

Government Must Meet Used Fuel Responsibility Including Completion of Yucca Mountain Facility

September 2007

Key Points

■ In 1982, Congress charged the U.S. Energy Department with building a disposal facility for used fuel from the nation's nuclear power plants and high-level radioactive waste from U.S. defense programs. The law set a 1998 deadline for the federal government to begin accepting used fuel. However, the program continues to encounter delays.

■ All three branches of government have endorsed DOE's decision to move forward with the Yucca Mountain, Nev., repository after one of the most extensive scientific investigations in our nation's history. DOE plans to submit a license application for Yucca Mountain by June 2008.

■ DOE must move used fuel from nuclear plant sites at the earliest possible time. Simply assuming ownership of the used fuel at the plant sites is not sufficient. DOE must complete the Yucca Mountain repository for the long-term disposition of this material.

■ Electricity consumer payments to the Nuclear Waste Fund, plus interest, total \$30 billion. The fund is growing by about \$1 billion per year. The fund, if used as intended, will pay for disposal of the nation's commercial used nuclear fuel. The industry supports revisions to the Nuclear Waste Fund's budgetary treatment to help DOE plan for the future.

■ Congress should consider additional measures to facilitate the movement of used fuel away from reactors. This includes factors contributing to delays in the Yucca Mountain project, moving used fuel to federal storage facilities and developing guidance on used fuel

management contracts with DOE for new plants.

Government Calls for Repository; Looks to Yucca Mountain

The Nuclear Waste Policy Act of 1982 and its 1987 amendments assigned to DOE the responsibility for managing used fuel from commercial nuclear power plants and nuclear waste from U.S. defense and research activities. The law levied a tax on electricity generated by nuclear power to pay for the federal government's waste program.

Under contracts with electric companies, DOE agreed to accept the used fuel at a repository, beginning in 1998. Consumers have committed \$30 billion to the Nuclear Waste Fund.

Presidential and congressional approvals of the site in 2002 resulted in the Yucca Mountain Development Act. This is the government's most significant step to date toward meeting its obligation. However, DOE is still years behind in meeting its commitment to electricity ratepayers. DOE must obtain licenses from the U.S. Nuclear Regulatory Commission to build and operate the repository and prepare for transportation of fuel to the facility.

Several obstacles have slowed DOE's efforts to complete a license application for Yucca Mountain, but the agency has met some regulatory and management challenges.

DOE plans to submit a license application to the NRC by June 2008. Under DOE's "best-achievable" construction schedule, the repository could open in 2017. This assumes Congress will appropriate full funding for the project each year. This also assumes timely approval of the license application by the NRC. DOE officials have conceded that,



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given these obstacles, 2021 is a more likely opening date.

While preparing the application, DOE held numerous pre-licensing discussions with the NRC. These discussions have helped resolve technical issues raised by the NRC. The documentation resulting from this process should expedite the licensing review. This strong record of accomplishment supports the NRC's commitment to review the license application within four years, as mandated by law.

Under the terms of the 1982 law, DOE also must assume ownership of the used fuel and remove it from nuclear plant sites. Preferably, the agency will use multi-purpose canisters approved by the NRC for storage and transportation of the used fuel. In addition, DOE must be responsible for providing and paying for storage. Simply taking ownership of the used fuel and leaving it at current locations defers this issue to future generations.

Yucca Mountain Is Fundamental Part of Advanced Fuel Cycles

Reassessment of the nation's used fuel management policies, together with the expansion of nuclear power, has spurred new interest in recycling used nuclear fuel. The industry fully supports the development of advanced nuclear fuel cycles, including advanced reprocessing technology, and considers a successful repository program an essential step toward achieving these goals. Even advanced fuel cycles will produce radioactive byproducts that will require disposal in a repository.

The development of advanced nuclear fuel cycles should not delay progress on the Yucca Mountain repository. Advanced fuel cycles will require significant investment. To make that investment with confidence, the federal government must progress further toward managing the byproducts of today's fuel cycle. In reality, DOE will

modify the repository many times to accommodate future developments over the 50- to 300-year period that it is expected to be open. DOE has said the license application will include methods for disposing of waste from advanced recycling technology in the repository. But the disposal of today's byproducts must not be put on hold while we develop new technologies. Completion of the Yucca Mountain project therefore should remain a national priority.

Sound Science Supports Yucca Mountain Repository

Yucca Mountain has the best attributes for a repository, according to exhaustive scientific study of the site. Its selection followed preliminary screening of nine sites in six states. This screening was only the beginning of more than 20 years and \$9.5 billion in scientific and engineering analyses. This unprecedented effort involved 2,500 of the nation's top scientists and the construction of the world's largest underground laboratory consisting of 7 miles of tunnels and hundreds of deep boreholes. Over the past two decades, scientists have studied all aspects of the geological, hydrological and geochemical environment, along with a detailed evaluation of how conditions might evolve over thousands of years at Yucca Mountain.

Top scientists from the International Atomic Energy Agency and the Organization for Economic Cooperation and Development's Nuclear Energy Agency analyzed DOE's conclusions and issued a report in 2001 that confirmed DOE's work. In 2002, DOE recommended the Yucca Mountain site to the president and Congress.

Courts Affirm Government's Obligation to Accept Waste

In 1996, a coalition of state utility regulators, attorneys general and utilities with nuclear plants from more than 20 states filed suit to force DOE to take the used fuel. Shortly thereafter, the U.S. Court of Appeals reaffirmed

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DOE's legal obligation to begin accepting used fuel in 1998.

Following that ruling, federal courts have continued to hold DOE accountable to its fuel acceptance deadline. Since 1998, the U.S. Court of Federal Claims has ruled on several occasions that DOE breached its contract to begin used fuel acceptance.

The liability for this breach includes unforeseen expenses at short-term storage sites and damages for failing to honor used fuel acceptance contracts with electric utilities. The longer the government is in default, the higher the potential costs to consumers and potential liability to taxpayers.

Electric utilities have filed more than 60 lawsuits in federal courts to recover damages from the government's failure to begin managing used fuel. The courts to date have awarded companies more than \$250 million. The government also is paying hundreds of millions of dollars in out-of-court settlements.

Court Upholds Site Approval

In July 2004, the U.S. Court of Appeals in Washington, D.C., issued decisions on a group of consolidated cases in which Nevada challenged the Yucca Mountain project on various grounds. Nevada has aggressively pursued these challenges, having failed to prevent the presidential and congressional approvals of Yucca Mountain in 2002.

In its rulings, the appeals court rejected all of Nevada's claims, except its challenge regarding the 10,000-year compliance period for meeting Environmental Protection Agency regulatory requirements to protect the public from radiation exposure. The court ruled that the 10,000-year compliance period was inconsistent with a scientific report requested by Congress in 1992 that recommended a longer period. The court decision called for EPA to work with the NRC to address longer time frames.

In August 2005, EPA proposed a revised radiation standard for Yucca Mountain that would extend the compliance period to 1 million years. The agency expects to issue the standard later this year. The Energy Department's work on the Yucca Mountain site itself and preparation of the license application for the facility continue while EPA addresses comments on the proposed radiation standard.

Congressional Budget Rules Create Funding Uncertainty

Since passage of the Nuclear Waste Policy Act in 1982, the federal government has paid for its program to create a repository through a combination of a tax on nuclear energy consumers and federal funding. This reflects the dual purpose of a repository that will manage used fuel from commercial nuclear power plants and high-level radioactive waste from defense applications.

Congress' original intent was to ensure that funds were available for repository costs and would be paid by program users. Since 1983, electricity consumers have committed \$30 billion to the Nuclear Waste Fund.

The \$20-billion balance of the Nuclear Waste Fund currently is growing at a rate of more than \$1 billion per year. Interest on the fund is accruing at about \$700 million annually. Consumers using electricity from nuclear power plants paid an average of \$720 million in fees annually over the past five years. However, appropriations from the fund have averaged less than \$200 million per year since 2001.

The Nuclear Waste Fund was established in 1982 as a separate account in the federal treasury. However, congressional efforts to control deficit spending in the 1980s and 1990s, in effect, have changed the status of the fund. Appropriations from the fund, but not the receipts, were placed under a discretionary spending cap. The result is that the Nuclear Waste Fund is subject to appropriations caps.

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Under the current approach, Congress must fund the used fuel program within the confines of the discretionary spending allocation in the Energy and Water Development Appropriations bill. As a result, Yucca Mountain funding has been reduced consistently to allow for increased funding in other, unrelated areas, despite the fact that receipts into the fund are earmarked specifically for the used nuclear fuel disposal program. Continued funding uncertainty resulting from the congressional budgetary process could lead to additional delays and increase the cost to taxpayers.

As the Yucca Mountain repository moves toward full-scale development, the funding requirements for the project will increase significantly. Congress must reform the funding process for the Yucca Mountain project to complete this important national effort in a timely and cost-effective manner.

Widespread Support for Change

The National Association of Regulatory Utility Commissioners (NARUC) and other groups support Nuclear Waste Fund reform. In 1992, NARUC recommended removing the Yucca Mountain project from the federal government's budget. This was intended to ensure Nuclear Waste Fund payments are used solely to pay for the used fuel management program. NARUC has many times since reiterated its support for reforming the fund "so it is fully available for its intended purpose."

The Nuclear Waste Strategy Coalition—an organization composed of public utility commissioners, state attorneys general and electric companies—also supports a reclassification of the Nuclear Waste Fund to guarantee funding for the Yucca Mountain repository and related programs.

In addition, DOE has testified that additional delays in the acceptance of used fuel at Yucca Mountain would increase costs by \$1 billion per year in defense waste life-cycle costs, operating costs at utilities and Yucca Moun-

tain fixed costs, exclusive of potential litigation damages.

Restoring the fund to its original budgetary status will not undermine congressional oversight of the program, since Congress would retain the right to limit annual expenditures. However, it will eliminate the artificial competition with unrelated programs. This same fundamental principle has been successfully applied in the Highway Trust Fund, and the Airport and Airway Trust Fund.

Congressional Action Needed for Government to Meet Obligation

Opinion leaders, policymakers from both sides of the political aisle and the media support federal management of used fuel and the Yucca Mountain project, considering these objectives vitally important to meeting the nation's environmental, energy and national security goals. Completing the Yucca Mountain project in a timely manner should remain one of the federal government's highest priorities.

Achieving these goals requires action by Congress, including the following:

- reclassification of the Nuclear Waste Fund to facilitate adequate funding for federal used fuel management
- elimination of the 70,000 metric ton limit on used fuel storage at Yucca Mountain
- permanent withdrawal from public use of approximately 147,000 acres of land at and surrounding the repository site
- establishment of a "waste confidence" determination, which means that the NRC can carry out specific licensing actions for new reactors based on the assurance that the government will manage the nation's used fuel.

This policy brief is also available at www.nei.org.