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U.S. House of Representatives

On the proposed Yucca Mountain Nuclear Waste Repository

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Chairman Barton, ranking member Boucher and distinguished members of the subcommittee, I am Joe Colvin, president and chief executive officer of the Nuclear Energy Institute. I am pleased to have this opportunity to testify regarding the President's recommendation of the Yucca Mountain, Nev., site as our nation's repository for used fuel rods from commercial nuclear power plants and high-level radioactive waste from our country's defense programs.

NEI coordinates public policy on issues affecting the nuclear energy industry, including the management of used nuclear fuel from 103 commercial nuclear power plants that produce electricity for one of every five homes and businesses in the United States. The Institute represents nearly 275 companies, including every U.S. company licensed to operate a commercial nuclear reactor, industry suppliers, fuel fabrication facilities, architectural and engineering firms, organized labor, law firms, radiopharmaceutical companies, research laboratories, universities and international nuclear organizations.

The nuclear energy industry strongly supports the decision by President George Bush that Yucca Mountain be further developed as a disposal facility to manage used nuclear fuel and other high-level radioactive waste.

The industry appreciates this opportunity to provide its perspective on this important program. Building a specially designed repository at Yucca Mountain will begin the process of moving used nuclear fuel and high-level radioactive waste now stored at 131 sites—including Department of Energy facilities, university reactors, defense sites and commercial nuclear plants—to one safe and secure facility under a remote Nevada desert ridge.

Used fuel is safely stored at nuclear power plant sites, either in steel-lined, concrete vaults filled with water or in steel or steel-reinforced concrete casks or bunkers with steel inner canisters. Although the Nuclear Regulatory Commission (NRC) determined that used fuel could be stored safely at plant sites for 100 years, scientific consensus supports disposal in a specially designed underground repository. The Nuclear Waste Policy Act of 1982 codified this longstanding federal policy, and the 1987 amendments to the law required the Energy Department to study Yucca Mountain solely as a specially designed underground repository.

Nonetheless, more than four years ago, the federal government defaulted on its obligation—under the law and in contracts between utilities and DOE—to begin moving used fuel from the nation’s nuclear power plants. Because of the government’s default, electricity consumers still are paying for additional on-site storage over and above the \$18 billion already committed to the federal repository program. DOE’s delay in managing the federal nuclear fuel program has forced nuclear power companies to store more used fuel than expected for longer than originally intended. By the end of 2006, about 60 reactors will run out of their original storage space, and by the end of 2010, 78 reactors will have exhausted their original storage capacity. Companies that have not added on-site storage capacity by those dates would have to do so at that point.

As a result of the Energy Department’s default on its January 31, 1998, obligation to begin moving used nuclear fuel from nuclear power plants, electricity consumers will have to pay an additional \$5 billion to \$7 billion for used fuel management, assuming the repository is available in 2010—and much more if repository operation does not begin by 2010. Nuclear power plant owners are suing the federal government in the U.S. Federal Claims Court due to DOE’s failure to meet the 1998 obligation. The court has reaffirmed the federal government’s obligation and the lead cases are in the damages phase. The Department of Energy must move forward with the Yucca Mountain project, under the current schedule, to meet its legal commitment to consumers to begin receiving used nuclear fuel at a federal disposal facility and to limit the federal liability for missing the 1998 deadline to a minimum.

Nevada’s April 8 notice of disapproval of the President’s Yucca Mountain recommendation brings the federal government to the next step in the deliberative process established in the Nuclear Waste Policy Act. It is now up to the Congress to approve Yucca Mountain and advance the program from the study phase to the license application phase. The nuclear energy industry calls on Congress to fulfill its responsibility to advance the national interest and approve the site.

Approval of a repository at Yucca Mountain is key for U.S. energy security, our national security, future growth of our economy and nuclear energy, and absolutely essential for environmental protection.

Scientific Basis Supports Yucca Mountain Recommendation

Deep geologic disposal, like the proposed repository at Yucca Mountain, has been identified by the world’s leading scientists as the best way to isolate radioactive byproducts while protecting public safety and the environment for thousands of years. Twenty years of world-class study by hundreds of expert scientists and engineers—36 million hours in all—have produced an indisputable body of evidence supporting the designation of Yucca Mountain as a repository site.

The scientific evaluation of Yucca Mountain is unmatched by any other comparable endeavor in the United States. Teams of the world’s best scientists examined every aspect of the natural environment at Yucca Mountain—including collecting and

examining more than 75,000 feet of core rock and 18,000 geologic and water samples, mapping and modeling various features of the mountain, and conducting an array of scientific experiments in six and one-half miles of tunnels in an underground laboratory. One of those experiments is the largest known test in history to simulate heat effects of a repository on the rock at Yucca Mountain.

Scientists have used this vast collection of data to develop computer simulations of the natural features, events and processes that exist at Yucca Mountain. They also have used these models to forecast how the facility will perform hundreds and thousands of years from today. In addition to the natural systems that would protect the public and the environment, a series of man-made safety features—including corrosion-resistant alloy containers that will hold the reactor fuel rods—will be incorporated in the repository design to further protect public safety and the environment. Numerous oversight groups have thoroughly reviewed the results of DOE's scientific studies, including the NRC, the Nuclear Waste Technical Review Board, the University of Nevada system, as well as international groups. These scientific studies also have been subject to extensive scientific peer review.

In Secretary Abraham's recommendation to the President, he said: "The first consideration in my decision was whether the Yucca Mountain site will safeguard the health and safety of the people, in Nevada and across the country, and will be effective in containing at minimum risk the material it is designed to hold. Substantial evidence shows that it will."

A broad spectrum of experts, including the International Atomic Energy Agency and Lawrence Berkeley National Laboratory, agree that there is scientific information to support the President's recommendation of Yucca Mountain as a safe repository site.

The Nuclear Waste Technical Review Board, a scientific advisory panel to the U.S. Congress, reported to Congress in a January 24 letter that research at Yucca Mountain indicates that "no individual technical or scientific factor has been identified that would automatically eliminate Yucca Mountain from consideration as the site of a permanent repository." Although pointing out issues where further DOE attention should be focused, the NWTRB said that there is no reason that the Yucca Mountain program should not move forward. The outstanding issues identified by the NWTRB will be resolved during the DOE licensing process with the Nuclear Regulatory Commission. In fact, several of these issues already have been resolved to NRC's satisfaction.

We urge Congress to join the scientific community and a far-reaching group of bipartisan governors, state legislators and local officials across the nation who have endorsed the Yucca Mountain repository program.

Despite the comprehensive record of science, some opponents of this project continue to call for additional study. Their claims are thinly veiled attempts to delay this important national facility. The President's recommendation is consistent with the National Academy of Sciences' conclusion in 1990 that a deep geologic repository is "the best

option for disposal of high-level radioactive waste.” There is no need for additional study on the mode of disposal, or the Yucca Mountain site in particular, in advance of the site selection.

Scientific Analysis Continues During NRC Licensing Phase

I want to clarify an important point regarding Yucca Mountain. The site approval process is a first, but necessary, step that starts the formal design and safety evaluation process for a repository at Yucca Mountain. Scientific evidence supports the approval of the Yucca Mountain site for an underground repository, where used nuclear fuel can be securely managed. After congressional approval of the President’s decision, DOE will continue a multi-year scientific process through an extensive licensing review process and, if the license is approved, operation of the facility. The NRC, through its exacting licensing process, must ensure that the repository meets stringent regulatory requirements to protect public safety and the environment. This independent licensing review process will require the resolution of outstanding scientific issues identified in the siting process.

No repository construction can proceed at Yucca Mountain without first being licensed by the NRC. If new scientific issues arise in the process of the licensing review or operation of the repository, they must be resolved or DOE cannot continue. The nuclear energy industry, as a stakeholder in the Yucca Mountain project, will participate in this program with safety as our foremost consideration—just as it is with operation of the nation’s nuclear power plants.

Although some 600 scientific and technical reports have been completed on Yucca Mountain over the course of the Reagan, Bush, Clinton and current administrations, scientific research will continue. This ensures that the best scientific insight will continue to be provided in combination with cutting edge engineering and the natural features of Yucca Mountain to protect public safety and the environment.

The U.S. General Accounting Office issued a report last December reviewing the Yucca Mountain project. Instead of investigating the site using scientific reports assembled in the course of 20 years of study, the GAO relied extensively on conversations with DOE’s contractor about the project schedule and budget. Remarks by this contractor regarding the licensing schedule for the repository have since been retracted.

The GAO report stated that there are 293 technical items that DOE should resolve with the NRC before a site recommendation could be made. This reflects a fundamental lack of understanding by the GAO about the repository siting process. Neither the law nor the NRC licensing process requires that these items be resolved before a site recommendation can be made. Rather, regulations require that any scientific issues related to assuring protection of public health and safety be resolved during the NRC licensing process and DOE has plans to do so. This requirement has been satisfied.

The NRC stated that it “believes that sufficient . . . analysis and waste form proposal information, although not available now, will be available at the time of a potential

license application such that development of an acceptable license application is achievable.”

Electricity Consumers Deserve Return on \$18 Billion Investment

Mr. Chairman, the time to move forward with licensing and building a repository has never been more appropriate. The Department of Energy has spent more than \$7 billion on scientific and engineering studies that demonstrate that the site is suitable for disposal of used nuclear fuel and that the site is ready to proceed to the license phase. It is important to note that the Yucca Mountain project is funded largely by a tax on the millions of consumers who benefit from the use of nuclear energy. Last year, nuclear power plants generated a record 767 billion kilowatt-hours of electricity. The tax for the Yucca Mountain program collected by the U.S. Treasury totaled more than \$728 million. Since 1983, more than \$18 billion, including interest, has been committed by consumers solely for DOE’s used nuclear fuel management program.

The federal Nuclear Waste Fund has a balance of more than \$10 billion because consumer payments into the fund have far exceeded appropriations by Congress for this important environmental program for decades. For example, consumers committed well over \$500 million more for the Yucca Mountain program in 2001 than was spent on the project. The industry greatly appreciates the Energy and Commerce Committee’s and this subcommittee’s commitment to consumer fairness embodied in your efforts to take the Nuclear Waste Fund “off budget” in last year’s energy policy legislation.

Yet, delays in the repository program can no longer be tolerated. Although the federal government was to start accepting used nuclear fuel on January 31, 1998, no fuel has been moved to a federal fuel management facility, and DOE projects that no fuel will start moving until 2010 at the earliest.

The Energy Department’s delays have resulted in dual payments by electricity consumers for used nuclear fuel management—one to fund the Yucca Mountain project and a second to pay for additional temporary storage at nuclear plants because of DOE’s default. Operation of a federal repository at Yucca Mountain would begin the process of removing used fuel rods from commercial nuclear power plants and the radioactive byproducts from the nation’s defense facilities in 39 states—where it was never intended to be stored for the long term. Electricity consumers deserve a solution to this issue that is based on sound science and that protects public safety and the environment.

Conclusion

The federal government must continue on schedule with its program to site, license, and build a used nuclear fuel repository to provide the nation with continued energy security, environmental protection, economic growth and national security. Used nuclear fuel and radioactive defense waste is safely stored at nuclear power plants in 39 states, but the federal government has a legal obligation to consolidate this material at a central location where it can be efficiently managed for the long term.

A repository 1,000 feet below the surface of Yucca Mountain is the safest and most secure place for the permanent disposal of used nuclear fuel from commercial reactors and high-level radioactive byproducts from our U.S. defense programs. The vast scientific record supports the site designation, and domestic energy security, environmental protection and national security considerations should compel Congress to support the President's recommendation and provide the funding needed to proceed with licensing and construction of a specially designed repository at Yucca Mountain.

- There is broad support for congressional approval of the Yucca Mountain repository from a myriad of groups, including:
 - African-American Environmentalist Association
 - American Public Power Association
 - Council for Citizens Against Government Waste
 - Covering Your Assets Coalition
 - Edison Electric Institute
 - Frontiers of Freedom
 - Hispanic Business Roundtable
 - International Brotherhood of Electrical Workers
 - The Latino Coalition
 - National Association of Manufacturers
 - National Association of Neighborhoods
 - National Black Chamber of Commerce
 - Nuclear Energy Institute
 - 60 Plus Association, Inc.
 - The Seniors Coalition
 - United Seniors Association, Inc.
 - U.S. Chamber of Commerce
 - U.S. Hispanic Chamber of Commerce
 - Utility Workers Union of America

In the press, editorial pages by a margin of 7 to 1 support the Yucca Mountain project, including:

- Albuquerque Journal
- Chicago Sun-Times
- Chicago Tribune
- Cleveland Plain Dealer
- The (Allentown, Pa.) Morning Call
- The New York Times
- Tennessean
- The Wall Street Journal
- The Washington Times
- Wilmington (N.C.) Morning Star

In his letter forwarding the Yucca Mountain site recommendation to the President, Energy Secretary Abraham said, "First, and most important, I have considered whether

sound science supports the determination that the Yucca Mountain site is scientifically and technically suitable for the development of a repository. I am convinced that it does.”

Mr. Chairman and distinguished members of this subcommittee, scientists and policymakers alike are convinced that the Yucca Mountain site is scientifically and technically suitable to be the nation’s repository for used nuclear fuel from nuclear power plants and high-level radioactive waste from Defense Department programs. It is imperative that Congress support continued timely progress toward development of a national repository at Yucca Mountain.

A repository is imperative for our energy security, given that nuclear energy provides 20 percent of all U.S. electricity and is the largest emission-free source of electricity.

A repository is imperative for our national security because about 40 percent of our Navy’s most essential vessels, such as aircraft carriers and submarines, are nuclear-powered ships.

A repository is imperative for future growth of our economy and nuclear energy, which is the only large source of electricity that is readily expandable and does not produce greenhouse gasses or other harmful emissions.

A repository is imperative for environmental protection, particularly at facilities in Colorado, Idaho, New Mexico, New York, South Carolina and Tennessee where defense waste is stored, and in Maine, Connecticut, Oregon, Illinois, California and other states where sites with decommissioned reactors cannot be returned to greenfield status without a repository to accept used fuel rods stored at those plants.

And, **a repository is imperative to promote U.S. non-proliferation objectives** by providing a disposal facility for surplus weapons grade plutonium.

Mr. Chairman, an editorial in the March 9 *New York Times* summarizes, I believe, the prevailing notion held by many regarding Yucca Mountain. The *Times* said, “It is time to determine, once and for all, whether Yucca Mountain is a suitable disposal site, or whether the nation will need to look elsewhere... The Nuclear Regulatory Commission, the chief guardian of the public’s health, has ruled that enough information will be available to support a licensing application. The reason to proceed now is that it will force all parties to come up with final answers to a problem that has been allowed to fester too long.”

After 20 years of scientific and engineering study and billions of dollars from consumers used to fund this research, a large, indisputable body of research results supports the President’s decision.

Thank you.