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Statement in Support of Private Fuel Storage Project

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My name is Steve Unglesbee. I represent the Nuclear Energy Institute, the Washington, D.C.-based organization that represents 270 companies involved a broad spectrum of nuclear technologies. NEI's membership includes electric companies that operate nuclear power plants, nuclear fuel cycle companies, suppliers, engineering and consulting firms, national research laboratories, manufacturers of radiopharmaceuticals, universities, labor unions and law firms.

My goal this evening is two-fold: first, to discuss used nuclear fuel management in the broader context of nuclear energy and its benefits to our society; and second, to state the industry's support for the PFS project as an important option for temporarily managing used nuclear fuel until a permanent underground disposal facility is ready.

America's 103 nuclear power plants are the safest, most efficient and most reliable in the world. Nuclear energy is the largest source of emission-free electricity generation in the United States, and the industry last year reached unsurpassed levels of safety and efficiency. Nuclear energy supplies 20 percent of all U.S. electricity and, through the interconnected grid of electric transmission wires, many western states use electricity produced at nuclear power plants in California, Washington and Arizona.

Efficiency and performance improvements at nuclear power plants have increased dramatically over the last decade—supplying the grid with the electricity equivalent to the output of 19 new large power plants. Nuclear power plants in 1999 produced 728 billion kilowatt-hours of electricity—an all-time record that is 53 billion kilowatt-hours more than the previous year. The industry's record electricity production–and record safety levels–continue this year, along with significant environmental benefits that are enjoyed by all Americans.

Nuclear Energy Improves America's Air Quality

Each year, nuclear power plants in 31 states play a significant role in improving our air quality. These plants each year avoid emitting approximately 5.1 million tons of sulfur dioxide emissions, 2.4 million tons of ozone-causing nitrogen oxide emissions and 150 million metric tons of carbon. To put this environmental advantage in perspective, the carbon avoided alone is like taking 99 million cars off of the road for the entire year. The emissions avoided by nuclear power plants help states meet federal Clean Air Act emission-reduction goals and help improve air quality in Western cities, such as Los Angeles and Phoenix. Today, the improved efficiency and production at nuclear power plants that I described earlier make nuclear power the single largest carbon-reduction technology among industry participants in the U.S. Department of Energy's Voluntary Reporting Program. The DOE report concluded that nuclear energy accounts for almost half of the total carbon avoidance reported by all U.S. industry.

Looking to the future, U.S. electricity demand is expected to increase by 50 to 75 percent in the next decade. We will need to maintain—and even increase—the 30-percent of our electricity we get from emission-free electricity sources, such as nuclear energy, solar, hydro and wind power. Of these, nuclear energy accounts for two-thirds of all emission-free electricity, and nuclear energy is the only expandable, large-scale electricity source that protects our air quality and meets the energy demands of a growing, modern economy.

Expanding nuclear power may ultimately prove to be one of our most strategic initiatives for mitigating the effects of air pollution and greenhouse gases. Without nuclear energy, it would be impossible for the United States to successfully reduce carbon dioxide and other emissions and at the same time expand our high-tech economy.

Temporary Fuel Storage Is Safe, But Not A Substitute For Final Disposal

Every technology that produces electricity has byproducts that must be managed. The federal government has the responsibility for disposal of used nuclear fuel and the byproducts of defense-related activities as part of long-established national policy. In 1982, the Nuclear Waste Policy Act codified federal policy for developing a disposal facility that will safely manage these byproducts for thousands of years. This law also set January 1998 as the date when the federal government would begin removing used fuel from nuclear power plants for disposal. In 1987, Congress focused the repository study on a site at Yucca Mountain, Nevada.

Energy Secretary Bill Richardson reaffirmed the current administration's support for this national policy as recently as last week, when he stated, "This administration is committed to resolving the complex, important issue of nuclear waste disposal in a timely and sensible manner and remains committed to a safe, permanent geologic repository." Secretary Richardson also last week repeated his position that DOE will provide a recommendation on Yucca Mountain's suitability to the president by the summer of 2001.

Two major scientific studies by DOE in 1998 and in 1999 point to Yucca Mountain as an appropriate site for a permanent repository.

Two years ago, Secretary Richardson said that his department's viability assessment of the Yucca Mountain site "reveals that no show stoppers have been identified at Yucca Mountain and that scientific and technical work should proceed."

DOE's draft environmental impact statement, released last year, represents the most recent and comprehensive summary of the impressive scientific research effort that DOE has conducted at Yucca Mountain over the past two decades. The draft environmental impact statement says that the impacts associated with the Yucca Mountain repository would be small. It also predicts that peak annual radiation exposures over 10,000 years, due to the repository, would be less than 1 percent of radiation present in nature at that location, or less radiation than I will receive by flying from Washington, D.C., to Salt Lake City and back.

Although two decades of scientific studies point to Yucca Mountain as an appropriate site for a repository, DOE's delay in meeting its 1998 commitment to manage fuel at a federal site has meant that some nuclear power plants have run out of storage capacity. Some plants have reracked their fuel pools to hold more used fuel. Some have expanded their storage capacity by building above-ground "dry cask" facilities.

But some nuclear power plants are unable to expand their capacity to store fuel onsite. These plants must move used nuclear fuel to centralized storage, like that envisioned by Private Fuel Storage. This storage technology is well understood and has been demonstrated to be safe at 21

nuclear plant sites that have been operating similar facilities since the late 1980s. During the operation of these onsite fuel storage facilities, there has never been a release of radiation to the public. For the PFS facility–which is simply a larger version of above-ground storage facilities at plant sites–the NRC calculates that an individual standing at the boundary of the PFS facility would receive "no more than a fraction of the normal background radiation dose in the United States."

PFS and other storage facilities—whether they are facilities operated on nuclear plant sites by electric companies or other private fuel storage ventures—are viable, valuable options for managing used nuclear fuel, but they are not a substitute for a permanent disposal facility. They are a temporary solution until a permanent disposal facility is operating. The PFS facility would be licensed by the NRC to operate for up to 20 years. Meanwhile, the industry and the federal government remain committed to the development of a permanent disposal facility for used nuclear fuel. If the president approves the Yucca Mountain site, disposal would begin as early as 2010, according to DOE's schedule.

The containers that PFS proposes to use at its fuel storage facility have been certified by the Nuclear Regulatory Commission to meet federal safety standards. These robust containers are designed and built to meet NRC regulations that ensure they will protect the public and workers. As part of meeting the NRC's regulations for container design and construction, the company that manufacturers the container had to demonstrate, using physical testing and computer modeling, that the container systems would perform as designed during normal use and under extraordinary conditions, such as earthquakes, fires and explosions and severe accidents.

Safely Transporting Used Nuclear Fuel

Managing used nuclear fuel inevitably raises the issue of transporting the material from nuclear power plants to a storage facility. I am proud to tell you that the nuclear energy industry and others responsible for used nuclear fuel shipments have established an exemplary safety record: More than 10,000 used fuel assemblies have been transported in more than 3,000 shipments in the United States since 1964. Internationally, 10 times as many shipments have been carried out safely. No fatalities, injuries or environmental damage have occurred because of the radioactivity of the cargo.

Using proven container technology, the nuclear energy industry and others responsible for nuclear fuel shipments have established this exemplary safety record. Used nuclear fuel shipments travel along Department of Transportation-designated highway routes or by rail. However, states also may designate dedicated highway routes for transportation of radioactive materials.

The Nuclear Regulatory Commission and DOT strictly regulate the shipment of used nuclear fuel and other radioactive materials. These strict controls and the rugged designs of the fuel containers are reasons why no harmful levels of radioactivity have been released in the eight transportation accidents that have occurred in 35 years involving radioactive materials.

The regulatory program for transporting radioactive material ensures public health and safety as well as protection of the environment from dangerous releases of radioactivity.

- The Department of Transportation regulates highway routing, packaging, labeling, shipping papers, personnel training, loading/unloading, handling and storage as well as transportation vehicle requirements.

- The Nuclear Regulatory Commission must approve shipping container design and manufacturing to ensure the containers maintain their integrity under routine transportation conditions and in the event of severe accidents, as the agency as done for the containers that would be used at PFS. The agency also examines shipping routes to ensure the security of fuel shipments.

According to NRC regulations, the radiation level of containers during shipment cannot exceed 10 millirem per hour at a distance of about six feet from the truck. At this level, a person who spends 15 minutes standing six feet away from the vehicle carrying radioactive materials would receive 2.5 millirem of radiation. This is about the same amount of radiation I received from cosmic sources on my flight from Washington to be here with you this evening. The average person receives 10 millirem from a dental x-ray and about 300 millirem each year from natural background radiation.

Transportation Department regulations require shippers to use the most direct routes for hazardous material shipments—taking advantage of interstate highways and bypasses that avoid large cities. States also can work with DOT to establish preferred highway routes and time periods for shipments. Eleven states have submitted preferred routes to DOT. The transporter must comply with regulations that may require specific state notification, weight limits and time-of-day restrictions. Transport operators are strictly regulated to assure that drivers are well-rested and fit for duty.

The full range of safety precautions and regulations will apply to the PFS fuel shipments, which will be average about two trains a week to the facility. Experience has shown that a small number of accidents could happen in any form of transportation, so used fuel containers are engineered to meet high safety standards established by the NRC. Given that the nuclear energy industry transports used fuel based on a philosophy that emphasizes safety every step of the way and has a 35-year record of zero radiation releases when a few accidents have occurred, NRC has concluded that "radiological doses to the public along spent nuclear fuel shipping routes to Skull Valley would be small and controlled by regulatory restrictions."

Conclusion

Used nuclear fuel storage facilities like the PFS facility use proven, independently reviewed container technology to safely store used fuel rods. Experience has shown that such facilities provide the highest level of protection for public health and safety. Likewise, the nuclear industry has demonstrated that used nuclear fuel can be transported safely. Earlier this year, the NRC stated that transporting used fuel–which the agency had said carried a "very small" risk–is even safer than previously estimated. Based on years of experience and new analytical techniques, the NRC concluded that past transportation studies used very conservative assumptions that overestimated the frequency and consequences of accidents.

NEI supports the PFS project as a temporary solution to safely and efficiently manage used nuclear fuel until a federal disposal facility is built and operating—expected as early as 2010.