

Statement of Christopher A. Kouts
Before the Committee on Energy and Commerce
Subcommittee on Environment and the Economy
U.S. House of Representatives
October 1, 2015

Summary

- The transportation of spent nuclear fuel and high-level radioactive waste materials has been safely undertaken both nationally and internationally for over 40 years.
- The routing of truck and rail shipments is well understood and well practiced.
- Over the years, many studies have been undertaken by various organizations regarding the transportation of radioactive materials.
- Planning for spent fuel transportation campaigns to a repository or interim storage facility will require continued effort for more than a decade before a facility is planned to begin operation.
- Given the substantial disparity in cask capacities between truck casks and rail casks, maximizing the use of rail shipments will help minimize shipment numbers. Yet there are facilities that are limited by their infrastructure (size of spent fuel pool, crane capacities, etc.) that will be unable to handle rail cask sizes and weights.
- Throughout the planning process, relationships with regional groups and individual States to disseminate information and receive feedback on planning activities can be helpful to develop public confidence that the shipments will be undertaken in a safe manner.
- The greatest challenge regarding transportation planning in the current highly uncertain policy environment is to discern what level of activities are appropriate, given the status of the development of the receiving facility.
- No amount of transportation planning can overcome the lack of a definitive destination for these shipments, whether that destination is an interim storage facility or a geologic repository.
- Over 30 years of experience tells me that the most certain path for the Nation to find an eventual destination for these materials is already in place and has been since 1982. The only ingredients we lack are the leadership and the resolve to make it happen.

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Mr. Chairman and Members of the Subcommittee, I am Christopher A. Kouts, former Principal Deputy Director and Acting Director of the Department of Energy's (DOE's) Office of Civilian Radioactive Waste Management (OCRWM). I appreciate the invitation to appear before the Subcommittee to provide my perspective on nuclear spent fuel and high-level radioactive waste transportation planning.

As background, for 25 years, I served in various technical and management positions in virtually every program area within OCRWM. In those positions I was responsible for disposal, interim storage, nuclear waste transportation, systems analysis, strategic and contingency planning activities as well as activities related to the management of the Standard Contract with Nuclear Utilities. I became the Principal Deputy Director of the program in 2007 and was the Acting Director from January 2009 until I retired in early 2010, after 35 years of Federal Service. The program was subsequently terminated in 2010 by the current Administration after nearly 30 years of existence, a program established by the Nuclear Waste Policy Act of 1982, as amended (NWPA).

The transportation of spent nuclear fuel and high-level radioactive waste materials has been safely undertaken both nationally and internationally for over 40 years. The containers within which the materials are carried are the most robust in the commercial

transport world. Current loaded rail casks weigh between 75-125 tons while loaded truck casks weigh between 25-40 tons. The designs for transportation casks must be certified by the Nuclear Regulatory Commission (NRC) to meet rigorous standards that encompass, with safety margins, the envelope of potential accidents that a railway or truck carrier could experience. That envelope of potential accidents is continually under scrutiny by the NRC and by outside interested parties. Over the long history of high-level waste shipments there have been accidents, but none of those accidents released radioactive materials.

The routing of truck and rail shipments is well understood and well practiced. Truck shipment routing is regulated by the U.S. Department of Transportation (DOT), which requires that the shipments must be routed primarily on the interstate highway system, unless State designated alternatives are submitted to DOT. Those State alternatives must match up with routes from other States so there are no dislocations in potential routing alternatives. Since railway lines are privately owned, railroad carriers coordinate across the various rail lines to determine routing between the point of origin and the destination. Due to the highly radioactive nature of the cargo, Class I track will be used to the maximum extent possible. Class I track crisscrosses the Nation with over 95,000 miles currently in service.

Over the years, many studies have been undertaken by various organizations regarding the transportation of radioactive materials. Most recently, in 2006, the National Academy of Sciences issued their comprehensive report: *Going the Distance? The Safe*

Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States.

The committee chartered to produce the report indicated they “...could identify no fundamental technical barriers to the safe transport of spent fuel and high-level radioactive waste in the United States.” The report also indicated that the institutional and social risks to such shipments will need to be forthrightly addressed, and provided several recommendations.

Planning for spent fuel transportation campaigns to a repository or interim storage facility will require continued effort for more than a decade before a facility is planned to begin operation. Procuring the necessary transportation casks (rail and/or truck), railcars, truck trailers and other equipment will require sustained and adequate funding to assure that the necessary equipment will be available and tested to meet shipping rates required for the receiving facility. Selection of potential routes for funding the training of appropriate units of local government and Indian tribes for routine shipment and emergency response purposes should take place three to five years before shipments commence. Throughout the planning process, relationships with regional groups and individual States to disseminate information and receive feedback on planning activities can be helpful to develop public confidence that the shipments will be undertaken in a safe manner.

The greatest challenge regarding transportation planning, in the current highly uncertain policy environment, is to discern what level of activities are appropriate, given the status of the development of the receiving facility. Two of the obvious critical needs for meaningful transportation planning are knowledge of the point of origin and the ultimate

destination of the shipments. In this case, the points of origin are well known. Focusing on commercial spent nuclear fuel, approximately 74,000 metric tons are being stored at 73 sites in 33 States. The infrastructure around those sites will need to be fully evaluated prior to shipment in order to understand which shipping modes are appropriate for the originating facilities. Rail spurs may need to be upgraded around the originating sites or heavy haul options will need to be investigated to assure that rail transport can occur to the maximum extent feasible. Given the substantial disparity in cask capacities between rail casks and truck casks (a rail cask can hold up to nine times the amount of a truck cask), maximizing the use of rail shipments will help minimize shipment numbers. Yet there are facilities that are limited by their infrastructure (size of spent fuel pool, crane capacities, etc.) that will be unable to handle rail cask sizes and weights.

However, no amount of transportation planning can overcome the lack of a definitive destination for these shipments, whether that destination is an interim storage facility or a geologic repository. Until this Administration came into Office, this Nation had a potential destination for commercial spent nuclear fuel and Defense high-level radioactive waste that had been under study for over thirty-five years – Yucca Mountain. The Yucca Mountain site was developed in accordance with the requirements of the carefully crafted NWPA. The site underwent nearly 20 years of intense scientific site characterization, was recommended to the President in 2002, was approved by Congress that same year, overriding the statutorily submitted Notice of Disapproval by the Governor of Nevada, and was well into the NWPA mandated three-year license review process by the NRC when the project was halted.

Having watched the policy environment around the disposition of spent nuclear fuel evolve over the past 30 years, there are no easy answers. History has shown that legislation in this area does not come easily or quickly, and that any new policy path will be contentious and fraught with challenges. The Administration tells us that a new repository will be available by 2048 and a pilot spent fuel interim storage facility will be available for shutdown reactors in 2021. Yet the required legislation for implementing those facilities is not on the horizon for enactment, making those dates notional at best, and fantasy at worst. Over 30 years of experience tells me that the most certain path for the Nation to find an eventual destination for these materials is already in place and has been since 1982. The only ingredients we lack are the leadership and the resolve to make it happen.

Thank you for this opportunity to discuss these issues, and I would be pleased to answer any questions the Subcommittee may have at this time.