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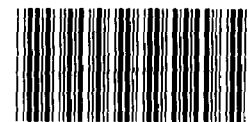
BY THE U.S. GENERAL ACCOUNTING OFFICE

**Report To The Committee On Energy
And Natural Resources
United States Senate**

**Status Of The Department Of Energy's
Implementation Of The Nuclear Waste
Policy Act Of 1982 As Of June 30, 1985**

In March 1984, the Senate Committee on Energy and Natural Resources requested that GAO report quarterly on the status of the Department of Energy's progress in implementing the Nuclear Waste Policy Act of 1982. This report covers program activities from April through June 1985 and focuses on delays in meeting key requirements of the act and the status of management initiatives taken by the Office of Civilian Radioactive Waste Management, the office responsible for implementing the act.

The report also discusses the status of the Nuclear Waste Fund, the separate fund that receives fees from the owners of operating nuclear power plants and other waste-producing facilities and finances the development and construction of the nation's first geologic repository for commercial nuclear waste. During the quarter, the fund had revenues in excess of financial obligations and invested the excess funds.



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**GAO/RCED-85-156
JULY 31, 1985**

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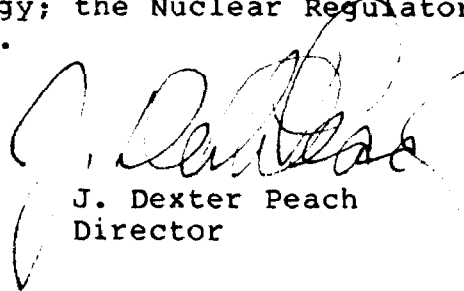
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The Honorable James A. McClure
Chairman, Committee on Energy
and Natural Resources
United States Senate

The Honorable J. Bennett Johnston
Ranking Minority Member
Committee on Energy and Natural Resources
United States Senate

In response to your request, this report provides the status of the Department of Energy's implementation of the Nuclear Waste Policy Act of 1982 for the quarter ending June 30, 1985. It discusses the Department's progress in meeting legislated deadlines, summarizes the status of the Nuclear Waste Fund, and discusses management initiatives and federal relations with states and Indian tribes.

We are sending copies of the report to the Chairmen of the Senate Committee on Governmental Affairs, the House Committee on Government Operations, and the House Committee on Energy and Power; the Secretary of Energy; the Nuclear Regulatory Commission; and other interested parties.



J. Dexter Peach
Director



EXECUTIVE SUMMARY

the act's requirements that occurred during the quarter include the following:

- DOE identified three potential sites for a monitored retrievable storage facility for the packaging and temporary storage of nuclear waste. (See p. 7.)
- The President decided to dispose of defense and commercial waste in the same permanent repositories. (See p. 8.)
- DOE continued to analyze comments on its environmental assessments of candidate sites for the first repository. DOE expects to complete the assessments in late 1985. (See p. 9.)
- DOE finalized its overall strategy document and completed several other program documents. (See p. 10.)

In addition to these legislative requirements, other activities occurred during the quarter. For example, seven new lawsuits were filed--6 by states and 1 by private citizens' organizations--concerning the nuclear waste program (see p. 13), a DOE-contracted audit firm submitted recommendations to improve the management of the Nuclear Waste Fund (see p. 17), and DOE invested moneys from the fund that are in excess of current program needs (see p. 24).

GAO ANALYSIS**Program
Activities**

In April 1985 DOE concluded that a monitored retrievable storage facility should be an integral part of the waste management system and proposed three locations in Tennessee as potential sites for such a facility. The final proposal is scheduled to be submitted to the Congress for its approval in January 1986, seven months after the act's deadline. On June 1, 1985, DOE provided a summary report on the facility to the Congress.

Earlier this year, DOE submitted a report to the President recommending that defense high-level waste be stored with commercial waste in the same repository because of estimated cost savings of \$1.5 billion. In April 1985, the President approved DOE's recommendation.

EXECUTIVE SUMMARY

DOE continued to receive and analyze comments on the draft environmental assessments that comparatively evaluate and determine the suitability of candidate sites as host for the repository. By the end of the quarter, DOE had received over 21,000 comments from over 2,600 commentators. DOE officials expect to complete the assessments in late 1985.

DOE's mission plan, which is to provide a basis for making informed decisions on the waste program, was completed in June and issued in mid-July, about 1 year behind schedule.

Other program documents that were completed during the quarter included a report on program management alternatives (see p. 11) and an annual report to the Congress on the waste management program (see p. 13).

Seven additional lawsuits requested a court review of DOE's siting guidelines. DOE expects they will be considered together with similar suits filed previously. A previous lawsuit requesting a court review of DOE's screening of potential repository sites in Texas was dismissed by the court.

Management Initiatives

DOE's mission plan outlines a program strategy for institutional relations with affected states and Indian tribes. DOE also initiated several programs to improve communications with these parties, conducted meetings with states and tribes, and expanded its outreach program for informing the public about the waste program (see ch. 3).

The DOE-initiated certified public accountant audit report on the program both found that DOE complied with applicable laws and regulations and made recommendations to improve DOE's accounting procedures.

Funding

The Nuclear Waste Fund balance as of June 30, 1985, was about \$1.7 billion. It had received about \$1.5 billion in fees from the owners and generators of nuclear waste. DOE invested about \$1.4 billion in various Treasury bills and notes, which will mature at different times, to use for specific program purposes. The appropriated debt owed to the Department of the Treasury is about

EXECUTIVE SUMMARY

\$258 million. DOE officials said that the repayment of this debt will take place during the next quarter. (See ch. 4.)

RECOMMENDATIONS GAO is making no recommendations.

AGENCY COMMENTS The views of directly responsible officials were sought during the course of GAO's work and are incorporated in the report where appropriate. GAO did not request DOE to review and comment officially on a draft of this report.

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ABBREVIATIONS

DOE	Department of Energy
FEDCORP	Federal Corporation of Waste Management
GAO	General Accounting Office
MRS	monitored retrievable storage
NRC	Nuclear Regulatory Commission
NWPA	Nuclear Waste Policy Act of 1982
OCRWM	Office of Civilian Radioactive Waste Management
OPIO	Office of Policy, Integration and Outreach
R&D	research and development

CHAPTER 1

INTRODUCTION

Enacted on January 7, 1983, the Nuclear Waste Policy Act of 1982 (NWPAA) (Public Law 97-425) established a comprehensive national program to construct geologic repositories for the long-term disposal of high-level radioactive nuclear waste. The Department of Energy (DOE) intends to begin accepting title to the nuclear waste for disposal in January 1998 under provisions of contracts entered into with nuclear utilities. The act also established within DOE the Office of Civilian Radioactive Waste Management (OCRWM) to carry out the provisions of NWPAA and established the Nuclear Waste Fund to finance the program.

The act requires us to report to the Congress on the results of an annual audit of OCRWM. Our first annual audit report,¹ issued on January 10, 1985, focused on the problems DOE had in initiating the program and establishing its financial basis. Our second annual audit is underway and focuses on problems OCRWM has had in meeting the act's requirements.

On March 26, 1984, the Senate Committee on Energy and Natural Resources requested that we also report, on a quarterly basis, the status of OCRWM activities to implement the act. Our previous quarterly reports² discussed actions that took place during the period July 1, 1984, through March 31, 1985. They discussed the status of OCRWM program activities directed toward meeting the act's legislatively mandated milestones, especially those that were past due or immediately upcoming, the status of selected management actions, and the status of the Nuclear Waste Fund, including a description of its investment activities. This report covers the status of program and fund activities during the quarter ending June 30, 1985.

¹Department of Energy's Initial Efforts To Implement the Nuclear Waste Policy Act of 1982 (GAO/RCED-85-27, Jan. 10, 1985).

²Status of the Department of Energy's Implementation of the Nuclear Waste Policy Act of 1982 as of September 30, 1984 (GAO/RCED-85-42, Oct. 19, 1984).

Status of the Department of Energy's Implementation of the Nuclear Waste Policy Act of 1982 as of December 31, 1984 (GAO/RCED-85-65, Jan. 31, 1985).

Status of the Department of Energy's Implementation of the Nuclear Waste Policy Act of 1982 as of March 31, 1985 (GAO/RCED-85-116, Apr. 30, 1985).

This chapter provides an overview of OCRWM's activities and discusses the report's objectives, scope, and methodology. Chapter 2 discusses OCRWM's activities and focuses on those activities directed toward meeting legislatively mandated milestones that are current, past due, or upcoming in the next several months. It also discusses the status of litigation filed as a result of OCRWM activities. Chapter 3 discusses the status of selected management actions, including OCRWM's relations with states and Indian tribes. Chapter 4 describes the status of the Nuclear Waste Fund as of June 30, 1985, and includes a description of Nuclear Waste Fund investment activity conducted by DOE.

OVERVIEW

The safe disposal of spent nuclear fuel³ and other highly radioactive nuclear waste⁴ in the United States has been a matter of national concern since the first civilian nuclear reactor began generating electricity in 1957. These materials, which remain potentially hazardous for tens of thousands of years, must be isolated from the environment until their radioactivity decays to levels that will pose no significant threat to people or the environment. Electric utilities have accumulated over 10,000 metric tons (over 22 million pounds) of highly radioactive nuclear waste. Most of it is in the form of spent-fuel rods that are stored in pools of water at the reactor sites. DOE estimates that by the year 2000, approximately 50,000 metric tons (110 million pounds) of highly radioactive spent fuel will have accumulated.

NWPA requires DOE to develop deep geologic repositories to accommodate the long-term safe disposal of nuclear waste and to conduct related research, development, and demonstration projects. The act also established OCRWM within DOE to administer the waste disposal program. Costs are to be paid from the Nuclear Waste Fund, which receives fees from owners of operating nuclear power plants and owners of high-level nuclear waste generated in the past. The full cost of the program was estimated in January

³Spent nuclear fuel is the used uranium fuel that has been removed from a nuclear reactor. Spent fuel and other types of highly radioactive wastes are difficult to dispose of because of their high toxicity and long radioactive life and because they produce heat.

⁴The act also requires DOE to use one or more of the repositories developed under the act to dispose of high-level radioactive waste resulting from the production of nuclear weapons material, unless the President finds that a separate repository is required for the disposal of such waste. (See p. 8.)

1985 to be between \$20.6 billion and \$35.1 billion (in 1984 dollars), depending upon the geologic media⁵ selected for the two repositories and possible delays in the repository program. This estimate includes the cost of developing, constructing, operating, and closing two geologic repositories.

The act authorized DOE to enter into contracts with all generators and owners of highly radioactive materials. As of June 30, 1985, DOE had contracts with 64 commercial owners and generators covering 147 reactors. The contracts establish (1) the terms and conditions under which DOE will dispose of spent fuel generated by civilian power reactors and (2) the procedures to follow in collecting fees to provide for full recovery of the government's disposal costs.

The contracts require the payment of a 1-mill-per-kilowatt-hour fee for electricity generated by nuclear power beginning April 7, 1983. The 1-mill fee covers the generation of spent fuel during the ongoing production of electricity from nuclear plants and is to be paid every 3 months. During the quarter, DOE collected \$99.7 million in these quarterly fees.

The contracts also require the payment of a one-time fee for spent fuel generated before April 7, 1983. The owners had to select one of three options for paying the one-time fee, currently estimated to total \$2.3 billion, and inform DOE by June 30, 1985, which method each would use. These options included full payment before June 30, 1985, with no interest charges; full payment with interest before delivery of the spent fuel to DOE; or quarterly payments plus interest spread over 10 years. By June 30, 1985, DOE had collected \$1.4 billion of the estimated \$2.3 billion in one-time fees. Chapter 4 and appendix III detail the one-time fee payment options selected and amounts paid or owed by the owners of spent fuel.

OCRWM, located at DOE headquarters in Washington, D.C., is supported by DOE's field operations offices. OCRWM project offices in Columbus, Ohio; Las Vegas, Nevada; and Richland, Washington, are responsible for conducting repository development activities in the three main geological media under consideration for selection as the first repository site. The Richland office

⁵Geologic media are the underground rock formations in which the radioactive waste will be placed. The formations now being considered as host rocks for the repositories are basalt lava, a molten material from volcanoes or fissures; tuff, a hard, compacted ash from volcanoes; rock salt, a sedimentary rock formed by the evaporation of water from a saline solution; and crystalline rock, a general term used for igneous and metamorphic rocks, which include granite.

is primarily working with basalt, while the Columbus and Las Vegas offices are examining salt and tuff sites, respectively. The Chicago project office manages the crystalline rock program for the second repository. A separate project office in Richland, along with a new monitored retrievable storage (MRS) project site office in Oak Ridge, Tennessee, established in April 1985, manages the MRS program. These offices, in turn, rely heavily on contractors and national laboratories to conduct specific activities.

In February 1983, DOE formally identified nine areas in six states⁶ as potential sites for the first repository. After an analysis of available data and completion of a number of requirements, the act calls for the Secretary of Energy to formally nominate five sites as suitable for further study and to recommend three sites to the President by January 1985 for site characterization studies. These studies are to include the construction of exploratory shafts for geologic tests at repository depth. One of the characterized sites will likely be the location of the first repository.

As discussed in more detail in chapter 2, OCRWM has not yet completed all the necessary requirements prior to recommending three sites to the President. Although final siting guidelines, due by July 7, 1983, establishing performance objectives for a geologic repository, were issued in December 1984, environmental assessments that will accompany the three sites to be recommended for site characterization studies have not been finalized. Draft environmental assessments, which evaluate each site using the formal siting guidelines and provide the basis for determining whether a site is suitable for site characterization activities, were issued on December 20, 1984. OCRWM officials stated at the end of the quarter that they intend to issue the final assessments by late 1985.

After completion of the site characterization studies, the President is required by NWPA to recommend to the Congress one site for repository construction. NWPA requires the President to make his recommendation by March 31, 1987; however, DOE currently does not expect to complete site characterization studies until 1990 and does not expect the President to make his recommendation until 1991.

The act also requires the Secretary of Energy to recommend to the President, by July 1, 1989, at least three potential sites for a second repository. However, DOE does not expect to make its recommendation of three sites to the President for the second repository until after the President recommends the site for the first repository to the Congress. The President is required to

⁶The states containing potential sites for the first repository are Louisiana, Mississippi, Nevada, Texas, Utah, and Washington.

make a final site recommendation for the second repository to the Congress by March 31, 1990. DOE currently expects that the President will not make his recommendation until 1997. As described in chapter 2, OCRWM is conducting a site-screening process for the second repository.

The act requires that DOE submit to the Congress, by June 1985, a determination whether the waste program should include an MRS facility and a proposal for the construction of this facility. DOE has concluded that an MRS facility should be an integral part of the waste management system; however, DOE does not expect to submit the final determination and proposal to the Congress until January 1986.

OBJECTIVES, SCOPE, AND METHODOLOGY

On March 26, 1984, the Senate Committee on Energy and Natural Resources requested that we report on a quarterly basis the status of OCRWM's activities to implement NWPA. This quarterly report discusses OCRWM activities during the quarter ending June 30, 1985. It (1) highlights OCRWM's activities directed toward meeting NWPA's legislatively mandated milestones, including those that are already past due or are forthcoming in the next several months, (2) discusses ongoing litigation, (3) describes selected OCRWM management activities, including federal relations with states, Indian tribes, and local communities, and (4) provides the status of the Nuclear Waste Fund, including its investment activity.

To obtain information on the status of OCRWM program activities and selected management initiatives, we reviewed DOE and OCRWM program documents, publications, correspondence, and studies and interviewed OCRWM managers and operating personnel responsible for planning and managing activities associated with the research and development of the waste repositories.

Program documents we reviewed included the draft mission plan, a draft transportation business plan for the inclusion of the private business sector in packaging and transporting high-level wastes, the supplement to the February 1985 fee adequacy report, and the screening methodology document for selecting sites for the second repository. We also reviewed the draft environmental assessments, selected comments from states on the assessments, and OCRWM's management plan for preparing the final assessments. In addition, we reviewed documents relating to DOE's proposed MRS facility. We also attended an OCRWM-sponsored meeting in Kansas City, Missouri, in May 1985 where OCRWM provided general information on the waste disposal program.

To obtain information on Nuclear Waste Fund receipts and disbursements and the fund's investment activity, we contacted DOE officials responsible for DOE's financial activities. We also obtained financial, contract, and personnel data directly from the

DOE financial information system and from DOE's Energy Information Administration. We also reviewed the final audit report of the Nuclear Waste Fund for fiscal years 1983 and 1984, prepared by a certified public accounting firm. We did not verify data obtained from DOE's financial information system--a task that could not be accomplished within the time frame of this report.

The views of directly responsible officials were sought during the course of our work and are incorporated in the report where appropriate. At the Committee's request, we did not request DOE to review and comment officially on a draft of this report.

CHAPTER 2

STATUS OF OCRWM ACTIVITIES DIRECTED TOWARD LEGISLATED REQUIREMENTS DURING THE APRIL - JUNE 1985 QUARTER

This chapter discusses activities during the quarter ending June 30, 1985, directed toward meeting requirements of NWPA. It focuses on those requirements with deadlines that are currently due, have already passed, or are upcoming in calendar year 1985. In particular, the chapter discusses

- OCRWM's decision to propose to the Congress an MRS facility as an integral part of the waste management system;
- the President's decision to commingle defense waste and commercial waste in a single repository;
- the status of OCRWM's efforts to complete environmental assessments that must be done before DOE can recommend three sites to the President for more detailed site characterization studies; and
- completion of the mission plan that is intended to present overall program strategy and respond to specific informational requirements of the act.

Although progress has been made in each of these areas, legislated deadlines have been missed for each. For example, OCRWM was to submit to the Congress a detailed need and feasibility study and construction proposal for an MRS facility by June 1, 1985. OCRWM issued a preliminary feasibility study and identified three potential MRS sites in Tennessee in April 1985; however, the final proposal is not expected to be submitted to the Congress until January 1986.

The following sections discuss the status of these four areas and highlight other OCRWM activities during the quarter directed toward legislative requirements of the act. Also included in this chapter is a status report on litigation resulting from OCRWM activities.

OCRWM PROPOSES THREE SITES FOR A MONITORED RETRIEVABLE STORAGE FACILITY

NWPA requires OCRWM to submit to the Congress for its approval by June 1, 1985, (1) a detailed study of the need for and feasibility of one or more MRS facilities and (2) a proposal for the construction of one or more of these facilities. These facilities are generally thought of as ground-level or slightly below ground-level storage facilities. NWPA specifies that the proposal include a program for siting, developing, constructing, and operating an MRS facility; site-specific designs and cost estimates for

constructing the first facility; a plan for funding the construction and operation of such facilities; and a plan for integrating such facilities into the federal waste management system.

In April 1985 OCRWM issued a report entitled "The Need for and Feasibility of Monitored Retrievable Storage--A Preliminary Analysis" that concludes that DOE's preferred option is an integral MRS facility that would (1) be centrally located to existing spent-fuel inventories, (2) permit spent-fuel consolidation and packaging at the facility, and (3) provide a buffer between waste acceptance and waste disposal.

Also in April 1985 OCRWM issued a report entitled "Screening and Identification of Sites for a Proposed Monitored Retrievable Storage Facility" that proposes three sites in Tennessee for an MRS facility. OCRWM identified the Clinch River Breeder Reactor site as the preferred site, with DOE's Oak Ridge Reservation and the Tennessee Valley Authority's Hartsville Nuclear Plant as alternative sites. The final MRS proposal is scheduled to be submitted to the Congress in January 1986.

On June 1, 1985, DOE issued a status report to the Congress on the MRS program. It stated that DOE would submit the MRS proposal to the Congress by January 15, 1986, with site-specific designs completed in September 1985. DOE estimates that, after congressional approval, it will take approximately 10 years to have an operational MRS facility. The primary hurdles will be the preparation of a definitive design, the preparation of an environmental impact statement, completion of Nuclear Regulatory Commission (NRC) licensing requirements, and facility construction.

Tennessee has appointed its State Council on Safe Growth to lead the state's review of the MRS plan. DOE plans to facilitate independent state review through a \$1.4 million grant to Tennessee from the Nuclear Waste Fund and extensive transfer of programmatic and technical information so that the state can form independent judgments on DOE's proposal. DOE also plans to work with Tennessee on developing the scope and schedule of the final MRS program. DOE will negotiate a formal consultation and cooperation agreement with Tennessee if the Congress authorizes construction of the MRS.

DEFENSE AND COMMERCIAL WASTE TO BE DISPOSED OF IN THE SAME REPOSITORY

On April 30, 1985, the President advised the Secretary of Energy that, under NWPA, he should dispose of defense high-level waste and commercial waste in a single repository because of the cost savings. In February 1985 DOE submitted a report to the President recommending that defense high-level waste and commercial waste be commingled because building a separate repository for defense waste would cost an additional \$1.5 billion. The report estimated that defense high-level waste could be expected to require about 10 percent of the repository underground area.

At the end of the quarter, DOE's Defense Programs officials and OCRWM officials said that they were negotiating an internal fee recommendation agreement on defense wastes that will establish its obligation for funding its share of the nuclear waste disposal program's total costs. The agreement will establish the 1-mill-per-kilowatt-hour fee to be paid by DOE every three months beginning in fiscal year 1987. It will also establish procedures for determining DOE's one-time fee for waste generated prior to fiscal year 1987. DOE intends its financial obligation to be comparable to the obligation of commercial generators of high-level waste.

DOE officials indicated that the fee recommendation agreement will be submitted to the Secretary of Energy for concurrence by September 1985. After the Secretary concurs, OCRWM officials said that they intend to publish the draft agreement in the Federal Register for comment. They expect to receive comments from the fee-paying utilities concerning DOE's share of waste program costs at that time. The officials also said that the utilities' comments will be incorporated into the final cost allocation agreement where appropriate. DOE will begin paying fees into the Nuclear Waste Fund by fiscal year 1987.¹

FINAL ENVIRONMENTAL ASSESSMENTS TAKING LONGER THAN EXPECTED

Section 112 of NWPA requires OCRWM to prepare environmental assessments for potential repository sites and specifies that these assessments must include the probable impacts of site characterization studies, such as drilling the exploratory shafts necessary to collect geologic data and ways to avoid such impacts. Nine draft assessments--one for each potential first repository site located in six states--were issued on December 20, 1984. The assessments compared each site with the others and ranked them according to criteria defined in the siting guidelines that were issued in December 1984.

During a 90-day comment period that ended March 20, 1985, all interested parties could submit written comments to DOE on the draft assessments. As of the end of the quarter, DOE had received over 21,000 comments on the draft assessments from more than 2,600 commentators, including states, Indian tribes, other federal agencies, and interested parties. All of the six states containing a potential site submitted comments.

¹In our first annual report (GAO/RCED-85-27), we recommended that DOE should decide the appropriate fee to charge the federal government for the disposal of high-level waste. On March 26, 1985, DOE concurred with our recommendation and said that it is developing a written agreement between its Office of Defense Programs and OCRWM to describe the process for determining the fee to be charged the federal government for defense waste.

OCRWM officials categorized the major comments into two general areas: (1) those dealing with data presented and (2) those dealing with the methodology used by OCRWM. According to these officials, those comments concerning the data presented assert that the assessments

- contain technical and factual errors,
- lack sufficient technical information to justify the conclusions made about site suitability, and
- do not adequately address waste transportation issues.

OCRWM said that comments criticizing the methodology used by OCRWM in preparing the assessments focused on

- alleged incorrect interpretations and analyses of the data and
- analyses based on standards, such as the siting guidelines, which the commentators contend are not in compliance with NWPA.

OCRWM officials said that they were impressed with the quality and commitment behind the comments. They also said that the comments will improve the quality of and should lead to changes in the final assessments. However, the officials could not determine, at this time, if the changes would affect the overall ranking of the sites.

OCRWM tentatively expects to finalize only the assessments for the five higher ranked sites that will be formally nominated. Comments for all nine sites, however, will be addressed in the comment response document included with the final assessments. The Secretary of Energy will recommend three of the five nominated sites to the President for site characterization. OCRWM officials stated that the assessments will be finalized in late 1985 and the recommendation to the President will follow.

MISSION PLAN FINALIZED

Section 301 of NWPA required that DOE prepare a mission plan--a comprehensive report that is to provide sufficient information to permit informed decisions on the nuclear waste program and related research. The plan must contain a schedule of milestones directed toward meeting the act's legislative requirements.

The act called for the final mission plan to be submitted to the appropriate committees of the Congress by June 7, 1984. OCRWM issued a draft plan for comment in May 1984; and by June 30, 1985, finalized the plan. DOE submitted the plan to the Congress in early July 1985.

The mission plan contains three volumes. Volume I is divided in two parts describing (1) overall goals, objectives, and strategy for waste disposal and (2) detailed information required by the act, such as identification of primary scientific, engineering, and technical information and evaluation of political, legal, or institutional problems. Volume II summarizes and responds to the approximately 2,500 comments received on the April 1984 draft mission plan and groups the comments by subject area. Volume III is a reproduction of all of the comments received.

OCRWM officials said that as a result of comments and DOE's growing realization of their importance, a new chapter on relations with states and Indian tribes was added to the plan, and sections of the plan dealing with a quality assurance program and the management of defense high-level waste were expanded. In addition, the final plan reflects DOE's current thinking that the nuclear waste program should be an integrated system rather than one that relies strictly on repository development. Therefore, the plan discusses DOE's strategy for integrating a transportation plan and an MRS facility into the waste management program.

DOE officials characterize the mission plan as a living document that must be able to change as circumstances change. Thus the plan describes a set of contingency plans that can be implemented as necessary to guide the program for 30 to 40 years. DOE officials expect to review the plan as often as once a year and update it as often as necessary.

OTHER OCRWM ACTIVITIES

During the quarter OCRWM completed its review of an advisory panel's study of alternative means of financing and managing the nuclear waste program, issued a screening methodology document for the second repository program, and released its second annual report. Steps were also taken toward developing transportation plans for the program.

Advisory panel prefers that a public corporation manage the waste program

Section 303 of NWPA required the Secretary of Energy to submit to the Congress, by January 7, 1984, a study of alternative approaches to managing the waste program, including the feasibility of establishing a private corporation to manage the waste program. DOE selected an independent advisory panel to conduct the study.²

²See app. II of our first quarterly report (GAO/RCED-85-42) for a list of those individuals who served on the panel.

In January 1985 the panel submitted its report, at a total cost of about \$500,000, to the Secretary of Energy, who then formed a departmental review group to prepare DOE's response to the report. On April 18, 1985, the Secretary submitted the panel's report and DOE's response to the report to the Congress.

The panel's principal recommendation was that an investigation should be made to determine the steps necessary to implement an alternative organization to OCRWM. The panel's preferred alternative is to abolish OCRWM and establish a public corporation called the Federal Corporation of Waste Management (FEDCORP), chartered by the Congress, to manage the waste program. FEDCORP would have a Board of Directors appointed by the President and confirmed by the Senate. The Board would select a full-time chief executive officer to manage the day-to-day operations of the corporation. The primary advantages to FEDCORP, according to the panel, would be its business orientation and structure that would encourage cost-effectiveness and timely completion of projects, political independence, almost complete financial authority over the program, and ability to be more responsive to NRC and other regulators.³

DOE, in its response to the report, concluded that the possible management advantages of a new organizational form would be more than offset by a number of disadvantages, including possible delays in the critical siting process associated with the difficulty in obtaining the necessary legislative amendments to effect such a change and the transition to a new organization. In addition, DOE said that there is a continued need for government oversight of siting activities and cited the opposition of states and utilities to legislative changes in the NWPA. DOE also thinks that the credibility and management of the program has improved substantially since passage of NWPA in January 1983, and any change would weaken the program's stability and credibility.

Status of OCRWM actions to site a second repository

In April 1985 OCRWM issued a report entitled "Region-to-Area Screening Methodology for the Crystalline Repository Project" that included comments from concerned states and OCRWM responses. The intent of the screening process is to narrow the identified geographical regions in 17 North Central, Northeastern, and South-eastern states⁴ to about 15 candidate areas that will be investigated and evaluated in more detail.

³For a more detailed description of the advisory panel's report, see our third quarterly report (GAO/RCED-85-116).

⁴For a listing of the 17 states, see our third quarterly report (GAO/RCED-85-116).

During the quarter OCRWM also reviewed comments from states on its revised second repository draft regional characterization reports that were issued on December 11, 1984. The final regional geologic and environmental characterization reports, to be issued in the summer of 1985, will provide the data base for the screening process. According to an OCRWM official, a draft area recommendation report that will document the selection of areas suitable for investigation will be available for public comment in November 1985.

OCRWM issues its second annual report

In May 1985 OCRWM issued its second annual report to the Congress covering its activities and expenditures during the fiscal year ending September 30, 1984. The report notes program accomplishments for fiscal year 1984, presents OCRWM's financial statements for fiscal years 1983 and 1984, and contains a brief summary of program accomplishments since the end of fiscal year 1984. Financial statements for the report were audited by a certified public accounting firm under contract to perform auditing services for the program for the first two years of its existence, fiscal years 1983 and 1984. (See p. 17.)

OCRWM developing a transportation business plan

Section 137 of NWSA states that transportation of spent fuel under the act shall involve the private sector, to the largest extent possible, and take advantage of existing private transportation management expertise. Toward that objective, OCRWM's Office of Storage and Transportation Systems is in the process of preparing a draft transportation business plan. According to an OCRWM official, it intends to issue the draft business plan for public review and comment in late July 1985 and issue the final plan in November 1985.

The business plan includes a strategy for using private industry to develop and build the waste casks to be used in shipping the high-level waste from reactor sites to the MRS facility, from reactor sites directly to the repository, and from the MRS facility to the repository. The strategy also relies on the private sector for shipping the waste to the MRS facility and/or the repository. DOE intends to award competitive contracts for these services. The business plan will identify ways to incorporate the private sector in the activities.

STATUS OF LITIGATION REGARDING OCRWM ACTIVITIES

According to officials in DOE's Office of General Counsel, during the quarter seven new lawsuits were filed against the DOE waste management program. Each new suit requested a court review of the siting guidelines similar to two earlier suits initiated by

the Environmental Policy Institute and the state of Washington. Also during the quarter, the U.S. Court of Appeals for the Fifth Circuit ruled in favor of DOE's motion to dismiss an older Texas case in which the plaintiffs sought a court review of the site-screening process DOE used to narrow the size of two potential repository sites. In early July the state of Texas filed for a rehearing of the case. In the other case involving the waste program, the court set a date for oral arguments. The following sections describe these cases directed at the OCRWM repository activities.⁵

Seven new siting
guidelines cases filed

During the quarter ending June 30, 1985, six states filed suit against DOE for a court review of the siting guidelines. The six states are Minnesota, Mississippi, Nevada, Texas, Utah, and Vermont. POWER, Inc., and STAND, Inc., two private citizens' organizations in Texas, also jointly filed suit for the same purpose. The suits were filed shortly before the act's 180-day deadline for litigation concerning the guidelines elapsed. The siting guidelines suits were filed in U.S. Courts of Appeals for several different circuits, but DOE's Office of General Counsel anticipates that the cases will be considered together in the Ninth Circuit where two similar cases discussed below had been previously filed.

Environmental Policy Institute, et. al.
v. Herrington
Washington v. DOE

In December 1984 and March 1985, a number of environmental groups and the state of Washington, respectively, petitioned the U.S. Court of Appeals for the Ninth Circuit to review the siting guidelines to determine if they are in accordance with NWPA. In effect the petitioners have requested the court to invalidate the siting guidelines. In May 1985 DOE filed motions to dismiss both cases, arguing that the claims of the petitioners are premature because the issuance of the guidelines is a preliminary step to the issuance of the environmental assessments. Application of the guidelines to the assessments is an action that is reviewable by the court under the NWPA. The petitioners in both cases are expected to respond to DOE's motion in July 1985.

⁵Two other lawsuits filed earlier in the program challenged the amount of fees paid into the Nuclear Waste Fund. During the quarter, the U.S. Court of Appeals for the District of Columbia Circuit ruled in DOE's favor in one of those cases. The other case is still under review in that same court.

Nevada v. Herrington

In December 1984 Nevada filed suit against DOE over the disapproval of parts of its fiscal years 1984 and 1985 grant requests.⁶ As of the end of the quarter, both parties had filed briefs and, following Nevada's motion for an expedited hearing, oral arguments were scheduled to be held in August 1985.

Texas v. DOE
Devin v. DOE

In two separate actions filed in December 1984, Texas and several private individuals and associations petitioned the U.S. Court of Appeals for the Fifth Circuit to review the screening process used to narrow the size of two potential repository sites in Texas in the hope that the court would invalidate the screening process. In February 1985, DOE filed a motion to dismiss the case and on June 19, 1985, the court granted that motion. The court concluded that DOE's preliminary siting decisions, challenged by Texas and the private petitioners, are not "final actions" and, therefore, not "ripe" for review. When considered in the context of the statutory scheme of NWPA, the court concluded that the screening decisions were but a preliminary step to actions that will later be reviewable by the court. According to an official in DOE's Office of General Counsel, the state of Texas filed for a rehearing of the case in early July 1985.

⁶For a more detailed discussion of the history of this case, see our third quarterly report (GAO/RCED-85-116).

CHAPTER 3

STATUS OF SELECTED OCRWM

MANAGEMENT ACTIVITIES

NWPA established OCRWM to carry out DOE's responsibilities under the act. In October 1983, the Secretary of Energy formally approved and activated OCRWM, and in May 1984, a director was appointed by the President and confirmed by the Senate.¹ Our first three quarterly reports discussed several initiatives that OCRWM had taken to improve its management of activities directed toward accomplishing the objectives of the act. These included (1) organizational and staffing changes, (2) developing an internal program management system with an automated information system, (3) contracting with a certified public accountant to audit the Nuclear Waste Fund, and (4) developing a program of coordination with affected states and Indian tribes.

During the quarter staffing levels continued to increase, a manual for OCRWM's program management system was drafted, and the independent audit was completed. OCRWM made progress in finalizing the environmental assessments and took several steps to improve its program to provide information to states and tribes.

OCRWM STAFF IS INCREASING

As reported in our first three quarterly reports, OCRWM has made progress in organizing to meet NWPA objectives and in filling staff positions both at headquarters and in the field project offices. At the end of March 1985, 19 vacancies existed at headquarters and 17 in the field. At that time, OCRWM officials said that they were attempting to fill all headquarters vacancies and were encouraging the field offices to do the same. At the end of June, 11 vacancies remained in headquarters and 13 in the field.

Personnel ceilings for OCRWM headquarters and field offices have not changed since March 1985. (See app. I.) OCRWM Office of Resource Management officials said that they did not expect the ceilings to be raised again in fiscal year 1985. However, during the quarter the number of full-time personnel increased from 214 to 226. No significant organizational changes took place during the quarter.

¹For a detailed discussion of DOE's efforts to establish a separate organization to manage the waste disposal program, see our first annual audit report (GAO/RCED-85-27).

OCRWM PROGRAM MANAGEMENT
SYSTEM DRAFT COMPLETED

OCRWM's Office of Resource Management made progress developing an overall internal program management system to enable OCRWM managers to better plan, monitor, and analyze waste management program elements. The system is to include all planning documents required by NWPA, an annual operating plan, and a system engineering management plan. It is also to include an automated management information system.

In May 1985, OCRWM issued a draft Program Management System Manual for internal OCRWM review. The draft manual describes the program management system that is to provide centralized managerial direction from OCRWM headquarters and is also to be used by project offices as a supplement to existing DOE orders that prescribe DOE policies and procedures. OCRWM expects the manual to be supported by detailed descriptions in management documents that individually address each procedure, plan, or system. The manual discusses program planning, program controls, financial and administrative management, quality assurance, safety, regulatory compliance, and OCRWM institutional policy. It also describes the OCRWM information system that will produce or coordinate production of all periodic reports to management, including technical, cost, and schedule information. In June 1985, an OCRWM Resources Management Division official told us that the manual will be revised, and he expects the final manual to be completed by October 1, 1985.

OCRWM also expects its automated information system to be completed and fully operational by October 1, 1985. Software for the system is readily available within DOE. OCRWM intends to use in-place contractor hardware to receive data from the field and to interface with DOE's official financial information system. Beginning in May, OCRWM issued monthly reports on program cost and schedule performance to test the management information system. The report provides information on cost and schedule variances for each major project, program milestones, actual and projected status of the fund, and financial status by first repository and MRS projects.

CERTIFIED PUBLIC ACCOUNTANT AUDIT
OF NUCLEAR WASTE FUND COMPLETED

In September 1984, DOE signed a \$1.3 million contract with a certified public accounting firm--Main Hurdman--to provide auditing services for the fund for fiscal years 1983 and 1984 with options for 3 more years. The scope of work defined in the contract included (1) examining the financial statements of the fund, (2) determining whether the statements presented the financial position and results of OCRWM operations in accordance with generally accepted accounting principles, and (3) determining whether

laws and regulations affecting financial statements had been complied with.

OCRWM provided draft financial statements and reports to Main Hurdman and, in turn, Main Hurdman was to provide OCRWM with (1) audited financial statements, (2) a study of internal controls conducted as part of the financial audit, (3) a compliance report, and (4) a management letter. The compliance report was to provide the overall status of the Nuclear Waste Fund and the management letter was to contain the auditors' recommendations.

Main Hurdman submitted the results of its examination of the fund's financial statements, including its study of internal controls, and the compliance report stating that the fund had complied with existing laws and regulations in March 1985. However, the firm did not submit its management letter, as required by the contract, until June 1985, 5 months later than OCRWM officials originally anticipated. According to OCRWM officials, the letter was not completed because of the time needed to review suggested adjusting entries to DOE accounts.

The report disclosed that the Nuclear Waste Fund complied with applicable laws and regulations that might have a material effect on its financial position, changes in financial position, or results of its operations. However, the auditors identified about \$13 million in nuclear waste activity costs that were incurred prior to passage of NWPA and paid from DOE appropriations. These costs should be charged to the Nuclear Waste Fund. By the end of the quarter, OCRWM and DOE budget officials had decided to add \$6.5 million in contractor costs to the fund's appropriated debt (see p. 36) but had not yet processed the necessary paperwork. In addition, an OCRWM official said that \$6.4 million in plant and equipment acquisition costs has been charged to the Nuclear Waste Fund during the quarter.

OCRWM finance officials stated that, in response to the auditors' recommendations and comments in the management letter concerning accounting procedures and techniques used in the Nuclear Waste Fund, they

- are producing monthly reports to monitor the status of OCRWM's obligational authority and financial activity and plan to provide more reports;
- have taken steps to identify and correlate fiscal year 1985 budget data with previous years' data; and
- have developed policies to account for and manage property, plant, and capital equipment.

DOE WORKING TO IMPROVE RELATIONS
WITH STATES, INDIAN TRIBES, AND
LOCAL COMMUNITIES

In addition to clarifying comments on the environmental assessments, OCRWM took steps to establish a more comprehensive plan and program for interacting with the states and Indian tribes. In particular, the mission plan proposes an overall strategy for institutional relations. OCRWM also took several steps to improve communications and its outreach program by establishing a state desk officer program and an Outreach Products Committee to better inform the general public about the waste program.

OCRWM's mission plan establishes
institutional relations strategy

The mission plan details OCRWM's institutional plan in the implementation of the waste management program. According to the plan, the primary strategy of the institutional program is to

- ensure the full participation by states and Indian tribes in program activities;
- keep all affected parties informed of program activities;
- assess the impact of program activities on affected parties, and
- avoid or mitigate any negative impacts of program activities or compensate those negatively impacted by these activities.

Toward these ends, DOE is developing its institutional program composed of three related elements:

- Outreach and participation: ensuring that information is communicated to interested parties and that affected parties are involved in the program.
- Consultation and cooperation: negotiating and implementing formal agreements that establish the foundation for interaction with states and affected Indian tribes.
- Impact analysis and mitigation: ensuring that affected parties are actively involved in efforts to assess the impacts of program activities and to eliminate, mitigate, or compensate for any negative impacts.

Outreach and participation

Consistent with the mission plan, OCRWM officials told us that OCRWM took steps to improve relations with states and Indian tribes. In particular, OCRWM officials think that they are keeping states and tribes better informed on their position on specific issues, actions they intend to take, and the reasons for the actions. For example, OCRWM's policy office, which is responsible for overall state and tribal relations, has begun distributing reports and correspondence to states and other interested parties to keep them apprised of policy decisions and planned actions.

In addition, OCRWM officials stated that periodic meetings are held with states, Indian tribes, and other interested parties to exchange ideas and to provide program status reports. OCRWM held two meetings during the quarter; one in Baltimore, Maryland, on May 2, 1985; and one in Kansas City, Missouri, on May 14 and 15, 1985. According to OCRWM officials, the Baltimore meeting was the fifth in a series of quarterly working meetings between OCRWM and first repository states and tribal officials. The purpose of these meetings was to discuss specific issues and explore ways to solve problems relative to the waste disposal program. The purpose of the Kansas City meeting was to provide general information to all interested parties on the entire waste disposal program, including the second repository. These meetings are to be held twice a year, and OCRWM encourages all interested parties to attend, including representatives from utilities, second repository states, and local governments and organizations. During the quarter, OCRWM officials also held several follow-up meetings with state officials to clarify comments made on the draft assessments.

OCRWM's Office of Geologic Repositories officials told us that in May 1985 they established a desk officer system for the six first repository states. Desk officers will maintain contact with project office staff and, in coordination with the project offices, maintain contact with states, tribes, and local officials, regarding program activities. The office established the system to

- keep headquarters personnel better informed on state and project office activities,
- better communicate information to states and project offices, and
- focus state and project office contacts on designated individuals at headquarters.

OCRWM's Office of Policy, Integration and Outreach (OPIO) Director stated that OCRWM is also trying to educate local community governments and associations and the general public on the nuclear waste program and nuclear power through its outreach program. To accomplish this objective, OCRWM established an Outreach Products Committee, comprised of headquarters and project office personnel, and held its first meeting on May 30, 1985. The committee's major goals are to

- define immediate public information product needs,
- develop a public information products plan for OCRWM, and
- provide a quality assurance mechanism for the policy office in monitoring the planning process and developing products.

OPIO expects to concentrate on informing the general public about nuclear power and nuclear waste disposal by using in-house support and private contractors and to produce about nine program-wide publications and about seven salt repository program documents by the end of calendar year 1985. Much of this work will be done by universities through competitive bidding.

Consultation and cooperation

The act requires DOE to formally negotiate consultation and cooperation agreements with states that have sites selected for site characterization studies. States and Indian tribes can request such agreements sooner, if they so desire. During the quarter no states initiated formal negotiations with OCRWM for a consultation and cooperation agreement under the act. Furthermore, negotiations with the only state (Washington) to approach OCRWM about a consultation and cooperation agreement remained suspended. (See our previous reports (p. 1) for a discussion of the issues hindering final agreement). However, the Confederated Tribes of the Umatilla Indian Reservation submitted a request to DOE on June 10, 1985, to begin negotiating a consultation and cooperation agreement to identify and provide a means of resolving the tribe's public health, safety, environmental, and economic concerns that are associated with the proposed location of a repository at Hanford, Washington. The tribe proposed a first negotiation session with DOE for the latter part of July 1985.

Impact analysis and mitigation

Under NWPA, DOE must provide grant assistance from the Nuclear Waste Fund to affected states and tribes to aid them in such activities as (1) reviewing activities with respect to proposed repository sites for potential economic, social, public health and safety, and environmental impacts, (2) developing requests for assistance from DOE to mitigate the impact of repository development, and (3) participating in monitoring, testing, and evaluating site characterization.

Since enactment of NWPA, grants totaling about \$21 million have been awarded to 28 different grantees. Most of the grants covered 1 year and went to individual state governments or Indian tribes; others, however, have been made to a university and to national associations representing states or Indian tribes. Grant assistance provided by DOE from January 1983 through June 1985 is shown in appendix II.

OCRWM also prepared, in June 1985, draft guidelines for OCRWM interaction with community and local governments in the development and management of the waste disposal program. The purpose of the guidelines is to enable OCRWM to take local concerns into consideration in its site and transportation-planning activities and to assure that citizens have accurate information and can participate in the implementation of the waste disposal program. OCRWM intends to submit the guidelines to DOE project offices for review and comment before they are finalized.

CHAPTER 4

STATUS OF THE NUCLEAR WASTE FUND

AS OF JUNE 30, 1985

NWPA established the Nuclear Waste Fund, a separate fund maintained by the Department of the Treasury, to finance the nuclear waste program. It receives fees paid by the owners and generators of high-level radioactive waste and disburses funds to finance OCRWM activities. The fund began receiving quarterly fees from the ongoing generators of nuclear power late in fiscal year 1983. During the quarter ending June 30, 1985, the fund received quarterly fees totaling \$99.7 million. The fund also received one-time fees from the owners of spent fuel generated prior to April 7, 1983, of about \$1.4 billion by June 30, 1985. During the same quarter, the fund disbursed about \$80.2 million, most of which went to contractors who conduct the bulk of program activities for OCRWM.

In addition to fees collected from utilities, two other funding sources currently support OCRWM activities: interest income from investments made with excess money in the waste fund and appropriated funds for generic research not directly related to repository development. OCRWM began investing excess funds in February 1985. During the quarter ending June 30, 1985, the fund received about \$536,000 in interest from these investments. OCRWM spent about \$6 million during the quarter in appropriated funds for research and development programs authorized under the act but not directly related to repository development or eligible for financing through the Nuclear Waste Fund.

NUCLEAR WASTE FUND RECEIPTS AND COSTS

Quarterly receipts

As described in chapter 1, DOE has contracted with 64 owners of nuclear power plants for the payment of a one-mill-per-kilowatt-hour fee to be paid quarterly into the fund to finance the waste program. The fund began receiving quarterly fees late in fiscal year 1983; by the end of that fiscal year, it had collected about \$73.6 million. During fiscal year 1984, quarterly receipts totaled about \$329.5 million. During the third quarter of fiscal year 1985, receipts of about \$99.7 million were collected, making a total of \$275.1 million for the first three quarters of fiscal year 1985, and \$678.2 million since the program began.

First one-time fees received

Under the DOE contracts, owners of previously generated spent fuel must have selected by June 30, 1985, one of three options to pay one-time fees. (See app. III for an explanation of the three

options.) One of these options required full payment (with no interest charges) of the one-time fee by June 30, 1985. Owners who did not choose to pay the one-time fee by June 30, 1985, must pay interest to the fund on the amount due from April 7, 1983, on the basis of the payment method selected.

By June 30, 1985, the fund had received about \$1.4 billion in one-time fees from 35 owners of spent fuel produced before April 7, 1983. Another 3 owners decided to pay a total of \$174 million in one-time fees plus interest in future quarterly payments over the next 10 years, while 11 other owners decided to make future lump sum payments totaling \$735 million plus interest before delivering any spent fuel to the federal government. (See app. III.)

DOE is investing funds that are
in excess of current needs

NWPA provides that when the Nuclear Waste Fund has funds that are in excess of current needs, including the appropriated debt owed to the Department of the Treasury (see p. 26), DOE may request the Secretary of the Treasury to invest these excess funds in Treasury financial instruments in amounts as the Secretary of Energy determines appropriate. DOE made its first investment in overnight Treasury bills on February 1, 1985.

In the quarter ending June 30, 1985, DOE made both overnight and other short-term investments (less than 30 days). Daily overnight investments earning interest during the quarter fluctuated from \$1 million to \$136 million, while daily interest received on these investments fluctuated between \$258 and \$27,122, totaling \$294,115 for the quarter. In addition, DOE invested \$57 million in three other short-term Treasury bills and received interest totaling \$242,870.

DOE will continue investing funds in overnight and other short-term Treasury instruments. However, according to DOE controller officials, DOE began to make long-term investments (90 days to 3 years) at the end of the quarter with the receipt of \$1.4 billion in one-time fees. As of July 2, 1985, DOE has invested \$1.4 billion in various long-term Treasury bills and notes so that they mature at different times to use for specific program purposes. DOE also invested \$15 million in a short-term instrument that will mature next quarter. The following table summarizes DOE's current long-term investment strategy.

Long-Term Investment Activity
(as of July 2, 1985)

<u>Amount invested</u> (in millions)	<u>Number of</u> <u>investments</u>	<u>Length of</u> <u>investment</u>
\$ 209.5	4	90 days to 1 year
454.2	10	Over 1 year to 2 years
<u>753.0</u>	<u>6</u>	Over 2 years to 3 years
<u>\$1,416.7</u>	<u>20</u>	

Nuclear Waste Fund costs

OCRWM obligates moneys from the Nuclear Waste Fund by awarding contracts and grants and disbursing funds for its civil service payroll and other program management needs. It can obligate amounts only as appropriated even though funds may be available in the Nuclear Waste Fund. OCRWM's appropriation for fiscal year 1985 totals \$327.6 million. Actual costs are recorded when invoices are received, and disbursements are recorded when payments are made. Obligations, costs, and disbursements are recorded into DOE's financial information system by the field finance offices that receive allocations from the fund.

Beginning with fiscal year 1985, these transactions are recorded under the five major cost activities shown in the table in appendix IV. The table depicts waste fund costs by each major activity and subactivity for the first three quarters of fiscal year 1985 and shows that about \$152 million, or 72 percent, of the funds were spent for developing the first repository. Activities in this category are primarily managed by the field offices and the Office of Geologic Repositories and include (1) the development, verification, and application of geological repository performance assessment models, (2) preliminary site characterization studies, (3) repository design development, and (4) the preparation of environmental assessments.

OCRWM field offices began, in fiscal year 1985, to report costs and obligations into the DOE financial information system by work breakdown structure.¹ Detailed cost data concerning the development, construction, and operation of the first and second repositories are shown in appendix V.

¹For more information on OCRWM's work breakdown structure, see our second quarterly report (GAO/RCED-85-65).

OCRWM CONTRACT ACTIVITY

NWPA authorizes DOE to make expenditures from the fund to finance radioactive waste disposal activities. These activities include all phases of developing, constructing, operating, and closing any repository, MRS facility, or test and evaluation facility authorized under the act; research, development, and demonstration activities connected with developing the repositories; the administrative cost of the radioactive waste disposal program; and any costs associated with transporting, treating, and packaging spent nuclear fuel or high-level radioactive waste.

Most of these waste disposal activities have been and are being carried out by contractors. During the third quarter of fiscal year 1985, DOE spent about \$78 million for contractor services and obligated about \$29 million, about 72 percent of total dollars obligated during the quarter. Since inception of the fund, OCRWM has obligated about \$677 million to 128 contractors.

Contracts for the most part are negotiated, awarded, and administered through DOE field operations offices in Richland, Washington; Chicago, Illinois; and Las Vegas, Nevada; and in DOE headquarters in Washington, D.C. Some contracts are monitored by other DOE operations offices, such as those in Albuquerque, New Mexico, and San Francisco, California. Each of the three first repository project offices has prime contracts with one or several contractors who perform waste program activities or sub-contract for these activities. Appendix VI summarizes contract activity since inception of the fund. It also lists individually all 13 prime contractors who have incurred costs or obligations of \$1 million or more during the quarter ending June 30, 1985. Data from the other 115 contractors are aggregated in the "others" category.

OVERALL STATUS OF THE NUCLEAR WASTE FUND

Section 302 of NWPA required DOE to transfer unexpended appropriations as of January 7, 1983, from the ongoing nuclear waste program to the waste fund. Subsequently, DOE transferred about \$254 million into the fund in fiscal year 1983 as an appropriated debt to be repaid to the Treasury with interest on the amounts actually used for the program. Another \$4.6 million was transferred into the fund in fiscal year 1984 from other appropriations that had been passed before the fund was established. An additional \$6.5 million will be added to the appropriated debt during the next quarter as a result of the audit of fiscal years 1983 and 1984 program funds. (See discussion in ch. 3.) As of June 30, 1985, about \$863,000 in interest expense had accumulated for fiscal year 1985.

The following table summarizes the overall status of the fund as of June 30, 1985. It shows that the fund had sufficient cash

from the 1983 appropriation transfer and from fees collected to cover all financial requirements through June 1985. OCRWM officials said that repayment of the appropriated debt to the Treasury will take place during the next quarter using the one-time fees that were paid by June 30, 1985.

Status of the Nuclear Waste Fund
As of June 30, 1985

Beginning cash balance - April 1, 1985	\$ 259,714,502
Receipts from waste owners	1,525,602,553
Investment earnings	<u>536,985</u>
 Total funds available	 <u>1,785,854,040</u>
 Disbursements	 - <u>80,217,527</u>
 Fund balance as of June 30, 1985	 <u>1,705,636,513^a</u>
 Cash balance as of June 30, 1985	 \$ 523,115,197
Unpaid obligations as of June 30, 1985	\$ 164,843,419
Appropriated debt owed to Treasury	\$ 258,443,533

^aFund balance includes investments made during the quarter that have not matured.

Source: DOE's financial information system.

OTHER FUNDING SOURCES

Activities under the Civilian Radioactive Waste Research and Development (R&D) Program that are not directly related to the geologic repositories are funded from appropriated funds rather than from fees collected from utilities. Some of the research was in progress prior to passage of NWPA and other research involves new initiatives. The R&D program funds and conducts research in the following areas:

- spent-fuel storage,
- alternative disposal concepts, and
- generic repository research.

Currently, DOE has cooperative agreements with Virginia Electric and Power Company and Carolina Power and Light Company and a contract with Nuclear Fuel Services to demonstrate dry storage of spent fuel. DOE is also working with the Tennessee

Valley Authority and is negotiating with Northeast Utilities Company of Hartford, Connecticut, to demonstrate spent-fuel rod consolidation. For spent-fuel storage R&D demonstration programs, total DOE fund and facility contribution is to be 25 percent of total cost. All other costs are paid by utilities.

The only alternative disposal research that DOE is conducting in detail is the use of subseabeds for the disposal of spent fuel and other high-level waste. DOE expects that by 1990, it will determine the technical, engineering, environmental, and institutional feasibility of disposing of these wastes in the stable formations of the deep ocean floor.

Generic repository research conducted by OCRWM is focused on three main areas of effort: international program support, special technical reviews, and waste management studies.

The purpose of these efforts is to assure adequate international cooperation, provide an independent assessment of the technical adequacy of the program, and evaluate alternatives that could improve the cost, schedule, or technical aspects of the R&D program.

The table below shows accrued costs for the R&D program for the first three quarters of fiscal year 1985.

Costs for Civilian Radioactive
Waste R&D Program for Fiscal Year 1985

	<u>First quarter</u>	<u>Second quarter</u>	<u>Third quarter</u>	<u>Cumulative^a</u>
	------(millions)-----			
Spent-fuel storage R&D	\$ 2.14	\$ 2.20	\$ 3.20	\$ 7.54
Alternative disposal concepts	.60	3.05	2.73	6.38
Generic methods and supporting studies	.35	.50	.05	.90
Program direction	<u>.07</u>	<u>.06</u>	<u>.07</u>	<u>.20</u>
Total	\$ <u>3.16</u>	\$ <u>5.81</u>	\$ <u>6.05</u>	\$ <u>15.02</u>

^aTotals may not add due to rounding.

Source: DOE's financial information system.

Another source of funding authorized by the act is the Interim Storage Fund. That fund is to receive fees from utilities that apply for and receive from the government interim storage services for spent fuel. Fees are to be based on the estimated prorated costs of storage, which include the costs of developing

and maintaining interim storage facilities. To date, no utilities have applied for interim storage services, and DOE officials do not anticipate using interim storage in the near future.

OCRWM STAFFING LEVELS AS OF JUNE 30, 1985

Program office	Full-time personnel ceiling ^a		Number of full-time personnel on board		
	Dec. 1984	Mar. 1985 ^b	Dec. 1984	Mar. 1985	June 1985
Office of the Director	4	4	6	6	5
Office of Policy, Integration and Outreach	12	23	21	21	21
Office of Resource Management	31	36	27	26	31
Office of Geologic Repositories	42	46	31	38	40
Office of Storage and Transportation Systems	<u>15</u>	<u>22</u>	<u>16</u>	<u>21</u>	<u>23</u>
OCRWM headquarters Total	<u>104</u>	<u>131</u>	<u>101</u>	<u>112</u>	<u>120</u>
Field offices:					
Chicago	64	68	55	56	57
Richland	30	32	33	32	35
Nevada	<u>17</u>	<u>19</u>	<u>12</u>	<u>14</u>	<u>14</u>
Field total	<u>111</u>	<u>119</u>	<u>100</u>	<u>102</u>	<u>106</u>
Total ^c	<u>215</u>	<u>250</u>	<u>201</u>	<u>214</u>	<u>226</u>

^aDoes not include ceilings for part-time support personnel.

^bPersonnel ceilings remained the same during the quarter ending June 30, 1985.

^cTotal does not include staff time used by other DOE offices and charged to the Nuclear Waste Fund. For fiscal year 1985, OCRWM estimates this time will total about 18 staff years.

Source: DOE.

STATE/INDIAN TRIBE ASSISTANCE PROVIDED BY DOEJANUARY 1983 THROUGH JUNE 1985

<u>Grantee</u>	<u>DOE obligations</u>
Confederated Tribe of Umatillas	\$ 819,819
Connecticut	317,126
Georgia	247,931
Louisiana	833,319
Maine	412,840
Maryland	103,135
Massachusetts	409,411
Michigan	461,815
Minnesota	550,587
Mississippi	1,885,836
National Congress of American Indians	416,150
National Conference of State Legislators	216,873
Nevada	2,894,861
New Hampshire	264,538
New Jersey	224,382
New York	443,128
Nez Perce Tribe	526,568
N. Carolina	464,013
Rhode Island	232,011
S. Carolina	411,497
Tennessee	1,404,533
Texas	599,840
Utah	1,658,533
Vermont	119,180
Virginia	41,130
Washington State (2 grants)	2,717,297
Wisconsin	575,282
Yakima Indian Nation	<u>2,146,852</u>
 Total	 <u>\$21,398,487</u>

Source: DOE's financial information system and OCRWM.

OPTIONS FOR OWNERS OF SPENT FUELTO PAY ONE-TIME FEES

Under DOE's standard contracts, 47 owners of spent fuel had to select one of the three listed options for paying for the disposal of spent fuel generated prior to April 7, 1983. The tables in the appendix show the option selected and the amount owed or already paid by the 47 owners.

- Option 1: Payment over 40 quarters (10 years) consisting of fee plus interest on the outstanding fee balance. Compound interest from April 7, 1983, to first payment will be based on the 13-week Treasury bill rate in effect for each quarter. Beginning with the first payment, interest will then be calculated using a 10-year Treasury note rate that is in effect on the date of the first payment. A lump-sum or partial lump-sum payment is permitted anytime before the end of the 40-quarter period without interest penalty.
- Option 2: Lump-sum payment anytime before delivering the spent fuel to the federal government. Interest will be computed from April 7, 1983, and compounded quarterly to the date of payment based on the 13-week Treasury bill rate in effect for each assigned quarter.
- Option 3: Full payment before June 30, 1985, or 2 years after the contract is signed, whichever comes later. No interest will be charged under this option.

Options Selected By Owners For Paying One-Time Fees

<u>Owner name</u>	<u>1</u> <u>Over a 40-</u> <u>quarter</u> <u>period</u>	<u>2</u> <u>Lump sum</u> <u>before spent</u> <u>fuel delivery</u>	<u>3</u> <u>Full</u> <u>payment</u> <u>by 6/30/85</u>
	-----000 omitted-----		
Alabama Power			\$ 33,572
Arkansas Power and Light		\$ 49,400	
Babcock & Wilcox			4
Baltimore Gas and Electric			71,829
Boston Edison			40,583
Carolina Power and Light			97,724
Commonwealth Edison		275,165	24,813*
Connecticut Yankee Atomic Power		48,726	
Consolidated Edison			40,516
Consumers Power		44,276	
Dairyland Power			3,603
Dow Chemical			b
Duke Power			121,991
Duquesne Light			18,681
Florida Power and Light			102,746
Florida Power			25,929
General Electric			40
General Electric Uranium			12,628
Georgia Power			51,400
GPU Nuclear	\$ 71,567		
Indiana & Michigan Electric	71,964		
Iowa Electric Light and Power			23,643
Maine Yankee Atomic Power		50,368	
Nebraska Public Power District			40,455
Niagara Mohawk Power		45,472	
Northeast Utility Service		82,164	
Northern States Power			94,398
Nuclear Fuel Service			4,110

APPENDIX III

APPENDIX III

Owner name	1 Over a 40- quarter period	2 Lump sum before spent fuel delivery	3 Full payment by 6/30/85
	-----000 omitted-----		
Omaha Public Power District			\$ 22,916
Pacific Gas and Electric			3,887
Pennsylvania Power & Light			1,630
Philadelphia Electric			108,831
Portland General Electric			30,092
Power Authority of State of NY		\$ 58,710	
Public Service Electric and Gas			36,279
Rochester Gas and Electric		33,134	
Sacramento Municipal Utility District			28,570
South Carolina Electric and Gas			1,042
Southern California Edison	\$ 30,667		
Tennessee Valley Authority			156,866
Toledo Edison		8,875	9,379 ^a
Vermont Yankee Nuclear Power		39,285	
Virginia Electric and Power			112,766
Wisconsin Electric Power			59,897
Wisconsin Public Service			26,603
Yankee Atomic Electric			13,207
Department of Energy			5,293 ^c
Total	<u>\$174,197^d</u>	<u>\$735,574^d</u>	<u>\$1,425,924^d</u>

^aContracts permitted use of two payment options.

^bAmount owed less than \$1,000.

^cDOE holds title to spent fuel from various demonstration reactors.

^dTotals may not add due to rounding.

STATUS OF NUCLEAR WASTE FUND COSTS FOR FISCAL YEAR 1985

<u>Funding Category</u>	<u>First quarter costs</u>	<u>Second quarter costs</u>	<u>Third quarter costs</u>	<u>Cumulative^b costs</u>
First repository				
Development, construction, operations	\$ 31,118,826	\$ 50,699,094	\$ 66,104,838	\$147,922,758
Capital equipment	1,099,790	1,268,894	1,430,863	3,799,548
Plant acquisition and construction	0	0	0	0
Total first repository	<u>32,218,616</u>	<u>51,967,988</u>	<u>67,535,701</u>	<u>151,722,306</u>
Second repository				
Development, construction, operations	4,528,144	4,390,476	5,657,587	14,576,207
Capital equipment	47,423	1,500	23,000	71,923
Plant acquisition and construction	0	0	0	0
Total second repository	<u>4,575,567</u>	<u>4,391,976</u>	<u>5,680,587</u>	<u>14,648,130</u>
Monitored retrievable storage				
Development, construction, operation	1,481,904	3,534,651	4,549,040	9,565,595
Capital equipment	0	54,297	30,864	85,161
Plant acquisition and construction	0	0	0	0
Total monitored retrievable storage	<u>1,481,904</u>	<u>3,588,948</u>	<u>4,579,904</u>	<u>9,650,756</u>
Program management and technical support				
Transportation, management, support	7,391,268	13,292,270	13,103,227	33,786,765
Capital equipment	-2,171 ^a	36,603	29,765	64,197
Plant acquisition and construction	0	0	0	0
Total program management and technical support	<u>7,389,097</u>	<u>13,328,873</u>	<u>13,132,992</u>	<u>33,850,963</u>
Debt service				
Interest expense owed to Treasury	474,516	302,639	86,126	863,281
Total debt service	<u>474,516</u>	<u>302,639</u>	<u>86,126</u>	<u>863,281</u>
Total	\$ <u>45,139,700</u>	\$ <u>73,580,424</u>	\$ <u>91,015,310</u>	\$ <u>210,735,436</u>

^aNegative figure due to adjustments to prior year costs.

^bTotals may not add due to rounding.

Source: DOE's financial information system.

COSTS BY WORK BREAKDOWN STRUCTURE FOR THE FIRST
AND SECOND REPOSITORIES FOR QUARTER ENDING
JUNE 30, 1985

Work breakdown structure task	<u>First repository</u>				<u>Second repository</u>		
	<u>Basalt</u>	<u>Tuff</u>	<u>Salt</u>	<u>Total^a</u>	<u>Crystal- line rock</u>	<u>Other rock types</u>	<u>Total</u>
----- (millions) -----							
Systems	\$ 1.37	\$ 1.00	\$ 4.13	\$ 6.50	\$.31	\$ 0.00	\$.31
Waste package	2.62	1.27	1.66	5.55	.01	0.00	.01
Site	5.35	4.92	9.39	19.66	3.45	.33	3.78
Repository	1.28	2.45	3.77	7.50	.14	0.00	.14
Regulatory and insti- tutional	1.73	.73	6.39	8.85	.30	0.00	.30
Exploratory shaft	1.42	1.44	2.81	5.67	0.00	0.00	0.00
Test facilities	.47	.18	.15	.80	.30	0.00	.30
Land acqui- sition	0.00	0.00	-.16 ^b	-.16	0.00	0.00	0.00
Program man- agement	5.03	2.29	3.01	10.33	.52	0.00	.52
Financial and techni- cal assis- tance	.64	.32	.45	1.42	.24	0.00	.24
Other	<u>0.00</u>	<u>0.00</u>	<u>-.01^b</u>	<u>-.01</u>	<u>.04</u>	<u>0.00</u>	<u>.04</u>
Total	<u>\$19.91</u>	<u>\$14.60</u>	<u>\$31.59</u>	<u>\$66.11</u>	<u>\$ 5.31</u>	<u>\$ 0.33</u>	<u>\$ 5.64</u>

^aTotals may not add due to rounding.

^bNegative figure due to correcting prior period accounting error.

Source: DOE's financial information system.

SUMMARY OF OCRWM CONTRACT ACTIVITY

<u>DOE operations office contractor name</u>	<u>Total number of contracts</u>	<u>Costs third quarter FY85</u>	<u>Obligations third quarter FY85</u>	<u>Cumulative obligations since inception</u>
Albuquerque:				
Univ. of California	1	\$ 2,810,565	\$ 0	\$ 28,771,464
Western Electric Co., Inc.	1	4,672,948	189,000	50,718,722
Others	<u>4</u>	<u>29,683</u>	<u>0</u>	<u>340,810</u>
Total	<u>6</u>	<u>7,513,196</u>	<u>189,000</u>	<u>79,830,996</u>
Chicago:				
Battelle Memorial Institute	3	27,490,000	5,215,600	209,074,847
Fluor Engineers & Construction	1	2,227,732	0	15,976,000
University of Texas	3	1,029,900	300,000	6,876,100
Others	<u>27</u>	<u>1,325,394</u>	<u>1,286,131</u>	<u>11,785,368</u>
Total	<u>34</u>	<u>32,073,026</u>	<u>6,801,731</u>	<u>243,712,315</u>
Idaho:				
Others	<u>4</u>	<u>351,907</u>	<u>807,000</u>	<u>3,953,143</u>
Total	<u>4</u>	<u>351,907</u>	<u>807,000</u>	<u>3,953,143</u>
Nevada:				
Department of the Interior ^a	1	2,278,740	0	21,898,000
Reynolds Electric & Energy	2	1,369,842	-299,587	32,909,791
Science Applications Inc.	1	1,591,649	3,252,844	15,935,844
Others	<u>19</u>	<u>1,302,335</u>	<u>-8,006</u>	<u>13,483,964</u>
Total	<u>23</u>	<u>6,542,566</u>	<u>2,945,251</u>	<u>84,227,599</u>
Oak Ridge:				
Others	<u>6</u>	<u>1,035,088</u>	<u>3,369,676</u>	<u>8,533,874</u>
Total	<u>6</u>	<u>1,035,088</u>	<u>3,369,676</u>	<u>8,533,874</u>
Richland:				
Battelle Memorial Institute	3	4,805,055	5,083,069	39,031,374
Ralph M. Parsons Co.	1	2,588,102	1,510,000	12,525,925
Rockwell Hanford Co.	1	13,153,068	1,880,000	126,007,299
Others	<u>20</u>	<u>1,980,659</u>	<u>61,221</u>	<u>25,159,064</u>
Total	<u>25</u>	<u>22,526,884</u>	<u>8,534,290</u>	<u>202,723,662</u>

APPENDIX VI

APPENDIX VI

<u>DOE operations office contractor name</u>	<u>Total number of contracts</u>	<u>Costs third quarter FY85</u>	<u>Obligations third quarter FY85</u>	<u>Cumulative obligations since inception</u>
San Francisco:				
Univ. of California	2	\$ 2,844,251	\$ 2,658,000	\$ 26,775,060
Others	<u>2</u>	<u>0</u>	<u>0</u>	<u>663,320</u>
Total	<u>4</u>	<u>2,844,251</u>	<u>2,658,000</u>	<u>27,438,380</u>
Headquarters:				
Roy F. Weston, Inc.	1	3,881,112	4,000,000	22,223,172
Others	<u>25</u>	<u>760,708</u>	<u>135,000</u>	<u>4,737,012</u>
Total	<u>26</u>	<u>4,641,820</u>	<u>4,135,000</u>	<u>26,960,184</u>
Total (all contractors)	<u>128</u>	<u>\$ 77,528,738</u>	<u>\$ 29,439,948</u>	<u>\$677,380,153</u>

^aThe Department of the Interior's U.S. Geological Survey is performing on-site work for the Nevada Project Office under contract.

Source: DOE's financial information system.

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