board (NWTRB) held a workshop to review DOE's activities related to transportation of SNF. NWTRB recommended that DOE:

- resolve potential issues with repackaging SNF on existing sites;
- publicize computer-based system tools for stakeholder engagement;
- work with the Electric Power Research Institute (EPRI) and NRC to research performance of dry storage canisters; and,
- collaborate with nuclear utilities to develop a "standardized transportation, aging, and disposal" canister.<sup>12</sup>

#### **IV. ISSUES**

The following issues may be examined at the hearing:

- current efforts to transport nuclear material, including existing regulatory requirements;
- recommendations for DOE to resume the National Transportation Project to ship HLW and SNF; and
- opportunities to engage with State and local stakeholders to provide safe shipment of nuclear material.

#### **V. STAFF CONTACTS**

If you have any questions regarding this hearing, please contact Andy Zach of the Committee staff at (202) 225-2927.

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<sup>10</sup> Id.

<sup>11</sup> Blue Ribbon Commission, p. 82.

<sup>12</sup> Letter from Chairman Rodney Ewing, Nuclear Waste Technical Review Board, to Acting Assistant Secretary for Nuclear Energy John Kotek, Department of Energy, August 31, 2015. Accessible at: <http://www.nwtrb.gov/corr/rce083115.pdf>.