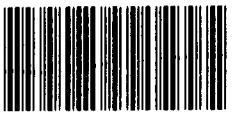
United States General Accounting Office 143828

GAO

Testimony



143828

For Release
on Delivery
Expected at
2:00 p.m. EDT
Wednesday
May 8, 1991

NUCLEAR WASTE
Changes Needed in DOE User-Fee Assessments

Statement of
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Before the
Subcommittee on Energy and Power
Committee on Energy and Commerce
House of Representatives

Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to discuss the Department of Energy's (DOE) procedures for annually assessing the adequacy of the fee that utilities pay for disposal of spent (used) nuclear fuel. In a June 1990 report, we recommended, among other things, that the Congress authorize DOE to automatically adjust the fee each year on the basis of an inflation index.[1] At that time, DOE also favored fee indexing; however, it subsequently reversed its position. Because of this change, we now believe the Congress should require DOE to index the fee to the rate of inflation.

To explain the basis for our position, in my testimony today I will discuss the following points:

-- Unless careful attention is given to the financial condition of the civilian nuclear waste program, the program is susceptible to future budget shortfalls. One 1989 internal DOE analysis, for example, concluded that the program was already underfunded by over $2 billion.

-- Inflation has been, and will likely continue to be, a major contributing factor to program cost increases. Indexing the disposal fee to the inflation rate would help ensure that fees are adequate to cover costs over the program's long life.

-- Inflation indexing would permit DOE to concentrate its fee assessments on estimated program costs that are unrelated to inflation and the effects of cost and revenue uncertainties. Examples of these uncertainties include the number of repositories required, the ability of some

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[1]Nuclear Waste: Changes Needed in DOE User-Fee Assessments to Avoid Funding Shortfall (GAO/RCED-90-65, June 7, 1990).

utilities to pay certain one-time fees, and payment by DOE of the cost of disposing of its own high-level nuclear waste.

Also, as requested, I will briefly highlight my April 18, 1991, testimony before the Subcommittee on Nuclear Regulation, Senate Committee on Environment and Public Works, on DOE's expenditures of funds on the Yucca Mountain, Nevada repository project.[2] Before I discuss these matters, however, I would like to provide some background on DOE's fee assessment process.

BACKGROUND

The Nuclear Waste Policy Act of 1982, as amended, requires DOE to investigate Yucca Mountain to determine its suitability for a nuclear waste repository. If the site is found suitable and is licensed by the Nuclear Regulatory Commission (NRC), DOE will construct a repository for disposing of up to 70,000 metric tons of waste. If the site is found unsuitable, DOE must report this finding to the Congress and recommend a further course of action. Also, DOE must report to the Congress in about 20 years on the need for a second repository.

According to DOE's most recent estimate, the program is expected to last almost 100 years and cost between about $26 billion and $34 billion (in constant 1988 dollars). Differences in cost estimates depend on factors such as whether one or two repositories are developed. Program expenditures are financed through annual appropriations from a special Treasury account called the Nuclear Waste Fund. Utilities must pay annually into the Fund fees amounting to one-tenth of a cent per kilowatt-hour of the electricity generated by their nuclear plants. The Nuclear Waste

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[2]Nuclear Waste: DOE Expenditures on the Yucca Mountain Project (GAO/T-RCED-91-37).

Act also required utilities to make a one-time payment into the Fund to cover the cost of disposing of the spent fuel they generated at their plants before April 7, 1983. As permitted by DOE, some utilities elected to defer this payment and pay interest on the deferred balance. When utilities have paid their annual and/or one-time fees, they are relieved of further financial obligation for disposal of their nuclear wastes. Fees collected become government funds, and in return for the fees, DOE is obligated to dispose of the wastes. DOE is also required to pay into the Fund the cost of disposing of its own high-level wastes.

The Nuclear Waste Act requires DOE to annually determine if the waste disposal fee is adequate to cover all applicable program costs and, if necessary, to propose an increase or decrease in the fee to the Congress. A proposed new fee becomes effective after 90 days unless either House of Congress disapproves it.[3] In assessing fee adequacy, DOE estimates, for each year through the end of the program, total program costs and fee collections, interest earned on investments of funds in excess of current needs, and end-of-year Fund balances. DOE does this using a variety of assumptions, such as the number and location of repositories, projected amounts of nuclear-generated electricity, and estimates of fee collections and waste volume. Through its last assessment in November 1990, DOE had not proposed a change in the fee.

WASTE PROGRAM IS SUSCEPTIBLE TO FUTURE BUDGET SHORTFALLS

In our report, we said that unless careful attention is given to the financial condition of the civilian nuclear waste program, the program is susceptible to future budget shortfalls. Specifically, we pointed out that the fees paid by utilities must provide

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[3]The Supreme Court found unconstitutional the legislative veto provision of other legislation. See Immigration and Naturalization Service v. Chadha, 462 U.S. 919 (1983).

sufficient revenues to cover total program costs. However, DOE cannot adjust the fee retroactively. If costs eventually exceeded revenues, the shortfall would have to be financed by either (1) charging utilities still operating nuclear plants higher disposal fees, (2) federal appropriations, or (3) a combination of the two. A 1989 study by DOE's Independent Cost Estimating Staff illustrates this point. The study showed that, assuming 4 percent inflation, no fee increase over the program's life, and a single repository, the civilian nuclear waste program was already underfunded by $2.4 billion (in discounted 1988 dollars).

DOE expects to begin operating a repository at Yucca Mountain in 2010. By then, many nuclear plants will be approaching the end of the 40-year operating period permitted by NRC. Unless plant lives are extended and/or new plants built, the number of nuclear plants --and the disposal fees utilities pay into the Fund--will begin to decline. Utilities operating the remaining plants would have to pay higher fees if, at the time, DOE found that estimated program costs exceeded projected revenues. If adequate funding is not provided from disposal fees, the Congress might have to authorize the use of general tax revenues to fund a portion of the program's cost.

Also, utilities operating nuclear plants during the first 50 years or so of the program's life must pay fees that will produce sufficient revenues to cover expenditures over the nearly 100-year life of the program. In one DOE program scenario we discussed in our report, for example, expenditures would be made through 2087, but DOE would collect fees only until the last of the current generation of nuclear plants is retired in 2037.[4]

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[4]For this case, DOE assumed that no new nuclear plants will be built beyond those currently operating and under construction. Thus, when the last of these plants has been retired, no additional waste fees would be collected.

For this reason, large Fund balances in the early years of the program should not influence decisions about fee adequacy. Surpluses, such as the $3 billion in the Fund at the end of April 1991, are to be expected early in the program, when expenditures are relatively small, as contrasted with later years, during construction and operation of one or two repositories.

INDEXING FEE TO INFLATION CAN HELP MAINTAIN FEE ADEQUACY

The proper treatment of inflation is critical to arriving at sound conclusions about fee adequacy. As we pointed out in our report, for example, the estimated cost of the program, for a two-repository system, increased from under $20 billion in 1983 (in 1982 dollars) to about $32 billion in 1989 (in 1988 dollars). This was an increase of about $12 billion in 6 years. About $4.5 billion of the cost increase was due to inflation and the other $7.5 billion was due to increases in the estimated real cost of the program. The inflation-related cost increase is about 23 percent of the 1983 program cost estimate.

Furthermore, the total amount of program cost increases resulting from the same rate of inflation over the next 6 years would be even higher, because the rate would be applied to the larger estimated real cost of the program. However, the disposal fee is not currently adjusted to account for inflation.

In view of the program's length and uncertainty about both real and inflation-related costs, indexing the fee to the rate of inflation is a way of protecting the Fund from the effects of inflation. More importantly, indexing would equitably distribute program costs among present and future payers of fees as the purchasing power of the dollar changes over time. For these reasons, we recommended in our report that the Congress amend the Nuclear Waste Act to authorize the Secretary to automatically adjust the disposal fee on

the basis of the annual rate of inflation. We also recommended that, in conjunction with such an indexing system, DOE use a realistic, base-case inflation rate to determine when the system should be implemented.

In commenting on a draft of our report, DOE agreed with our legislative recommendation and acknowledged that automatic indexing would provide more equality in the treatment of current and future ratepayers. DOE said, however, that it preferred to use a range of inflation rates rather than a base case in assessing fee adequacy, including when to begin an inflation-indexing system.

In a November 1990 letter to congressional committees discussing its actions on our recommendations, DOE reversed its position on both of our recommendations. DOE said that it now prefers to use a "step-adjustment" method for making any necessary fee adjustments. This method would provide for changes to the fee based on programmatic as well as economic factors, and would require that DOE fully justify each fee change proposal. In addition, DOE stated that, although it no longer favors an inflation indexing system, its 1990 fee adequacy report used a base-case inflation rate of 4 percent to assess the adequacy of the fee. On this basis, DOE's analysis showed that, if only one repository is needed, no increase in the fee is necessary at this time.

DOE's current position stems from concerns raised by industry representatives. According to DOE officials, in 1990 a DOE task force studying the fee assessment process learned of the utility industry's objection to automatically adjusting the fee on the basis of an inflation index in meetings it had with representatives of utility associations. Although the task force did not prepare a written report, DOE officials told us that industry representatives prefer that any DOE proposal to adjust the fee be justified by supporting analysis.

DOE's use of a realistic base-case inflation rate in its most recent fee adequacy assessment is a positive step. Its preferred step-adjustment method, however, does not take into account equity in payments by ratepayers over the life of the program. By indexing the fee to the rate of inflation, the amount of the fee would rise as the overall price level increases but the fraction of real program costs that ratepayers pay over time would remain constant. Furthermore, if, upon indexing the fee, the program has a net positive balance, the base fee could be appropriately lowered. Subsequently, the base fee would be changed only on the basis of changes in the estimated real cost of the program.

Finally, DOE said that the reason why the $2.4 billion deficit projected by the Independent Cost Estimating Staff study differs from the results of DOE's November 1990 assessment is that the staff study was based on revenue estimates and assumptions that are no longer valid. We have not reconciled the differences because DOE's detailed supporting documentation for its assessment has not been issued. We plan to review this documentation when available to determine how the revenue estimates and assumptions have changed.

INDEXING WOULD ENABLE DOE TO FOCUS ON REAL COSTS AND UNCERTAINTIES

In addition to inflation, there are several other uncertainties related to program costs and revenues that could, in the long term, affect the financial health of the nuclear waste program. As I mentioned earlier, for example, estimates of the real cost of the program increased by about $7.5 billion over the first 6 years of the program. Also, it is unclear whether DOE will eventually develop one or two repositories. Finally, some affected utilities may not be able to pay into the Fund the one-time fees that they owe, and DOE only recently made a small, initial payment into the Fund to begin paying its fair share of program costs.

One of the major uncertainties affecting real cost is how much waste Yucca Mountain, if found suitable for a repository, can hold. We addressed this issue in a September 1988 report.[5] We said that DOE was confident, on the basis of studies it had conducted, that the site will hold the 70,000 metric tons of waste allowed by the Nuclear Waste Act. We concluded, however, that there was uncertainty about whether the specific area DOE plans to investigate will hold more than 70,000 metric tons of waste.

DOE currently expects that the civilian nuclear power plants now operating and under construction will produce about 87,000 metric tons of spent fuel over the 40-year operating life that NRC now permits for these plants. Also, DOE estimates that it will produce the equivalent of about 9,000 metric tons of high-level waste at its nuclear facilities, for a total of about 96,000 metric tons of waste. Thus, even if the Congress were to remove the statutory cap, there is a potential that more that one repository will eventually be needed to accommodate all of the waste.

We also said that in reporting to the Congress on the potential need for a second repository, DOE expects to discuss the possibility of expanding Yucca Mountain as an alternative to building a second repository. This could require additional characterization work to establish the suitability of the expansion area, another licensing proceeding to obtain NRC's approval for the expansion, and construction of the additional repository capacity. Thus, we concluded that there may be advantages to earlier and more complete site characterization information on the potential for expanding capacity at Yucca Mountain. We suggested that the Congress explore with DOE these potential advantages in view of continuing declines in waste estimates since the program began and

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[5]Nuclear Waste: Fourth Annual Report on DOE's Nuclear Waste Program (GAO/RCED-88-131, Sept. 28, 1988).

the uncertainties about the capacity of the primary disposal area at the site.

DOE's latest fee adequacy analysis illustrates the importance of this issue. The analysis shows that a fee increase would not be necessary to recover all program costs with one repository; however, if two repositories are needed, then the current fee, left unchanged, would result in an end-of-program deficit in the Nuclear Waste Fund of $23 billion (in 1988 dollars).

Uncertainty also exists about whether DOE will be able to collect moneys owed by some utilities. Although DOE, in determining fee adequacy, assumes that it will collect all moneys the utilities owe, a March 1990 report by DOE's Inspector General indicates that this may not be a valid assumption.[6] In the report, the Inspector General said that, because of the uncertain financial condition of 11 of 17 utilities that chose to defer one-time payments, $2 billion of the $3 billion in fees and interest payments due is at risk.

Finally, DOE has not been paying its share of program costs. In its most recent program cost estimate, DOE stated that its share of estimated total program costs is almost $4 billion, or 15 percent, of the $26 billion program cost with one repository, and about $6 billion, or 17 percent, of the $34 billion program cost with two repositories. As of September 1990, DOE estimated that it already owed about $573 million, including interest. Although DOE has not recognized this liability in its financial records and reports, it recently made an initial payment of $5 million into the Fund.

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[6]Followup Review of Fees Paid by the Civilian Power Industry to the Nuclear Waste Fund (DOE/IG-0280, Mar. 26, 1990).

DOE EXPENDITURES ON THE
YUCCA MOUNTAIN PROJECT

I would now like to briefly discuss my recent testimony on DOE's use of funds for investigating Yucca Mountain. We were asked to review how moneys appropriated in fiscal years 1988-90 for investigating the site were actually used. In summary, we found that, although DOE had planned to begin investigating the site--including constructing an exploratory shaft facility--in that period, the investigations still have not begun. Nevertheless, DOE spent almost $500 million on the Yucca Mountain project in those 3 fiscal years. Specifically, we found the following:

-- During the 3-year period, DOE prepared the site investigation plan, worked to get its quality assurance program approved by NRC, and revised its approach to designing and constructing the exploratory shaft facility. Although DOE is now ready to begin limited new work at the site, it cannot do so until it receives certain environmental permits from the state of Nevada.

-- In the years prior to 1987, DOE spent about $48 million on drilling boreholes and obtaining core samples. Because of technical and management problems with this work, however, there are serious questions about the usefulness of the core samples for repository-licensing purposes. As a result, DOE spent another $12 million in 1989 and 1990 to develop a new drilling technology and a facility for managing core samples to be obtained during the investigation of the site.

-- Although DOE spent over $36 million on the design of the exploratory shaft facility in 1988 and 1989, external criticism of the planned design and construction method resulted in DOE's selecting a new design and construction

method. It is uncertain at this time how much of the original design work will have to be redone, or what additional costs will be incurred.

-- DOE and its contractors spent about $122 million--or 25 percent of total project costs--on general management of the Yucca Mountain project during fiscal years 1988-90. When the costs of lower level management activities are added, over 40 percent of all project costs are related to management of the project.

On the basis of our limited review, it appears that more detailed planning coupled with independent technical review could have avoided the need to repeat significant pieces of work, causing additional expense and delay to the project.

Mr. Chairman, that concludes my testimony. I would be pleased to respond to any questions that you or other members of the Subcommittee may have.