

**STATEMENT OF LAKE BARRETT
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**BEFORE THE
HOUSE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
SUBCOMMITTEE ON HIGHWAYS AND TRANSIT AND
SUBCOMMITTEE ON RAILROADS
APRIL 25, 2002**

Chairmen and Members of the Subcommittees, I am pleased to appear before you today. I am currently the Deputy Director of the Office of Civilian Radioactive Waste Management and have served as Acting Director or Deputy Director for the past nine years. This Office is responsible within the Department for implementing the Nuclear Waste Policy Act and developing a geologic repository and the associated transportation system to safely manage and dispose of the Nation's inventory of spent nuclear fuel and high-level radioactive waste. This Administration is committed to make progress towards solving this National problem while remaining true to the principles of sound science and responsible public policy.

On February 14, Secretary Abraham forwarded his recommendation to the President, based on approximately 24 years of research, that Yucca Mountain, Nevada, is suitable for development as the nation's geologic repository for spent nuclear fuel and high-level radioactive wastes. The President affirmed this recommendation by forwarding it to Congress on February 15. The State of Nevada has exercised a disapproval of the President's recommendation as provided for in the Act. As a result, this issue is again before the Congress for disposition, this time for expedited consideration under the framework Congress established in the NWPA. Specifically, Congress must act to pass a joint resolution to accept the President's recommendation or further consideration of a repository at Yucca Mountain will come to a halt.

Fifteen years ago, Congress legislated that a single underground repository located at Yucca Mountain holds the greatest promise for the long-term safety and security for the Nation. Since then, the great body of scientific work done has confirmed the fundamental soundness of the Yucca Mountain site. That alone is reason enough to support the joint resolution. The Secretary also concluded that proceeding with a repository is critical to a number of important national interests: national security, energy security, homeland security, and protection of the environment.

Moreover, the effect of supporting the resolution is not to decide that a repository will be built at Yucca Mountain. It is simply to authorize the Department of Energy to apply for a license from the independent, expert Nuclear Regulatory Commission, and to demonstrate to the NRC that a repository can be safely built there. DOE must also demonstrate that any transportation routes and modes the Department ultimately proposes

are safe. The Secretary is convinced that we will be able to make that case, and so am I.

On the other hand, anyone advocating opposing the joint resolution, and thereby bringing the program to an immediate halt, has a heavy burden of proof. That person must show that there is no reasonable possibility that the Department will be able to demonstrate the repository's safety to the NRC, that the Department therefore should not even be given the chance to try to do so, and that the basic decisions Congress made 15 years ago on this question were fundamentally flawed. The critics of the program have not come close to making that showing.

The critics of Yucca Mountain, in fact, are unable to refute the sound science that underlies the President's recommendation or dismiss the compelling national interests that support development of a repository at Yucca Mountain. Instead of addressing the merits of the recommendation, these critics have sought to create fear about transportation of spent fuel as a substitute for any real argument against permitting NRC to consider a license application for a repository at Yucca Mountain. I welcome this opportunity to set the record straight and dispel fears with facts.

At the outset, I would like to emphasize that no decisions concerning routes, modes, and timing of any shipments to Yucca Mountain have been made by the Department. The issue of transportation is one that will be addressed and resolved in consultation with States, local governments, and tribes – as well as with federal regulators – should Congress decide to approve Yucca Mountain as the site for a permanent underground repository.

Now, I would like to describe our experience in transporting spent fuel and other radioactive materials.

The Department and utilities have a long and successful record of shipping spent nuclear fuel and radioactive materials. The transportation experience internationally is also impressive. Critics hope that unwarranted fears associated with transporting nuclear waste are sufficient grounds to derail this critical national program. It is our firm belief, however, that the facts associated with transporting spent fuel clearly demonstrate that the critics' claims are unfounded, and that such shipments can be conducted safely.

Spent nuclear fuel transportation is neither new nor dangerous. Since the 1960s, over 1.6 million miles have been traveled by more than 2,700 spent nuclear fuel shipments without any harmful release of radioactive material. If Yucca Mountain is built, transportation of spent nuclear fuel and high-level radioactive waste from 131 temporary storage sites located in 39 States will begin in 2010. That is the scheduled opening date for Yucca Mountain. In any event, no spent fuel can be moved to Yucca Mountain until the Nuclear Regulatory Commission (NRC) licenses a repository at the site.

Our safety record is comparable to that in Europe, where spent nuclear fuel has been transported extensively since 1966. Over the last 25 years, more than 70,000 metric tons

of uranium in spent nuclear fuel (an amount roughly equal to what is expected to be shipped over the entire active life of the Yucca Mountain Project) has been shipped. France and Britain average 650 shipments per year, considerably more than the average of approximately 175 annual shipments currently contemplated for the Yucca Mountain Project, even though the population density in each of those countries greatly exceeds that of the United States.

The Department has expressed a preference to ship to Yucca Mountain by rail. Under the current 24-year waste emplacement schedule, that's an average of about 175 shipments of spent nuclear fuel per year. Even if DOE were to figure out a way to cut its waste acceptance timetable in half, and thus double the rate at which this material is shipped, it would still be only 350 shipments per year, or less than one per day. For the sake of comparison, let me note that there are 300 million annual shipments of other hazardous material: explosives, chemicals, flammable liquids, corrosive materials, and other types of radioactive materials that are currently transported around the country.

Moreover, DOE's practice is to follow strict Department of Transportation (DOT) and NRC transportation rules. These include the use of only NRC certified transportation cask designs, advance notification approvals, and shipment escorts. We also track DOE spent fuel shipments 24-hours a day by satellite. In addition, for highway shipments, each State has the ability to provide the DOT its preferred routes. Based on that information, the Department plans to work with States and Tribes to ensure that routes not only meet the regulations, but respond to community interests. Already, DOE has trained emergency response teams in 34 States, under a variety of programs in cooperation with other government agencies. Using funds provided by DOE, State safety officials, local firefighters and police will continue to be trained in advance to respond appropriately to any accident involving the shipments.

The safe transportation of nuclear waste starts with the use of robust shipping containers. All designs for casks that contain the spent nuclear fuel must be certified by the NRC and must be designed to withstand tests that simulate the conditions of severe accidents while safely containing their radioactive contents. These tests are:

- A 30-foot free fall onto an unyielding surface, which would be equivalent to a high-speed crash into a concrete bridge abutment;
- A puncture test allowing the container to fall 40 inches onto a steel rod 6 inches in diameter;
- 30-minute exposure to fire at 1,475 degrees Fahrenheit that engulfs the entire container; and
- Submergence of the same container under three feet of water.

To achieve certification, a cask must prevent harmful release of radioactive material even when subjected to each of these tests.

While critics have questioned the adequacy of these criteria, the safety of transportation casks has been studied for many years. For example, Sandia National Lab in New Mexico subjected truck transportation casks to real life accidents to see what would happen. They included:

- A flatbed truck loaded with a cask was smashed into a 700-ton concrete wall at 80 miles per hour;
- A cask was broad-sided by a rocket assisted 120 ton train locomotive traveling 80 miles per hour; and
- A transportation container, traveling 235 miles per hour, was dropped 2000 feet into soil as hard as concrete at impact.

In all these cases, the containers survived intact.

In 1984, the Central Electricity Generating Board (CEGB) of Great Britain conducted a spectacular demonstration of spent fuel cask integrity. CEGB ran an unmanned locomotive at 100 mph into a MAGNOX spent fuel cask. The test was conducted in front of 2,000 spectators and aired on British television. The cask survived the test with minimal damage. Although the cask was of British design, essentially the same international design standards are used in the United Kingdom and the United States.

In addition to robust containers, detailed planning will help ensure safety. The transportation of spent fuel is a collaborative effort between the Federal government and local jurisdictions. Federal laws have provided considerable discretion to the States and Tribes specifically to allow them to determine how best to address their citizens' concerns. We expect to work closely with local jurisdictions and to coordinate our planning with theirs. For example, the Department of Transportation has established a process that DOE and the States and Tribes must use for evaluating potential highway transportation routes. In addition, Federal regulations require that the NRC approve all road and rail routes and security plans for NRC licensed shipments of spent fuel. Accordingly, the Department will work with States and Tribes, the DOT, and the NRC to identify preferred shipping routes. States and Tribes can designate alternate highway routes.

Collaboration with local jurisdictions extends beyond the planning of routes and includes the coordination of operations. While DOE protects schedule and itinerary information, those with a need-to-know (i.e., State/Tribal representatives, law enforcement/emergency response officials, inspectors) are informed of spent fuel shipments as they are being transported and can track them on a satellite-based tracking system. The Governor of each State is notified of shipments in advance, and shipments are tracked around the clock. All shipments are coordinated with State and federal law enforcement agencies. In addition to continuous tracking by satellite, these shipments are required to have an escort physically report in every two hours to ensure there are no problems.

At a minimum, all shipments are accompanied by escorts 24-hours a day. Armed escorts

are required through heavily populated metropolitan areas and, at the discretion of the Governor, may be required through the entire State.

Effective emergency response supports the safe transportation of spent fuel should there ever be an incident or accident. States and Tribes will receive funding by DOE specifically for the Yucca Mountain shipments. Grants will be provided to train local officials along transportation routes in emergency response and inspection procedures and for the purchase of equipment. Funding is planned to begin in 2005. We have worked with the States and Tribes to develop a process to distribute the funds and we plan to finalize the process next year if Congress decides to designate the site.

This repository program specific funding is in addition to the emergency preparedness assistance that is already in place. Emergency responders (police, fire, and emergency management services) presently receive assistance/training from DOE, the DOT, the Federal Emergency Management Agency, and others. They are prepared to respond to incidents and accidents, and the Department will provide additional resources to respond to any accidents involving shipments to a repository.

Our plans for safely transporting spent fuel are not abstract. They have been refined as result of the experience we obtained in shipping campaigns associated with the Waste Isolation Pilot Plant (WIPP) in southeastern New Mexico. WIPP is certified to safely and permanently dispose of transuranic radioactive waste from the production of nuclear weapons. In the last three years, WIPP has received nearly 700 shipments and logged 1.5 million safe transportation miles. Since 1988, DOE has funded approximately \$30 million in training along routes to prepare for shipments of waste to WIPP.

Prior to the commencement of shipments to WIPP our training effort has been substantial and addressed many of the same issues and concerns that accompany the shipment of spent fuel. In all, WIPP has trained 21,486 State and Tribal first responders and 2,340 emergency medical personnel over the past 10 years. The DOE Transportation Emergency Preparedness Program (TEPP) provides technical assistance and training to emergency responders. In the past 2 years alone, the TEPP provided train-the-trainer and direct classroom training to responders in 34 States. This training has supported shipping campaigns for spent nuclear fuel, rail shipments of transuranic waste, and low- and mixed low-level waste. We directly trained over 1,200 responders. In addition, the trainers that we trained delivered training to many more (i.e., State, Tribal and local responder organizations). Training materials have been distributed nation-wide and are being integrated into standard training for first responders. In addition, DOT's Hazardous Materials Emergency Preparedness Grants Program has, to date, awarded \$73 million in grants to all 50 States, 5 territories, 42 Indian Tribes, and the District of Columbia.

It is important to keep in mind that a vote against permitting the initiation of a NRC licensing proceeding on a repository at Yucca Mountain does not mean there will be no transportation of spent fuel. Even without a repository at Yucca Mountain, the need to find a place to put the spent fuel that is continuing to accumulate will lead to the

transportation of these materials, and likely quite soon. On-site storage space is running out, and not all utilities can find new adjacent land where they can put this material. Therefore, they will devise ad hoc, off-site, consolidated storage alternatives. Already a consortium of utilities, working with a Native American Tribe, has presented to the NRC a facility proposed to be built on Tribal land. Whether or not this effort ultimately succeeds, it is likely that some similar effort will. The transportation of nuclear materials is not a function of a repository at Yucca Mountain, but rather is a necessary consequence of the material that continues to accumulate at the 131 sites in 39 States that are running out of room for it.

Let me close by reiterating the Secretary's observations before the Commerce Committee last week. He noted that the critics of this program would have Congress overturn the fundamental decisions it legislated 15 years ago – that a single underground repository located at Yucca Mountain holds the greatest promise for the long-term safety and security for the Nation. The great body of scientific work done since then has confirmed the fundamental soundness of the Yucca Mountain site. In addition, substantial real world experience demonstrates that the waste can be transported safely from its current 131 temporary storage locations to a permanent facility.