



Testimony

**Statement of
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The Federal Government's Responsibilities and Liabilities Under the Nuclear Waste Policy Act

**before the
Committee on the Budget
U.S. House of Representatives**

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Mr. Chairman, Congressman Ryan, and Members of the Committee, I am pleased to appear before you today to discuss the federal government's responsibilities and liabilities under the Nuclear Waste Policy Act of 1982 (NWPA). Since I last testified on this subject in 2007, there have been a number of important developments that I would like to highlight in my testimony:

- The Administration has announced that it intends to terminate the Yucca Mountain project and explore other alternatives for disposing of nuclear waste. Despite that change in policy, however, the federal government remains responsible for permanently disposing of spent nuclear fuel generated by civilian facilities, which pay fees for that service. Regardless of how the government meets that responsibility, discharging those liabilities will require significant federal spending over many decades.
- The Department of Energy (DOE) has not yet disposed of any civilian nuclear waste and currently has no identifiable plan for handling that responsibility. Nevertheless, the operators of nuclear utilities continue to pay fees—of about \$750 million annually—to cover the costs of disposing of the nuclear waste they generate. Over the past 25 years, those firms have paid a total of \$16.3 billion for waste disposal services that they have not yet begun to receive.
- The federal government is more than 10 years behind schedule in its contractual obligations to remove and dispose of such waste, and the government has paid nuclear utilities \$565 million in compensation for costs incurred because of its failure to meet that schedule. DOE currently estimates that liabilities to electric utilities for such damages will total more than \$12 billion if the department begins to accept nuclear waste by 2020. How the Administration's decision to terminate the Yucca Mountain project will affect the federal government's liabilities is unclear, but the estimate will climb if the department's schedule slips beyond 2020. Regardless of whether or when the government opens a repository, such payments (which come from the Department of the Treasury's Judgment Fund) will probably continue for several decades.
- The Nuclear Regulatory Commission (NRC) has now extended the operating licenses of more than half of the nation's nuclear power plants for another 20 years beyond the span of their initial operating licenses. Meanwhile, the amount of existing waste may already exceed the amount authorized to be disposed of at the repository envisioned under NWPA. Ultimately, a change in law will be required to authorize DOE to permanently dispose of all of the waste anticipated to be generated by existing nuclear power plants at a site other than Yucca Mountain. Without such a change and steps toward that end, taxpayers will continue to pay utilities—through settlements and claims awards—to keep storing substantial amounts of waste.

The Federal Government's Responsibilities Under the Nuclear Waste Policy Act

The Nuclear Waste Policy Act established statutory responsibility for federal actions to take possession of and permanently dispose of spent nuclear fuel generated at civilian nuclear reactors, as well as to dispose of radioactive waste resulting from federal activities in manufacturing nuclear weapons. Under current law, the only solution that the government is authorized to pursue involves permanent disposal of waste at a geologic repository, and Yucca Mountain in Nevada is the only place where such a repository may be located.

Under NWPA, the federal government, through DOE, faces substantial costs to establish a repository for the nation's nuclear waste. It has also incurred contractual obligations to remove waste from civilian nuclear facilities. Under the legislation, the federal government will have to spend tens of billions of dollars over many decades to fulfill its obligations to dispose of waste from the current generation of civilian nuclear reactors. The government will also be responsible for waste from any new facilities built in the future. However, because of statutory constraints on the amount of waste that the repository envisioned under NWPA can store, waste from any such new facilities cannot be accommodated without a change to the law.

NWPA authorized DOE to build a geologic repository to permanently store up to 70,000 metric tons of spent nuclear fuel generated by civilian nuclear power plants and high-level radioactive waste generated by federal facilities. The total amount of commercial and defense-related waste that has already been generated may exceed that capacity.

Financing the Costs of Disposing of Nuclear Waste

The Nuclear Waste Policy Act also addressed how the disposal of spent nuclear fuel and defense-related waste was to be paid for. Under NWPA, the costs are to be borne by the parties that generate it, and the law authorizes DOE to levy fees on the nuclear power industry to cover the costs for the waste it generates. The law also authorizes appropriations from the Treasury's general fund to pay for disposing of high-level radioactive waste generated by the nation's defense programs.

Financing the Costs Associated with Civilian Nuclear Waste

Starting in 1983, NWPA authorized DOE to charge electric utilities fees to cover the costs of disposing of the nuclear waste they generate. Utilities today pay annual fees at a rate of 1 mil (0.1 cent) per kilowatt-hour of electricity generated and sold by nuclear power plants. The fees, which are recorded in the budget as offsetting receipts (a credit against direct spending), are deposited into the Treasury's Nuclear Waste Fund. Amounts in that fund are available for spending only to the extent provided in annual appropriation acts. Under NWPA, DOE is required to periodically review and, if necessary, adjust the level of fees to ensure that the fund has sufficient resources

to pay for disposing of the utility industry's nuclear waste. The department has not increased that annual charge since 1983.

In addition to the ongoing yearly fees, NWPA established one-time fees to cover the costs of disposing of waste that was generated before the law was enacted. DOE provided utilities with several options for paying that one-time charge, but several utilities have not yet paid the fee, and a significant amount remains uncollected.

NWPA authorized appropriations from the Nuclear Waste Fund to cover the costs of the civilian nuclear waste program and also permitted DOE to borrow from the Treasury (subject to approval in advance in appropriation acts) if balances in the fund were insufficient to cover the program's immediate costs. (The law stipulated that amounts borrowed from the Treasury be repaid from future fee collections.) In addition, the law authorized the Secretary of the Treasury to invest the fund's unspent balances in nonmarketable Treasury securities, which are credited with interest.

From 1983 through the end of fiscal year 2008, \$29.1 billion was credited to the fund (see Table 1). That amount includes fees paid by the nuclear industry totaling \$16.3 billion, as well as \$12.8 billion from intragovernmental transfers of interest earnings. Cumulative expenditures from the fund during that period totaled about \$7.1 billion, mostly for analyses related to the waste disposal program and for appropriations to DOE for initial design work on the Yucca Mountain facility. The NRC and other federal entities also received modest appropriations from the fund for work related to the program, leaving an unspent balance of \$22.0 billion at the end of fiscal year 2008. The Congressional Budget Office (CBO) estimates that in 2009, another \$2.0 billion will be credited to the fund—nearly \$800 million from fees and the rest from interest. Expenditures in 2009 will total \$0.2 billion, bringing the fund's end-of-year balance to \$23.8 billion, CBO estimates.

If all of today's 104 licensed nuclear reactors continue to generate electricity, future annual receipts from industry fees are likely to average between \$750 million and \$800 million for at least the next decade. Most U.S. nuclear power plants began operating in the mid-1970s or during the 1980s under 40-year licenses. The NRC has approved 20-year extensions to the licenses of more than half of the plants in operation today, and it anticipates that many of the others will apply for such extensions. When those plants reach the end of their license extensions (or their economically useful lives) and cease operations—probably in the 2030s and 2040s—they will no longer pay fees to the Nuclear Waste Fund to dispose of their waste.

Table 1.**Federal Cash Flows for Nuclear Waste Disposal**

(Billions of dollars)

	Cumulative Totals, 1983 Through 2008	CBO's Estimates, 2009
Nuclear Waste Fund (for civilian nuclear waste)		
Deposits		
Annual fees	14.8	0.8
One-time fees	1.5	0
Subtotal	16.3	0.8
Interest credited ^a	12.8	1.2
Total	29.1	2.0
Disbursements	7.1	0.2
End-of-Year Balance	22.0	23.8
General Fund (for defense-related activities)		
Appropriations	3.6	0.1

Sources: Congressional Budget Office and Department of Energy.

Note: Amounts are in nominal dollars.

a. Components may not add up to totals because of rounding.

Receipts from the one-time fees that remain unpaid and become due once the federal repository is opened currently amount to about \$3.2 billion, DOE estimates.¹ Interest accrues on the balances due from those one-time fees until the utilities pay them to the government; therefore, eventual deposits of such fees will probably be significantly greater than the current balances due. Also accruing and adding significantly to the fund's balances are credits of interest on the fund's unspent dollars. Those amounts are intragovernmental transfers and do not create net receipts to the federal government, but they do add to the resources that are authorized to be used for the waste disposal program.

Financing the Costs Associated with Defense-Related Nuclear Waste

In addition to the amounts appropriated from the fees and interest credited to the Nuclear Waste Fund, the Congress has made annual appropriations to the nuclear waste program to cover the costs that DOE estimates are related to the disposal of nuclear waste generated by federal defense programs. In 2008, DOE determined that about one-fifth of the total costs of the waste disposal program was attributable to that endeavor and that this share of the program's total costs should be paid for with

1. Data supplied to the Congressional Budget Office in July 2009 by the Department of Energy's Office of Civilian Radioactive Waste Management.

appropriations from the general fund of the Treasury.² Since 1993, the Congress has provided about \$3.7 billion from the general fund for such costs.

Estimates of Total Life-Cycle Costs

In 2008, DOE published an estimate of the total costs—including those for transportation and project management—associated with the planned underground nuclear waste disposal facility. In DOE’s estimation, the project would cost about \$96 billion in 2007 dollars over an operating period of more than 100 years.³

DOE also reported on the adequacy of the annual fee charged for nuclear waste disposal.⁴ In its study, DOE evaluated several scenarios in which the costs attributable to civilian nuclear waste ranged from 70 percent to 85 percent of total costs. In nearly all cases, DOE determined that the annual fee, along with accrued interest, was likely to generate sufficient balances to cover the estimated costs. The agency also noted, however, that under certain conditions, a future increase in the fee might become necessary.

Judgments about whether the fee is adequate are highly sensitive to estimates of certain key variables, such as the costs for the envisioned method of disposal and inflation. Such determinations are also sensitive to estimates of the interest credited to the fund—estimates that are a function of interest rates and fund balances, which in turn depend on projections of appropriated spending from the fund. In light of the Administration’s policy to terminate the Yucca Mountain project and pursue an alternative means of waste disposal, there is no current basis to judge the adequacy of the fee to cover future costs because the method of disposal and its life-cycle costs are unknown.

Federal Contractual Obligations and Liabilities for Nuclear Waste

Under contracts signed with electric utilities pursuant to the Nuclear Waste Policy Act, DOE was scheduled to start removing waste from storage sites at individual power plants for transport to a federal storage or disposal facility by 1998. After the federal government missed its 1998 contractual deadline to start collecting waste, electric utilities began—successfully—to sue the government for resulting damages. In seeking to resolve the initial lawsuits, DOE anticipated that it would pay court-awarded damages to individual utilities from amounts appropriated from the Nuclear

2. Department of Energy, Office of Civilian Radioactive Waste Management, *Analysis of the Total System Life Cycle Cost of the Civilian Radioactive Waste Management Program*, DOE/RW-0591 (July 2008).

3. Ibid.

4. Department of Energy, Office of Civilian Radioactive Waste Management, *Fiscal Year 2007 Civilian Radioactive Waste Management Fee Adequacy Assessment Report*, DOE-RW-0593 (July 2008).

Waste Fund or by issuing credits to those utilities (to reduce their future payments to the fund) in the amount of the damages that had been awarded.

In 2002, however, the U.S. Court of Appeals for the Eleventh Circuit held that DOE could not use the Nuclear Waste Fund to pay the damages resulting from the government's partial breach of its contracts.⁵ According to the court, payment of the costs of interim storage incurred by the utilities because of the partial breach was not within the uses of the fund that were permitted under NWPA. Also, the court pointed out, because the department would inevitably raise future fees to compensate for any such payments, the injured utilities would be the ones to ultimately bear the costs of the partial breach of the contracts if they were paid from the fund. In addition, utilities that did not litigate their claims would end up paying larger fees to cover the costs of damage claims made by other utilities. Agreeing with the parties that brought the lawsuit, the court stated that making utilities contribute to a fund that disproportionately paid the storage costs of other utilities would raise a serious constitutional question about whether the action constituted a "taking." Following the court's decision, the government subsequently paid damages to the utilities from the Treasury's Judgment Fund.

The Judgment Fund

The Judgment Fund is a permanent, indefinite appropriation from the Treasury that is available to pay final judgments and awards against the United States that cannot legally be paid from any other existing appropriation.⁶ (The fund has no fiscal year limitations, and there is no need for the Congress to appropriate money to replenish it.) The fund provides the authority for the government to pay for most court judgments and settlement agreements entered into by the Department of Justice to resolve actual or imminent lawsuits against the federal government. Generally, agencies are not required to reimburse the Judgment Fund for payments made on their behalf unless the Congress appropriates money specifically for that purpose.

Judgments Awarded and Paid to Utilities Under the Nuclear Waste Policy Act

Under the Department of Justice's settlements with electric utilities, utilities have been reimbursed for the actual costs they incurred because of DOE's partial breach of its contracts. Such costs are unique to each nuclear power plant and depend partly on the age and operating status of the plant and the size and configuration of the plant's available space for nuclear waste storage.

According to the Department of Justice, as of May 2009 electric utilities had filed 71 lawsuits seeking compensation for costs they incurred because the federal government

5. *Alabama Power Co. v. United States*, 307 F.3d 1300 (2002).

6. In 2008, several thousand individual payments from the Judgment Fund amounted to nearly \$0.8 billion; over the past 10 years, such payments have averaged around \$1.2 billion annually. Most of the payments are made to settle claims related to federal employment, torts, property loss, discrimination, medical malpractice, and contract disputes.

could not begin to accept nuclear waste for disposal in 1998. Of those lawsuits, 10 have been settled, 6 were voluntarily withdrawn, and 4 have been litigated to a final judgment that cannot be appealed. Of the 51 pending cases, 13 have been decided, but some are under appeal. In total, if those decisions stand, the federal government's liabilities under judgments and settlements currently total \$1.3 billion. That amount includes \$565 million that has already been paid to five electric utilities pursuant to settlements (including a payment of \$35 million to the federally owned Tennessee Valley Authority.)⁷ Because judicial claims for damages are made retrospectively, many more cases can be expected in the coming decades as utilities seek to recover their ongoing costs for storing nuclear waste long after they expected it to be removed and sent to a permanent disposal site.

Future Settlements Under the Nuclear Waste Policy Act

Litigation is ongoing regarding how to calculate damages for DOE's partial breach of its contractual commitments. The department currently estimates that if it begins to accept waste in 2020, taxpayers' total liabilities to electric utilities will total \$12.3 billion (in today's dollars).⁸ Further, DOE anticipates that payments from the Judgment Fund will span a number of decades after 2020.

DOE's estimate of future damages is uncertain and is predicated on the department's views of the types of additional business and storage expenses that the courts will determine are appropriate and reasonable and should be paid by the department. Those determinations will depend on such factors as the estimated rate at which DOE would have removed waste from a particular facility if the department had been able to accept waste in 1998. If utilities successfully argue that the waste-acceptance rate used for the purpose of calculating damages should exceed the rate used in DOE's projections of liabilities, costs will probably surpass \$12.3 billion.

Similarly, costs may be greater if the courts take a broader view of the expenses for which utilities should be compensated. Although the federal government is responsible for the permanent disposal of nuclear waste, individual utilities are responsible for storing the waste until it can be delivered to a permanent storage facility. Because the characteristics of utilities' sites vary, the determination of incremental expenses incurred at particular sites must be made on a case-by-case basis and will ultimately depend on the courts' views, which could differ from DOE's.

DOE has previously estimated that liabilities will increase—by roughly \$500 million annually—if the schedule for completing the planned repository slips further and waste continues to accumulate at utilities' storage sites.⁹ And even once the depart-

7. Information supplied to CBO in July 2009 by the Department of Justice.

8. Information provided to CBO in July 2009 by the Department of Energy's Office of Civilian Radioactive Waste Management.

9. Statement of Edward F. Sproat III, Director, Office of Civilian Radioactive Waste Management, Department of Energy, before the Subcommittee on Energy and Water Development of the House Committee on Appropriations (March 28, 2007).

ment begins to accept waste, it will face a backlog that, at best, will take more than 20 years to eliminate. As long as the department remains behind schedule, taxpayers will continue to incur liabilities.

Finally, it is not clear how the Administration's decision to terminate the Yucca Mountain repository will affect the federal government's liabilities to electric utilities. If DOE is found at some point to have fully breached its contractual commitments, the federal government's liabilities could increase considerably.

The Outlook for the Federal Government's Liabilities

Ultimately, a change in law will be required to authorize DOE to permanently dispose of all of the waste anticipated to be generated by existing nuclear facilities at a site other than Yucca Mountain. Otherwise, taxpayers will continue to pay utilities, through settlements and claims awards, to keep storing substantial amounts of waste.

The Nuclear Waste Policy Act sets the storage capacity of the Yucca Mountain site at no more than 70,000 metric tons. DOE estimates that it is responsible for disposing of nearly that many tons of existing spent nuclear fuel and high-level waste. The nation's existing nuclear power plants are producing another 2,000 metric tons of waste per year. In other words, the total volume of waste may already exceed the statutory capacity of the repository envisioned under NWPA.

Moreover, the NRC has received 26 applications for licenses to build new nuclear power plants in the next few years. If constructed, each of those plants would produce around 20 metric tons of waste per year, or about 1,000 metric tons over a 40- to 60-year operating period. Such plants would also pay fees to the Nuclear Waste Fund, and their waste would become a federal liability because, under NWPA, nuclear plants are required to sign waste disposal agreements with DOE. Without additional storage capacity, the cost of storing that waste would probably become an additional liability of the Judgment Fund.

In any case, even if legislation is enacted to authorize DOE to pursue a repository at an alternative site with sufficient capacity to store all anticipated nuclear waste, federal liabilities will remain substantial, and payments from the Judgment Fund to compensate utilities for storing waste will continue for many years.