

# Firstline

The Midwestern Office of The Council of State Governments

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## States planning now for future opening of national nuclear-waste repository

by *Tim Anderson*

Over the past 30 years, more than 2,700 shipments of spent nuclear fuel have been made in different parts of the United States.

Executed largely without incident, and with no injuries, the movement of this highly radioactive waste requires extensive planning and coordination between shippers and all levels of government.

Since 1998, Midwestern states have played an integral part in planning shipments conducted by the U.S. Department of Energy.

Their involvement only will intensify in the years ahead.

Over the next decade, the federal government hopes to begin transporting thousands of tons of spent fuel and other high-level radioactive waste to an underground repository in Yucca Mountain, Nevada.

That plan would result in significantly more shipments in the Midwest. This region is home to more than 12,000 metric tons of spent fuel awaiting disposal; another 30,000 metric tons from eastern and southern states could travel through on the way to Yucca.


The nation's spent fuel and other

high-level radioactive waste currently is stored at 131 locations in 39 states. In the Midwest, for example, 23 nuclear power plants and one commercial storage facility have spent nuclear fuel on-site.

The fuel can remain safely in storage at reactor sites for decades, but as a strategy for long-term disposal, most scientists agree that it should be isolated from people and from the environment.

Opening a national repository at Yucca Mountain is the federal government's attempt to solve the storage problem.

The plan has faced strong opposition and has been plagued by delays. However, the DOE continues its work on the site and will seek a license from the U.S. Nuclear Regulatory Commission.

And even if the Yucca project is delayed further, the number of shipments through the Midwest likely will rise in the future. The U.S. Congress has indicated its desire to have the waste moved somewhere. In addition, a group of electric utility companies is moving ahead with plans for a private storage facility in Utah, which might begin operating before the national repository in Nevada. 

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### Next month:

**Relief for property taxpayers**  
State legislation seeks to control rises in property taxes



The Midwestern Office of The Council of State Governments supports several groups of state officials, including the Midwestern Governors Association and the Midwestern Legislative Conference, an association of all legislators in the region's 11 states. The Canadian provinces of Manitoba, Ontario and Saskatchewan are affiliate members of the MLC.



## Planning efforts include identifying routes, preparing first-responders

Midwestern officials have dealt with past radioactive-materials shipments by coordinating efforts within their own state and working collaboratively as a region.

Similar strategies are being used to prepare for expected increases in shipments of spent nuclear fuel.

### Selecting Yucca routes

One example of these preparations is the **MIDWESTERN ROUTE IDENTIFICATION PROJECT** — an ongoing initiative of The Council of State Governments' Midwestern Radioactive Materials Transportation Committee.

The project is the first of its kind in the nation.

Its first goal has been to identify a potential suite of highway and rail routes for transporting spent fuel through the Midwest to a national repository in Yucca Mountain, Nevada.

Its second objective is to have a say in the routing decisions ultimately made by the U.S. Department of Energy.

The Midwestern committee's work on the project reflects the lead role that states play on radioactive-waste transportation. In particular, they must respond to any incidents or accidents involving the materials.

As a result, state officials want to make sure the safest roads and railways are chosen by the DOE.

In working to target a potential suite of routes, project officials considered

myriad factors: radiological risk to the public, urban areas traversed, accident rates, road or track quality, traffic and population density, and economic risks.

Final project results were presented to the DOE in December. A national discussion on route selection is expected to begin in 2006.

### Funding plan for states

The CSG group also has been working with other regions and federal officials on a financial-assistance plan for state and tribal governments impacted by Yucca shipments.

In advance of the repository opening, the DOE has agreed to provide planning grants to train and equip first-responders and other public-safety officials. How the funding would be allocated between the states, however, remains unclear.

The regional CSG committee has proposed an allocation formula based on the following four factors: route miles (30 percent), number of shipments (30 percent), population along the corridors (30 percent) and number of shipping sites (10 percent).

Work on the Yucca-related grants will continue in the upcoming year.

### Preparing and escorting

In addition to working with one another and the DOE, Midwestern states have comprehensive internal plans in place to handle shipments of

highly radioactive materials.

Illinois, home to the largest number of nuclear-power plants in the nation, has one of the most sophisticated oversight and inspection programs in the country.

The state inspects and escorts every shipment of spent nuclear fuel, transuranic waste and other radioactive materials.

Inspections include an assessment of the truck or train, as well as the casks storing the materials. Then, Illinois State Police troopers and health physicists with the state's Division of Nuclear Safety follow the truck or train through the state.

The program has overseen close to 500 shipments since it was established by state legislators in 1983.

With Midwestern shipments of spent nuclear fuel expected to increase, other states may look to adopt an inspection and escort program similar to Illinois'.

States also must prepare firefighters, paramedics, law enforcement and health care workers to respond adequately to an accident or incident involving radioactive waste.

OHIO provides one example of how a state provides ongoing training to first-responders.

In 2005, the Ohio Emergency Management Agency held more than 30 transportation-training sessions. The state's Department of Health,

meanwhile, instructs hospital staff on the treatment and handling of contaminated patients.

Ohio also offers tools and equipment to local officials so that they can identify a “radiological event” and determine if anyone has been contaminated.

## Charging for shipments

State efforts to plan and prepare for the transportation of radioactive shipments cost money. One idea for covering these expenses is to impose a fee on shippers, either through state statute or administrative rules.

These fees eliminate the need for negotiations with shippers over cost recovery and ensure reimbursement for transportation-related costs.

One problem is that the amount of revenue generated can vary significantly from year to year, making it difficult for a state to maintain a preparedness and response program

that is built around fee collections.

Still, five Midwestern states have decided the benefits outweigh any downsides.

NEBRASKA is the latest state in the region to develop a fee structure. Based on legislation passed in 2003, and then revised in 2005, the state charges \$2,000 per cask for truck and train shipments of high-level and transuranic waste.

The money is used for a variety of purposes: inspecting and escorting materials, education and training, equipment purchases and coordinating emergency-response capabilities.

Similarly, INDIANA’s fee structure (first implemented in 1999 and then revised in 2003) is used to equip local emergency responders as well as to provide training and education opportunities.

Under state statute, Indiana charges \$1,000 for each cask of spent fuel and

high-level waste and \$100 for each “total shipment” of low-level waste.


IOWA established its fee in 2001 and has since amended it twice.

Used to defray expenses related to planning and emergency-response preparedness, the rule applies to shipments of spent nuclear fuel, high-level waste and transuranic waste (\$1,800 per truck cask, and \$1,300 for the first rail cask and \$125 for each additional one). A \$125 fee is imposed for the transportation of low-level waste, either by train or truck.

Unlike Nebraska, Indiana and Iowa, revenue generated from MINNESOTA’s fee (\$1,000 per each vehicle, for truck and train shipments of spent fuel and other high-level waste) is deposited into the state general fund.

A legislative proposal in 2005 would have created a separate nuclear waste transportation account and revised Minnesota’s existing fee structure.

Illinois has the region’s longest-running fee program. Established more than 20 years ago, it pays for the state’s mandatory inspections and escorts of radioactive-materials shipments.

The state charges \$2,500 per truck. For a rail shipment, a fee of \$4,500 is imposed for the first rail cask; any additional rail casks cost \$3,000. That is the highest fee in the United States. 

*Tim Anderson is publications manager of the CSG Midwestern Office.*

## CSG helps states plan for radioactive shipments

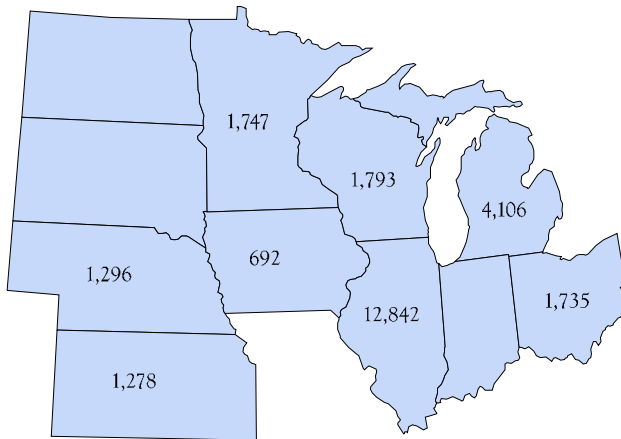
Regional planning for current and future shipments of radioactive materials is coordinated through a joint venture of CSG Midwest and the U.S. Department of Energy.

The Midwestern Radioactive Materials Transportation Project gives states the opportunity to learn about and provide input into DOE shipping plans. It also enables states to receive financial assistance.

The Midwestern Office of The Council of State Governments has had the cooperative agreement with the DOE for 16 years.

Project activities are overseen by the CSG Midwestern Radioactive Materials Transportation Committee, which is made up of state legislators and agency officials. For more information, contact Lisa Janairo at [ljanairo@csq.org](mailto:ljanairo@csq.org) or 920/803-9976.

## Spent nuclear fuel projected to be in storage by 2033 (in metric tons of uranium)



\* Indiana, North Dakota and South Dakota do not have any operating nuclear reactors. Projections for the nation estimate that 105,414 MTU (metric tons of uranium) will be produced and have to be stored in some way by 2033.

Source: U.S. Department of Energy (2002 Yucca Mountain environmental impact statement)

## Source Guide

For further information on issues related to the transportation of spent nuclear fuel and other radioactive waste:

Illinois Spent Fuel and High-Level Waste Inspection Program

[www.state.il.us/iema/publications/radioactive.asp](http://www.state.il.us/iema/publications/radioactive.asp)

Nebraska Radiological Materials Transportation Accident Emergency Action Plan

[www.nebema.org/index\\_html?page=content/rep/transportation.html](http://www.nebema.org/index_html?page=content/rep/transportation.html)

Nuclear Waste Policy Act of 1982

[www.epw.senate.gov/nwpa82.pdf](http://www.epw.senate.gov/nwpa82.pdf)

Office of Civilian Radioactive Waste Management

[www.ocrwm.doe.gov](http://www.ocrwm.doe.gov)

Private Fuel Storage

[www.privatefuelstorage.com](http://www.privatefuelstorage.com)

State of Nevada, Agency for Nuclear Projects

[www.state.nv.us/nucwaste](http://www.state.nv.us/nucwaste)

The Council of State Governments' Midwestern Radioactive Materials Transportation Project

[www.csgmidwest.org/About/MRMTP.htm](http://www.csgmidwest.org/About/MRMTP.htm)

Yucca Mountain Project

[www.ymp.gov](http://www.ymp.gov)

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