

Defense Environmental Management Privatization

Proposed Appropriation Language

For Department of Energy expenses for privatization projects necessary for atomic energy defense environmental management activities authorized by the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), [\$65,000,000] *\$141,537,000*, to remain available until expended. (*Energy and Water Development Appropriations Act, 2001, as enacted by Section 1(a)(2) of Public Law 106-377.*)

Explanation of Change

None.

Defense Environmental Management Privatization

Program Mission

The U.S. Department of Energy (DOE) began working with the private sector in the 1940s when it contracted to design, construct, and operate the facilities used to build nuclear weapons during the Manhattan Project. During the period of weapons production and in the early years of the Environmental Management (EM) program, the management and operating contract was the Department's typical method of contracting. This mechanism contained very general work scope under which the Department reimbursed essentially all contractor costs while also paying the contractor an additional fee based on either a fixed-fee schedule or, in a few cases, based on a subjective determination of performance (*i.e.*, an award fee). However, in recent years DOE has incorporated many private sector contracting and project management practices and principles into its procurement operations, including competition. For example, all eight of the Environmental Management program facilities management contracts awarded since FY 1994 — that is, EM's management and operations, management and integrating and environmental restoration management contracts — have been competitively-awarded, with five of these major contracts awarded to a contractor other than the incumbent.

In an effort to meet the enormous cleanup challenge, EM began in 1996 to selectively apply *privatization*, an innovative extension of traditional fixed-price contracting. Under privatization, the contractor finances the project and does not receive the contractually specified payments from the government until the projects or services are delivered in accordance with the terms of the contract. The Office of Environmental Management views this approach as an important means of leveraging both market forces and private industry expertise to improve technical and schedule performance and reduce the costs of some of its major cleanup projects.

The Office of Environmental Management's objective in utilizing the privatization approach is to gain an edge through private sector best-in-class management capability, business strategies, technological approaches, schedule enhancements, regulatory experience, and cost efficiencies. The Department believes that the privatization program is the most cost-effective methodology for some selected projects. This type of project funding is widely used in the private sector to finance power plants and other capital investments. In addition, shifting substantial performance risk to the contractor provides greater incentives to contractors to complete projects on schedule and within cost. A further advantage of the EM privatization approach is that it requires full life-cycle project planning up front. Accordingly, the use of privatization is expected to result in cleanup being accomplished sooner in comparison to the traditional management and operating contractor approaches, thus supporting the Environmental Management vision of completing substantial cleanup at most EM sites within the next decade.

The Congress supported this approach through authorizing legislation and the establishment of a separate appropriation account for privatization projects. As specified in the National Defense Authorization Act for FY 1998, contracts for EM Privatization projects must meet the following criteria: (1) be awarded on a competitive basis; (2) require the contractor to construct or acquire any equipment or facilities required to carry out the contract; (3) require the contractor to bear any of the costs of the construction, acquisition, operation of such equipment or facilities that arise before the commencement of the provision of goods or services under the

contract; and (4) provide for payment to the contractor under the contract only upon the meeting of performance specifications in the contract.

This program is budgeted for under the Defense Environmental Management Privatization appropriation account. The Defense Environmental Management Privatization request for FY 2002 is \$141,537 million, an increase of \$76,500,000 compared to the appropriation for Privatization in FY 2001. The FY 2002 request is required to continue the following four EM privatization projects: the Oak Ridge Transuranic Waste Treatment Project; the Oak Ridge Environmental Management Waste Management Facility Project; the Idaho Advanced Mixed Waste Treatment Project; and the Idaho Spent Nuclear Fuel Dry Storage Project. Two new projects, referred to as the Paducah Disposal Facility and the Portsmouth Disposal Facility, have been identified for FY 2002. The EM program is continuing to pursue additional projects as candidates for the privatization contracting approach on a case-by-case basis.

Program Goal

The goal of privatization is to accomplish selective EM projects traditionally performed by DOE's Management and Operating/Management and Integrating contractors under cost-plus contracts by using a specialized, fixed-price contracting approach to achieve improved cost, schedule and technical performance.

Program Objectives

- # Reduce the project risk to the government and achieve cleanup more cost-effectively;
- # Provide financial incentives to contractors to substantially reduce EM cleanup costs and accelerate cleanup schedule, while ensuring that an appropriate technical and financial risk/reward balance between DOE and the contractor is maintained; and
- # Continue the active support and commitment to ongoing and future privatization projects aimed at reducing the overall cost and improving the schedule of environmental cleanup activities.

New Starts Scheduled for FY 2002

- # Paducah Disposal Facility - Planning activities initiated in FY 2000 for waste disposal alternatives at the Paducah Gaseous Diffusion Plant will conclude in FY 2002 with a Record of Decision. One alternative being considered is an on-site Comprehensive Environmental Response, Compensation, and Liability Act disposal cell with ancillary facilities to support operations very similar to the Oak Ridge Environmental Management Waste Management Facility. Should this alternative be selected, the proposed project will likely be awarded as a fixed-price, performance-based contract to design, construct, operate, and cap the disposal facility at the Paducah site. The envisioned on-site disposal cell will have an initial capacity of 600,000 cubic yards for near-term remediation waste and will be a Resource Conservation and Recovery

Act compliant, above-grade earthen structure. The cell design will provide expansion capacity for an additional \$2,500,000 cubic yards generated during the future decontamination and decommissioning of the Paducah Facility. Support facilities required for initial operations include those needed for waste staging, temporary storage, and equipment decontamination. An area reserved for future potential expansion would accommodate future facility needs not fully defined at this time.

- # Portsmouth Disposal Facility - An evaluation of environmental alternatives for disposal of wastes generated by site-wide remediation and future decontamination and decommissioning activities at the Portsmouth Gaseous Diffusion Plant is currently in progress. One alternative being considered is construction and operation of an on-site disposal facility at Portsmouth. If on-site disposal is selected as an alternative in a Record of Decision, it would authorize the construction of the facility and reflect the broad stakeholder support for the project. The project would provide for the purchase of waste disposal services from the private vendor for low-level, hazardous, Toxic Substances Control Act defined, and mixed wastes generated at Portsmouth. This project is required to support the Portsmouth Federal Facilities Compliance Agreement and the efficient cost-effective disposal of site-wide wastes. The Disposal Facility will be a Resource Conservation and Recovery Act compliant, above-grade earthen structure.

Significant Accomplishments and Program Shifts

- # **Oak Ridge Transuranic Waste Treatment Project.** In August 1998, the Department awarded, through competitive procurement, a contract for the Transuranic Waste Treatment Project in Oak Ridge, Tennessee to the Foster Wheeler Environmental Corporation. The contract is a fixed-price/fixed-unit price contract for the sum of \$193,600,000 and is to be completed by June 2009, assuming all options of the contract are exercised. The contract was awarded for approximately \$220,000,000 less in Total Estimated Cost than the original Management and Operating contractor estimate. Facility construction is expected to start in the second quarter of FY 2001.
- # **Oak Ridge Environmental Management Waste Management Facility.** In December 1999, following the issuance of the Record of Decision and submittal of the Privatization Project report to Congress, a fixed-price, performance-based contract was awarded to Waste Management Federal Services, Inc for the design, construction, operation and capping of the Environmental Management Waste Management Facility at the Oak Ridge Reservation. Based on the contract pricing for capital construction of the initial 400,000 cubic yard facility, project costs were significantly reduced. In FY 2002, contractor financed capital costs for design and construction will be reimbursed during the first six months of disposal operations. Construction of the Environmental Management Waste Management Facility Project is expected to begin in the second quarter of FY 2001.
- # **Idaho Advanced Mixed Waste Treatment Project.** The Department authorized British Nuclear Fuels, Limited, to commence facility construction of the Advanced Mixed Waste Treatment Project, Idaho Falls, Idaho, in FY 1999. Site mobilization activities were also performed in FY 1999. However, in September 1999, two private organizations filed suit against the Department in an attempt to halt progress on the Advanced Mixed Waste Treatment Project. The complaint alleged: (1) violations of the National Environmental Policy Act for failure to give adequate public notification and opportunity to comment in

Wyoming, and (2) an inappropriate procurement process, with inadequate public notification and involvement, resulting in the award of the privatized contract to British Nuclear Fuels Limited. A Settlement Agreement on the lawsuit was reached on March 26, 2000. On March 27, 2000, the Secretary of Energy announced his decision to proceed with a revised plan to build the Advanced Mixed Waste Treatment Project facility. As part of this decision, the Secretary put on hold plans to build the incinerator component of the facility. This decision allows DOE to continue making progress toward meeting its obligation to Idaho to remove 65,000 m³ of waste from the State in accordance with the 1995 Settlement Agreement and Consent Order. This allowed the Department, upon issuance of required permits, to begin construction of a majority of the Advanced Mixed Waste Treatment Project facility to process most of the site's existing stored transuranic waste and alpha mixed low-level waste. As part of this effort, the Department established a "blue ribbon panel" of experts to identify and examine possible technological alternatives to incineration. The panel performed its evaluation during FY 2000 and provided its report to the Secretary in December 2000. The report identified promising technologies and recommended further testing and evaluation. In parallel, DOE is pursuing regulatory options that may make treatment of the small quantity of remaining material unnecessary.

- # **Idaho Spent Nuclear Fuel Dry Storage Project.** The Department awarded a contract to Foster Wheeler Environmental Corporation on May 19, 2000, for the Spent Nuclear Fuel Dry Storage project at Idaho Falls, Idaho. The contract scope includes the design, licencing, permitting, construction, and operation of a Dry Transfer Facility and an Independent Spent Fuel Storage Installation. The estimated capital cost of the project is \$221,435,000. This estimate is based on the selected contractors proposed price of \$181,048,000 plus \$40,387,000 for incentives for early completion, economic price adjustments, and risks that remain with DOE consistent with the terms of the contract. The Nuclear Regulatory Commission license application for the Spent Nuclear Fuel Dry Storage Project will be submitted in the first quarter of FY 2002.
- # **Remote-Handled Transuranic Waste Transportation Services Project.** On August 14, 2000, the Department awarded a privatization contract for Project 99-PVT-1 for the fabrication of a first-of-a-kind shipping container (RH-72B) for the shipment of remote-handled transuranic waste to the Waste Isolation Pilot Plant. Funding for this project was provided in FY 1999. This project was awarded on a competitive basis and requires the contractor to secure funding for startup costs. There are no progress payments and funding will not be provided to the vendor until casks are delivered that meet the technical requirements specified by the Nuclear Regulatory Commission. By using the privatization approach, DOE can shift most of the risk to the vendor. The Department anticipates receipt of the first RH-72B cask in September 2001.

Funding Profile

(dollars in thousands)

	FY2000 Comparable Appropriation	FY 2001 Original Appropriation	FY 2001 Adjustments	FY 2001 Comparable Appropriation	FY 2002 Request
Privatization	126,609	90,092	0	90,092	141,537
Subtotal, Privatization	126,609	90,092	0	90,092	141,537
Use of prior year balances	-44,000	-25,092	0	-25,092	0
Rescission of prior appropriations	0	-97,000	0	-97,000	0
Total, Privatization	82,609	-32,000	0	-32,000	141,537

Public Law Authorization:

Public Law 95-91, "Department of Energy Organization Act (1977)"

Public Law 103-62, "Government Performance and Results Act of 1993"

Public Law 106-377, "The Energy and Water Development Appropriations Act, 2001"

Public Law 106-398, "The National Defense Authorization Act for Fiscal Year 2001"

Funding by Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	\$ Change	% Change
Idaho Operations Office	114,646	90,092	89,332	-760	-0.8%
Oak Ridge Operations Office	11,963	0	52,205	52,205	>999.9%
Subtotal, Privatization	126,609	90,092	141,537	51,445	57.1%
Use of prior year balances	-44,000	-25,092	0	25,092	-100.0%
Rescission of prior appropriations	0	-97,000	0	97,000	-100.0%
Total, Privatization	82,609	-32,000	141,537	173,537	542.3%

Detailed Program Justification

(dollars in thousands)

FY 2000	FY 2001	FY 2002
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ID-WM-104 / Advanced Mixed Waste Treatment Project; Idaho

Falls, Idaho	109,661	65,000	40,000
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This project has been in development at the Idaho National Engineering and Environmental Laboratory since 1993. A contract was awarded to British Nuclear Fuels, Limited on December 20, 1996, for the retrieval, sorting, characterization, storage, pre-treatment, treatment, certification, and loading for transportation of 65,000 cubic meters of alpha and transuranic mixed waste located in retrievable storage at the Idaho National Engineering and Environmental Laboratory Radioactive Waste Management Complex. The contract has an option for treatment of up to 120,000 cubic meters of additional DOE mixed wastes. The project scope is to treat Idaho National Engineering and Environmental Laboratory transuranic and alpha mixed waste, as well as other DOE mixed waste in the complex, through a private sector treatment facility located at the Idaho National Engineering and Environmental Laboratory.

The primary wastes to be treated are DOE laboratory and process wastes generated at Rocky Flats and various DOE facilities. These wastes are currently stored in drums, boxes and bins at the Idaho National Engineering and Environmental Laboratory Transuranic Storage Area of the Radioactive Waste Management Complex.

The wastes consist of a heterogeneous mixture of solid materials including paper, cloth, rubber, plastic, glass, graphite, bricks, concrete, metal, nitrate salts, process sludges, miscellaneous components, and some absorbed liquids. Some wastes also contain Toxic Substance and Control Act regulated materials such as polychlorinated biphenyls. No more than 4,100 kilograms of elemental mercury, and approximately 2.1 million kilograms of lead is expected in the 65,000 cubic meters.

This project is necessary to meet the requirement in the October 1995, Idaho Settlement Agreement to ship all transuranic waste out of Idaho by the target year of 2015 and no later than 2018. It is also necessary to meet site treatment plan milestones under the Federal Facility Compliance Act. The transuranic waste will be disposed at the Waste Isolation Pilot Plant near Carlsbad, New Mexico. Non-transuranic wastes that are not allowed to be disposed at Waste Isolation Pilot Plant (e.g., low-level and mixed wastes) will be disposed in accordance with applicable requirements.

(dollars in thousands)

FY 2000	FY 2001	FY 2002
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The Advanced Mixed Waste Treatment Project is a privatized, fixed-price contract and will be performed in three phases. Phase I consists of facility permitting, preliminary facility/process design, and establishing the facility safety basis. Phase II consists of final facility/process design, facility construction, and testing. Phase III consists of facility operations, Resource Conservation and Recovery Act closure, and decontamination and decommissioning. The service provided by the contractor shall treat waste to meet Resource Conservation and Recovery Act Land Disposal Restrictions (except for waste that is certified for disposal at the Waste Isolation Pilot Plant), Toxic Substance and Control Act requirements, and Waste Isolation Pilot Plant Waste Acceptance Criteria. Transportation support for shipment of the waste from the Idaho National Engineering and Environmental Laboratory to the Waste Isolation Pilot Plant is required and will be performed under a separate Waste Isolation Pilot Plant-managed contract.

In accordance with the Idaho Settlement Agreement, facility construction will be complete by December 31, 2002, and operations will commence no later than March 31, 2003. Shipments of waste from the Advanced Mixed Waste Treatment Project are expected to begin in the second quarter of FY 2003.

Funding requested through FY 2002 will provide for the physical construction phase (including advance procurement of major equipment) of this project. These funds will cover the remote possibility of termination of the contract and will eventually be used to reimburse capital expenditures after service commences. The current schedule is to complete construction of the Advanced Mixed Waste Treatment Project in the fourth quarter of FY 2002 and begin retrieval operations in the first quarter of FY 2003.

Metrics

No quantifiable corporate performance measures are associated with this project.

OR-364 / Transuranic Waste Treatment; Oak Ridge, Tennessee 11,963 0 10,826

A fixed price contract was awarded by DOE-Oak Ridge Operations Office to Foster Wheeler Environmental Corporation in August 1998. This contract consists of four phases. Phase I (Licensing and Permitting) consists of obtaining all necessary licenses and permits and designing the facility, and will be funded from the base program. Phase II will consist of construction of the treatment system and any pre-testing required by the Waste Isolation Pilot Plant, Nevada Test Site, or the regulatory agencies, and is funded by the Privatization program. Phase III will consist of removal of sludge waste from the tanks and treatment of sludge and solid waste in the licensed/permitted facility. Phase IV will consist of decontamination and decommissioning.

The FY 2002 request is to provide contingency funding during construction. This will avoid impact on construction completion schedule due to unknown events that may occur during construction (e.g., differing site conditions, changes in federal laws). Start construction of the Oak Ridge Transuranic Waste Treatment Project in the first quarter of FY 2001.

(dollars in thousands)

FY 2000	FY 2001	FY 2002
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Metrics

No quantifiable corporate performance measures are associated with this project.

ID-SNF-105 / Spent Nuclear Fuel Dry Storage; Idaho Falls,

Idaho	4,985	25,092	49,332
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The Spent Nuclear Fuel Dry Storage Project will provide Nuclear Regulatory Commission-licensed interim dry storage of three types of Spent Nuclear Fuel at the Idaho National Engineering and Environmental Laboratory. The fuel currently resides in facilities at the Idaho National Engineering and Environmental Laboratory, at various universities, and at foreign research reactors.

This project includes the following services:

- # Design and Nuclear Regulatory Commission license for a Spent Nuclear Fuel dry transfer and storage facility (the contractor is the licensee.) The License application which includes the Safety Analysis Report and Environmental Report, among others, will be submitted in FY 2002.
- # Conceptual design for a Nuclear Regulatory Commission licensed transportation system to transfer the Spent Nuclear Fuel out of Idaho.
- # Dry Transfer Capability to allow cask receipt from the Management and Operations Contractor and dry transfer of Spent Nuclear Fuel assemblies into standard dry storage canisters. The standard canisters are designed for storage in a future federal repository.
- # Independent Spent Fuel Storage Installation as defined by Nuclear Regulatory Commission license.
- # Loading of the designated fuels into the Independent Spent Fuel Storage Installation.
- # Operation of Dry Transfer Facility and Independent Spent Fuel Storage Installation in accordance with the contractor's Nuclear Regulatory Commission license conditions through mid-FY 2010.

The dry transfer and interim storage facilities may also be used to transfer other DOE-owned Spent Nuclear Fuel to dry storage. The need for Spent Nuclear Fuel transfer capability spans 35 years.

An October 17, 1995, Federal court-ordered agreement between the State of Idaho, DOE, and the Navy directs that all spent nuclear fuel will be out of wet storage by 2023 and shipped out of the State of Idaho by January 1, 2035.

Metrics

Submit the NRC license application for the Idaho Spent Nuclear Fuel Dry Storage Project in the first quarter of FY 2002.

(dollars in thousands)

FY 2000	FY 2001	FY 2002
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OR-174 Environmental Management / Waste Management

Disposal; Oak Ridge, Tennessee 0 0 26,050

The project provides on-site waste disposal services from a private vendor for low-level, hazardous, Toxic Substance and Control Act defined, and mixed wastes generated at Oak Ridge. This project is required to support the Oak Ridge Federal Facilities Agreement and the efficient cost-effective disposal of site-wide Comprehensive Environmental Response, Compensation, and Liability Act wastes.

Cleanup, decontamination and decommissioning projects at Oak Ridge are expected to produce significant volumes of contaminated soils and debris in need of permanent disposal. This project provides for creation of an on-site disposal facility with a capacity of up to 2,000,000 cubic yards (1,530,000 cubic meters) of waste. A Record of Decision was approved in November 1999, authorizing the construction of the facility and reflecting the broad stakeholder support for the project. In December 1999, a fixed-price contract was awarded by Bechtel Jacobs (the Oak Ridge Management and Integrating contractor) to Waste Management Federal Services, Incorporated to complete the design, construction, operation, and closure of the initial 400,000 cubic yard disposal facility. The FY 2002 request includes funds to accommodate classified waste disposal, expand the facility capacity from 400,000 to 1,200,000 cubic yards and provide contingency funding during construction. Start construction of the Oak Ridge Environmental Management Waste Management Facility in the second quarter of FY 2001.

Metrics No quantifiable corporate performance measures are associated with this project.

OR-574 / Paducah Disposal Facility Privatization: Paducah,

Kentucky 0 0 13,329

An environmental evaluation of site-wide waste disposal alternatives is currently in progress and will result in a Record of Decision in FY 2002. One alternative being evaluated is to construct an on-site Comprehensive Environmental Response, Compensation, and Liability Act cell. Should the on-site cell alternative be selected in the Record of Decision, it would authorize the construction of the facility and reflect the broad Stakeholder support for the project.

The project provides for the purchase of waste disposal services from a private vendor for low-level, hazardous, Toxic Substance and Control Act defined, and mixed wastes generated at Paducah. This project is required to support the Paducah Federal Facilities Agreement and the efficient cost-effective disposal of site-wide Comprehensive Environmental Response, Compensation, and Liability Act wastes.

(dollars in thousands)

FY 2000	FY 2001	FY 2002
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Cleanup and future decontamination and decommissioning projects at Paducah are expected to produce significant volumes of contaminated soils and debris in need of permanent disposal. This project provides for creation of an on-site disposal facility with an initial capacity of 600,000 cubic yards of waste and future expansion capacity for an additional 2,500,000 cubic yards for decontamination and decommissioning wastes. The procurement strategy is to compete and award a fixed-price contract to design, construct, operate, and close the initial 600,000 cubic yard disposal facility. The FY 2002 request includes funds to initiate the procurement process, award the contract, and initiate design of the disposal facility.

Metrics
 No quantifiable corporate performance measures are associated with this project.

OR-674 / Portsmouth Disposal Facility: Portsmouth, Ohio 0 0 2,000

The envisioned on-site disposal of waste at Portsmouth consists of a disposal cell with ancillary facilities to support operations. The base disposal cell will have an initial capacity of 3,400,000 cubic yards and will be broken into cell sectors for incremental placement of decontamination and decommissioning waste. The Disposal Facility will be a Resource Conservation and Recovery Act compliant, above-grade earthen structure. The facility design will provide expansion capacity for an additional 2,500,000 cubic yards generated during final decontamination and decommissioning of Portsmouth facilities. Support facilities required for initial operations include areas for waste staging, temporary storage, and equipment decontamination.

Reviews were performed of the Oak Ridge, Fernald, and Weldon Springs disposal cells to obtain lessons learned and to develop a preliminary cost estimate for the Portsmouth Disposal Facility. The estimated cost was derived by identifying the common operating and capital cost for each facility and dividing by the facility's volume capacity to get a unit cost per volume estimate. The unit cost estimates were then averaged and multiplied by the site-specific volume capacity to obtain the cost basis for the Portsmouth Disposal Facility. In addition, site-specific costs for support facilities and infrastructure were estimated and added to the cost basis to obtain the total estimated project costs. A combination of privatization and operating funds will be used to make payments to the vendor for the contractually required placing of material in the Disposal Facility.

Total, Privatization	126,609	90,092	141,537
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Explanation of Funding Changes from FY 2001 to FY 2002

FY 2002 vs. FY 2001 (\$000)

ID-WM-104 / Advanced Mixed Waste Treatment Project; Idaho Falls, Idaho

Continues the requisite incremental funding for the Advanced Mixed Waste Treatment Project at Idaho Falls, Idaho. -25,000

ID-SNF-105 / Spent Nuclear Fuel Dry Storage; Idaho Falls, Idaho

Increase in the amount required for the Spent Nuclear Fuel Dry Storage Project at in Idaho Falls, Idaho. 24,240

OR-174 Environmental Management / Waste Management Disposal; Oak Ridge, Tennessee

Increased funding for the Environmental Management Waste Management Facility to address design changes for classified waste disposal, expand facility capacity by an additional 800,000 cubic yards, and provide contingency funding during initial facility construction at Oak Ridge, Tennessee 26,050

OR-364 / Transuranic Waste Treatment; Oak Ridge, Tennessee

Increased funding for the Transuranic Waste Treatment project is to provide contingency funding during construction to avoid impacts on construction completion schedule due to unknown events (e.g. differing site conditions, changes in federal law) at Oak Ridge, Tennessee 10,826

OR-574, Paducah Disposal Facility Privatization; Paducah, Kentucky

Increased funding to include addition of new privatization project to construct a 600,000 cubic yard Comprehensive Environmental Response, Compensation, and Recovery Act on-site disposal cell at the Paducah Gaseous Diffusion Plant, Kentucky. 13,329

OR-674 / Portsmouth Disposal Facility; Portsmouth, Ohio

Increased funding to include addition of new privatization project to construct a 3,400,000 cubic yard Resource Conservation and Recovery Act compliant disposal cell at the Portsmouth Gaseous Diffusion Plant, Ohio. 2,000

Total Funding Change, Privatization 51,445

Operating Expense Funded Project Summary

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Approp- riations	FY 2000	FY 2001	FY 2002	Unapprop- riated Balance
02-PVT-1 Paducah Disposal Facility, KY . . .	47,460	0	0	0	13,329	34,131
02-PVT-2 Portsmouth Disposal Facility, OH .	125,000	0	0	0	2,000	123,000
98-PVT-2 Spent Nuclear Fuel Dry Storage, ID	223,563	47,000	4,985	25,092	49,332	97,154
98-PVT-5 Environmental Management/Waste Management Disposal, OR	107,227	19,500	0	0	26,050	61,677
97-PVT-2 Advanced Mixed Waste Treatment Project, ID	569,400	157,252	109,661	65,000	40,000	197,487
97-PVT-3 Transuranic Waste Treatment, OR	87,789	65,000	11,963	0	10,826	0
Subtotal, Operating		N/A	126,609	90,092	141,537	N/A
Use of Prior Year Balances		0	-44,000	-25,092	0	0
Rescission of Prior Appropriations		0	0	-97,000	0	0
Total, Operating Funded Project, Defense Privatization		N/A	82,609	-32,000	141,537	N/A

02-PVT-1, Paducah Disposal Facility; Kentucky

1. Construction Schedule History

Fiscal Quarter				Total Estimate d Cost ^a (\$000)	Total Project Cost ^b (\$000)
A-E Work Initiated	A-E Work Completed	Physical Constructio n Start	Physical Constructio n Complete		

FY 2002 Budget Request (*Preliminary Estimate*)

Base Facility (600,000 cy) FY 2002 FY 2003 FY 2003 FY 2004 47,460 80,429

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations ^a	Obligations	Costs
2002	13,329	4,000	0
2003	14,545	12,937	0
2004	2,000	12,937	7,468
2005	0	0	22,406
2006	0	0	0
2007	0	0	0
2008	0	0	0
2009	17,586	8,793	0
2010	0	8,793	8,793
2011	0	0	8,793
Total	47,460	47,460	47,460

^a These estimates are preliminary. Conceptual design have not been completed and may affect the final estimates. The Total Estimated Cost as defined here is the value the Department of Energy has established for the capital investment by the private sector. It is the basis for the Privatization request. This Total Estimated Cost/Total Project Cost is for the first phrase of 600,000 cubic yards of disposal capacity.

^b For multi-year funded projects, appropriation is needed a year ahead of contract commitments to preclude antideficiencies.

3. Project Description, Justification and Scope

An environmental evaluation of alternatives for disposal of wastes generated by site-wide remediation activities at Paducah is currently in progress and will result in a Record of Decision in FY 2002. One alternative being considered is the construction and operation of an on-site Disposal Facility in Paducah. If on-site disposal is the selected alternative in a Record of Decision, it would authorize the construction of the facility and reflect the broad stakeholder support for the project. The project would provide for the purchase of waste disposal services from the private vendor for low-level, hazardous, Toxic Substances Control Act defined, and mixed wastes generated at Paducah. This project is required to support the Paducah Federal Facilities Agreement and the efficient cost-effective disposal of site-wide Comprehensive Environmental Response, Compensation, and Liability Act wastes.

The envisioned on-site disposal of the Comprehensive Environmental Response, Compensation, and Liability Act waste at Paducah consists of a disposal cell with ancillary facilities to support operations. The base disposal cell will have an initial capacity of 600,000 cubic yards for near-term remediation waste and will be a Resource Conservation and Recovery Act-compliant, above-grade earthen structure. The cell design will provide expansion capacity for an additional 2,500,000 cubic yards generated during future decontamination and decommissioning of the Paducah Facility. Based on projected waste volumes of 600,000 cubic yards and cell design assumptions, the disposal cell is estimated to require 43 acres. Expanding the disposal cell to 3,100,000 cubic yards to accommodate the decontamination and decommissioning waste at some future time would require 79 acres. Addition of acreage for perimeter road and support facilities would require a 70-acre footprint for 600,000 cubic yards and 110-acre footprint for 3,100,000 cubic yards.

Support facilities required for initial operations include those needed for waste staging, temporary storage, and equipment decontamination. An area reserved for future potential expansion would accommodate future facility needs not fully defined at this time.

Based on successful experience at other facilities, DOE expects the on-site Disposal Facility to offer several benefits. On-site disposal capacity will streamline and expedite cleanup activities resulting in the potential for acceleration of overall site cleanup schedule by two years and consolidation of buried waste to reduce the total footprint of restricted land use. The large volumes of waste from the remediation of PGDP are expected to make off-site transportation and disposal costs significantly higher than on-site disposal costs. Consolidation of waste management and disposal activities as opposed to capping multiple, discrete waste units in place with continued maintenance and institutional controls will reduce the future mortgage for the Plant. This project also permits the efficient completion of numerous site projects within the current budget caps.

Reviews were performed of the Oak Ridge, Fernald, and Weldon Spring disposal cells to obtain lessons learned and to develop a preliminary cost estimate for the Paducah Disposal Facility. The estimated cost was derived by identifying the common operating and capital cost for each facility and dividing by the facility's volume capacity to get a unit cost per volume estimate. The unit cost estimates were then averaged and multiplied by the site-specific volume capacity to obtain the cost basis for the Paducah Disposal Facility. In addition, site-specific cost for support facilities and infrastructure were estimated and added to the cost basis to obtain the total estimated project cost.

4. Details of Cost Estimate

(dollars in thousands)		
	Current Estimate	Previous Estimate
Design Phase		
Design for the Paducah Disposal Facility	3,520	0
Total, Design Costs	3,520	0
Construction Phase		
Construction costs for the initial 600,000 cy Paducah Disposal Facility	21,796	0
Capping/Closure costs for the initial Paducah Disposal Facility	14,904	0
Total, construction costs	36,700	0
Contingencies	7,240	0
Total, line item costs (TEC) (600,000 cy facility)	47,460	0

5. Method of Performance

The Department of Energy will develop the performance specifications for the facility to minimize design, construction, and operational uncertainties, and avoid unnecessary constraints. The Department has developed a preliminary funding approach to construct an on-site Disposal Facility without impacting the remediation it is intended to support. The Department will pursue privatization of the facility, similar to the Oak Ridge Environmental Management Waste Management Facility Privatization Project, by purchasing disposal services from a private sector vendor. The project will likely be implemented as a subcontract to DOE's Management and Integration Contractor, Bechtel Jacobs Company LLC. The preliminary procurement strategy is to competitively award a fixed price/fixed unit rate subcontract that utilizes subcontractor financing for design, construction, and closure of the facility. This subcontracting approach allows for the transfer of a large portion of the risks associated with project performance from the Management and Integration contractor to the subcontractor until such time as the facility construction is complete and approved for acceptance of waste.

The combination of the privatization funds and operating funds will be used to make payments to the vendor for the contractually required placing of material in the Disposal Facility. Repayment of the subcontractor's capital cost of completing the design, preparing the site, and constructing the facility will begin once actual disposal operations have commenced. The FY 2002 request includes funds to initiate the procurement process, award the contract, initiate design of the disposal facility, and obligate a portion of the construction funds needed in FY 2003. The project design will be completed in FY 2003 and construction of utilities, roads, and support facilities for the disposal cell will be completed. Construction of the 600,000 cubic yard cell will be completed and ready for operation in FY 2004. Contractor financed capital costs for design and construction will be reimbursed in FY 2004. The cell is expected to remain open through 2010 and closed in 2011.

As the regulatory process leading to cleanup decisions continues, the possible need for additional disposal capacity will become better defined. Subsequent requests for budget authority to fund facility expansion will be developed, sufficiently in advance, to accommodate the procurement, design, and construction schedules. Upon completion of the landfill cap and closing, DOE will assume ownership of the Disposal Facility and Long Term Surveillance and Maintenance will be funded under the Long Term Stewardship subproject.

In compliance with DOE Order 413.3, an External Independent Review of the entire project, including an Independent Cost Estimate, will be performed to verify that the mission need is satisfied, validate the proposed technical cost and schedule baseline, and assess the overall status of the project management and control system.

The Paducah Disposal Facility is an excellent candidate for privatization for the following reasons:

- # the scope of the project can be adequately defined for a fixed price/fixed unit price contract for design, construction, and operations;
- # the technical process involved is well-known and poses low risk to the contractor and to DOE;
- # the total estimated capital investment is consistent with that of the other sites;
- # makes greater use of the disposal technologies, demonstrated efficiencies, and management discipline of private industry; and
- # the large, early capital investment required to construct the facility will be provided by the selected private sector vendor which allows DOE to spread the budget outlay over several years.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2000	FY 2001	FY 2002	Outyears	Total
Project cost						
Facility cost						
Payments to Vendors (600,000 facility)		0	0	0	0	47,460
Total facility costs (Federal and Non-Federal)		0	0	0	0	47,460
Other project costs						
Payments to Vendors ^a						
Initial 600,000 cy facility		0	0	0	0	22,286
Facility Support - Management and Integration Support/Other		0	0	0	530	10,153
Total other project costs		0	0	0	530	32,439
Total project costs (TPC) ^b		0	0	0	530	79,899
		0	0	0	530	80,429

7. Related Annual Funding Requirements

(dollars in thousands)

	Current Estimate	Previous Estimate
Given the nature of the privatization contract, these operating costs are shown as part of the Total Project Cost	0	0
Total related annual funding	0	0

^a Facility operations payments to vendors include outyear operations.

^b The Total Project Cost as defined here is the combined value DOE believes will be necessary to pay for the products or services contractually agreed upon plus other support costs. It includes Privatization costs (TEC), operations costs, and management and integration support.

02-PVT-2, Portsmouth Disposal Facility; Ohio

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost (\$000)	Total Project Cost (\$000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2002 Budget Request (<i>Preliminary Estimate</i>)	2Q 2002	4Q 2003	3Q 2004	4Q 2011	125,000 ^a	300,000 ^a
(3,400,000 cubic yards) ^b						

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
2002	2,000	0	0
2003	3,000	5,000	0
2004	20,000	20,000	0
2005	20,000	20,000	41,000
2006	20,000	20,000	18,000
2007	15,000	15,000	16,000
2008	15,000	15,000	16,000
2009	10,000	10,000	12,000
2010	10,000	10,000	11,000
2011	10,000	10,000	11,000
Total	125,000	125,000	125,000

^a These estimates are preliminary. Conceptual designs have not been completed and may affect the final estimates. The Total Estimated Cost as defined here is the value the Department of Energy has established for the capital investment by the private sector. It is the basis for the Privatization request.

^b This Total Estimated Cost/Total Project Cost is for the first phase of the on-site remediation facility (3,400,000 cubic yards of waste).

3. Project Description, Justification, and Scope

An evaluation of environmental alternatives for disposal of wastes generated by site-wide remediation and future decontamination and decommissioning activities at the Portsmouth Gaseous Diffusion Plant is currently in progress. One alternative being considered is construction and operation of an on-site disposal facility at the Portsmouth Gaseous Diffusion Plant. If on-site disposal is selected as an alternative in a Record of Decision, it would authorize the construction of the facility and reflect the broad stakeholder support for the project. The project would provide for the purchase of waste disposal services from the private vendor for low-level, hazardous, Toxic Substances Control Act defined, and mixed wastes generated at the Portsmouth Gaseous Diffusion Plant. This project is required to support the Portsmouth Gaseous Diffusion Plant Federal Facilities Compliance Agreement and the efficient cost-effective disposal of site-wide wastes.

The envisioned on-site disposal of waste at the Portsmouth Gaseous Diffusion Plant consists of a disposal cell with ancillary facilities to support operations. The base disposal cell will have an initial capacity of 3,400,000 cubic yards and will be broken into cell sectors for incremental placement of decontamination and decommissioning waste. The Disposal Facility will be a Resource Conservation and Recovery Act compliant, above-grade earthen structure. The facility design will provide expansion capacity for an additional 2,500,000 cubic yards generated during final decontamination and decommissioning of Portsmouth facilities. Based on the projected waste volumes of 3,400,000 cubic yards and cell design assumptions, the disposal cell is estimated to require 78 acres. Expanding the disposal cell to 5,900,000 cubic yards to accommodate the remaining 2,500,000 cubic yards of final decontamination and decommissioning waste would require an estimated total facility need of 135 acres. Support facilities required for initial operations include areas for waste staging, temporary storage, and equipment decontamination. These working areas would require an additional 25 acres during full operation of facility.

Based on successful experience at other facilities, DOE expects the on-site disposal facility to offer several benefits. On-site disposal capacity will streamline and expedite cleanup activities resulting in the potential for acceleration of overall site cleanup schedule and consolidation of buried waste to reduce the total footprint of restricted land use. The large volumes of waste from the remediation of the Portsmouth Gaseous Diffusion Plant are expected to make off-site transportation and disposal costs significantly higher than on-site disposal costs. Consolidation of waste management and disposal activities as opposed to capping multiple, discrete waste units in place with continued maintenance and institutional controls will reduce the future mortgage for the Plant. This project also permits the efficient completion of numerous site projects within the current budget caps.

Reviews were performed of the Oak Ridge, Fernald, and Weldon Springs disposal cells to obtain lessons learned and to develop a preliminary cost estimate for the Portsmouth Gaseous Diffusion Plant Disposal Facility. The estimated cost was derived by identifying the common operating and capital cost for each facility and dividing by the facility's volume capacity to get a unit cost per volume estimate. The unit cost estimates were then averaged and multiplied by the site-specific volume capacity to obtain the cost basis for the Portsmouth Gaseous Diffusion Plant Disposal Facility. In addition, site-specific costs for support facilities and infrastructure were estimated and added to the cost basis to obtain the total estimated project costs.

4. Details of Cost Estimate

(dollars in thousands)		
	Current Estimate	Previous Estimate
Design Phase		
Design for the Portsmouth Gaseous Diffusion Plant Disposal Facility	7,500	0
Total, Design Costs	7,500	0
Construction Phase		
Construction costs for the Portsmouth Gaseous Diffusion Plant Disposal Facility	97,500	0
Capping/Closure costs for the Portsmouth Gaseous Diffusion Plant Disposal Facility . .	20,000	0
Total, Construction Costs	117,500	0
Contingencies	0	0
Total, Line-Item Costs (TEC)	125,000	0

5. Method of Performance

The Department of Energy will develop the performance specifications for the facility to minimize design, construction, and operational uncertainties, and avoid unnecessary constraints. The Department has developed a preliminary funding approach to construct an on-site disposal facility without impacting the remediation it is intended to support. The Department will pursue privatization of the facility, similar to the Oak Ridge Environmental Management Waste Management Facility Privatization Project, by purchasing disposal services from a private sector vendor. The project will likely be implemented as a subcontract to DOE's Management and Integration Contractor, Bechtel Jacobs Company, LLC. The preliminary procurement strategy is to competitively award a fixed price/fixed unit rate subcontract that utilizes subcontractor financing for design, construction, and closure of the facility. This subcontracting approach allows for the transfer of a large portion of the risks associated with project performance from the management and integration contractor to the subcontractor until such time as the facility construction is complete and approved for acceptance of waste.

The combination of the privatization and operating funds will be used to make payments to the vendor for the contractually required placing of material in the Disposal Facility. Payment of the subcontractor's capital cost of completing the design, preparing the site, and constructing the facility will be invoiced through subcontractor pay items and payments made as task are completed. Operational funding will be required as operational placement begins and the vendor is placing contractually required quantities as specified by the waste generators and approved through the management and integration contractor. The FY 2002 request includes operating funds to initiate the Environmental Impact Statement and begin the approval process with the Regulators. Design and construction of the disposal facility cannot begin until Environmental Impact Statement has been approved and all issues regarding Waste Acceptance Criteria and Record of Decision have been resolved with the Regulators.

A portion of funds could be obligated in FY 2003 for subcontract award. The project design, site preparation, construction of utilities, roads, and support facilities for the disposal facility will be completed in FY 2004. Construction of the cell will be initiated in FY 2004 and ready for operational placement in FY 2005. Construction of the facility is broken into three phases: Phase I will allow for placement of the initial equipment removal from early decontamination and decommissioning activities for Above Grade Debris. The Above Grade Debris is identified as all equipment and any portion of a facility structure above normal grade and above the slabs. All the basements, underground piping, concrete slabs and contaminated soils below and around slabs are considered Below Grade Debris. Phase II is initiated, as the Gaseous Diffusion Process is fully shutdown and dismantling of process buildings can begin. Phase III is initiated as the buildings are dismantled and the slabs, soils, pits and basements are available for excavation, Phase III is ran in parallel with Phase II and is completed in conjunction with Phase II. It is planned, that as a design build, the construction and operation are maintained simultaneously. As a placement sector within the cell is completed, placement will begin and the following sector will be constructed. Capping activities follow the same logic, as a cell sector is filled capping of that sector will begin. Capping is continuous through the life of the construction and placement activities of the project. The cell is expected to remain open from 2004 through 2015 and closed in 2016.

As the regulatory process leading to cleanup decisions continues, the possible need for additional disposal capacity will become better defined. Subsequent requests for budget authority to fund facility expansion will be developed, sufficiently in advance, to accommodate the procurement, design, and construction schedules. Upon completion of the landfill cap and closing, DOE will assume ownership of the Disposal Facility and Long Term Surveillance and Maintenance will be funded under the Long Term Stewardship subproject.

In compliance with DOE Order 413.3, an External Independent Review of the entire project, including an Independent Cost Estimate, will be performed to verify that the mission need is satisfied, validate the proposed technical cost and schedule baseline, and assess the overall status of the project management and control system.

The Portsmouth Gaseous Diffusion Plant Disposal Facility is an excellent candidate for privatization for the following reasons:

- # the scope of the project can be adequately defined for a fixed price/fixed unit rate price contract for the design, construction, and operation phases;
- # the technical process involved is well-known and poses low risk to the contractor and to DOE;
- # the total estimated capital investment is consistent with that of other sites;
- # makes greater use of the disposal technologies, demonstrated efficiencies, and management disciplines of the private industry, and;
- # the large, early capital investment required to construct the facility will be provided by the selected private sector vendor, which allows DOE to spread the budget outlay over several years.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project cost						
Facility cost						
Payments to Vendors	0	0	0	0	125,000	125,000
Total facility costs (Federal and Non-Federal)	0	0	0	0	125,000	125,000
Other project costs						
Payments to Vendors ^a						
Facility Support - Management and Integrating/Other	0	2,000	8,000	15,000	150,000	175,000
Total other project costs	0	2,000	8,000	15,000	150,000	175,000
Total project costs ^b	0	2,000	8,000	15,000	275,000	300,000

7. Related Funding Requirements

(dollars in thousands)

	Current Estimate	Previous Estimate
Given the nature of the privatization contract, these operating costs are shown as part of the Total Project Costs	0	0
Total related annual funding	0	0

^a Facility operations payments to vendors include outyear operations.

^b The Total Project Cost as defined here is the combined value the Department of Energy believes necessary to pay for the products or services contractually agreed upon plus other support costs. It includes Privatization costs (TEC), operations costs, and management and integration support for completion of an Environmental Impact Statement, all activities required in support of the Waste Acceptance Criteria, and negotiations through the Record of Decision process.

98-PVT-2, Spent Nuclear Fuel Dry Storage; Idaho Falls, Idaho

Significant Changes (ID-SNF-105)

The schedule in this data sheet is revised to reflect a delay in the contract award. The Total Estimated Cost and Total Project Cost are revised, consistent with escalation clauses in the contract for Phase II (Construction) and Phase III (Operations), to reflect the revised schedule. The Total Estimated Cost is also revised to reflect risk that remains with the Department of Energy consistent with the terms of the contract.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost (\$000)	Total Project Cost (\$000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 1998 Budget Request (Preliminary Estimate)	N/A		2Q 1999	3Q 2001	87,000	123,831
FY 1999 Budget Request (Preliminary Estimate)	N/A		"	"	87,000	123,831
FY 2000 Budget Request (Preliminary Estimate)	N/A		"	3Q 2003	120,000	163,750 ^a
FY 2001 Budget Request (Current Estimate)	2Q 2000	2Q 2003	2Q 2003	3Q 2004	197,858	245,809
FY 2002 Budget Request (Adjusted Current Estimate)	3Q 2000	4Q 2003	4Q 2003	1Q 2006 ^b	223,563 ^c	273,027 ^d

^a This Total Project Cost estimate was based on a hybrid of the management and operating and U.S. Army Corps of Engineers estimates and significantly underestimated the design and construction costs for a Nuclear Regulatory Commission licensed facility.

^b The contract date for completion of Phase II, including construction and start-up, is December 31, 2005. The contract does not include a date for start of physical construction; the contractor's planned date for construction start is 4Q FY 2003. The contractor's planned date for construction completion is 3Q FY 2005.

^c This Total Estimated Cost estimate is based on the selected contractor's proposed price of \$181,048 in FY 1999 dollars, adjusted by \$42,515 for contract clauses that will increase cost. Contract clauses provide for economic price adjustments (Phase II) and incentive for early completion. The estimate also reflects risk that remains with DOE consistent with the terms of the contract.

^d In addition to the Total Estimated Cost, the Total Project Cost includes contract costs for Phase IB (Licensing) and Phase III (Operations). This Total Project Cost estimate is based on the contractor's proposed price of \$217,409 in FY 1999 dollars adjusted by \$55,618 for the Total Estimated Cost-related adjustments noted in footnote c and for contract clauses that provide for Phase III economic price adjustments.

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Capital (Design and Construction)			
1997	0	0	0
1998	27,000	0	0
1999	20,000	0	0
2000	4,985	51,985	0
2001	25,092	25,092	0
2002	49,332	49,332	74,718
2003	65,399	65,399	0
2004	31,755	31,755	0
2005	0	0	129,211
2006	0	0	19,634
Outyears	0	0	0
Total	223,563	223,563	223,563

The timing of the requested appropriations reflects the funds needed for obligation to the contract in the event the contractor accelerates the project schedule for long-lead procurement and construction. The Spent Nuclear Fuel Dry Storage Project contract is a fixed price contract (with the exception of Phase I-B) with the project schedule and cost profile largely controlled by the contractor. The appropriations total also reflects the fact that the contract contains terms that result in some risk remaining with DOE. Examples of such risk include changes in regulatory requirements, uncertainties associated with the condition of the spent nuclear fuel, and the ability of DOE to make spent nuclear fuel available as required to complete Phase II.

The Spent Nuclear Fuel Dry Storage Project contract allows an economic price adjustment for Contract Phases II, III, and IV. The values in the schedule above include the estimated adjustment for Phase II.

The Spent Nuclear Fuel Dry Storage Project contract includes a provision for an incentive of \$13,000 per day for each day that the start-up of the facility occurs in advance of December 31, 2005. This incentive is more than offset by savings achieved by getting fuel out of old generation storage sooner, due to the high costs associated with those old facilities. If the schedule were advanced 14 months to an October 31, 2004, start-up, the incentive earned would amount to approximately \$5,460,000. The \$5,460,000 is used in the funding projections. In addition to the potential to earn incentive, there is also a provision for assessing liquidated damages in the amount of \$13,000 for each day the facility start-up occurs later than the December 31, 2005, date.

3. Project Description, Justification and Scope

The Spent Nuclear Fuel Dry Storage Project will provide Nuclear Regulatory Commission-licensed interim dry storage of three types of spent nuclear fuel at the Idaho National Engineering and Environmental Laboratory. The fuel currently resides in facilities on the Idaho National Engineering and Environmental Laboratory, at various universities and at foreign research reactors.

This project includes the following services:

- # Design and the Nuclear Regulatory Commission license for a spent nuclear fuel dry transfer and storage facility. (The contractor is the licensee.)
- # Conceptual design for a Nuclear Regulatory Commission licensed transportation system to transfer the spent nuclear fuel out of Idaho.
- # Dry Transfer Capability to allow cask receipt from the management and operating and dry transfer of spent nuclear fuel assemblies into standard dry storage canisters. The canisters are standard canisters designed for storage in a future federal repository.
- # Construction of the Independent Spent Fuel Storage Installation as defined by the Nuclear Regulatory Commission license.
- # Loading of the designated fuels into the Independent Spent Fuel Storage Installation.
- # Operation of the Dry Transfer Facility and the Independent Spent Fuel Storage Installation in accordance with the contractor's Nuclear Regulatory Commission license conditions through April 2010.

An October 17, 1995, Federal court-ordered settlement agreement between the State of Idaho, DOE, and the Navy directs that all spent nuclear fuel will be out of wet storage by 2023 and shipped out of the State of Idaho by January 1, 2035. The Order additionally mandates an appropriation request for fiscal year 1998 for DOE to initiate procurement of dry storage at the Idaho National Engineering and Environmental Laboratory.

The feasibility of modifying existing Idaho National Engineering and Environmental Laboratory facilities to provide these functions was evaluated. It was determined that new facilities would be needed to meet programmatic requirements. Reasons behind this determination include:

- # The cost of modifying current Idaho National Engineering and Environmental Laboratory facilities is not significantly lower than the cost of new facilities.
- # The cost of attempting to obtain a Nuclear Regulatory Commission license for existing Idaho National Engineering and Environmental Laboratory facilities, as well as the associated technical issues of licensing DOE-regulated facilities, would be cost and schedule prohibitive. Note: A determination was made by DOE General Counsel with concurrence from the Nuclear Regulatory Commission that interim fuel storage for these three fuel types, primarily of commercial origin, will be Nuclear Regulatory Commission licensed.
- # The dry transfer and interim storage facilities may be needed to transfer other DOE-owned spent nuclear fuel to dry storage. The need for spent nuclear fuel transfer capability spans 35 years.

The project facilities will be constructed near the Idaho Nuclear Technology and Engineering Center, formerly known as the Idaho Chemical Processing Plant.

The spent nuclear fuel will be delivered to the contractor in a shipping cask from on-site shipments. The contractor will receive, process, and store three selected fuel types that, based on currently available fuel condition data, are believed to be undamaged and have intact cladding. However, these selected fuels may require special handling and treatment to meet the Nuclear Regulatory Commission requirements for placement in an Independent Spent Fuel Storage Installation.

Waste generated by fuel transfer operations should be minimized, but process generated waste stream disposal shall be the responsibility of the contractor. The fuel will not be disposed of in Idaho and fuel disposal is not within the scope of this contract. The contract mandates the use of the preliminary design specifications for standardized Spent Nuclear Fuel canisters that are acceptable to the repository.

The funding request covers design and license application preparation, construction costs of the dry transfer facility, procurement of the storage canisters, and the dry storage system. Upon completion of the fixed price design and license application deliverable, which includes acceptance of the license application by the Nuclear Regulatory Commission, a single payment will be made from the privatization account for Phase I-A. The cost plus fixed fee effort during the period the Nuclear Regulatory Commission is reviewing the license application and until they issue the license, will be paid monthly from the operation account. The fixed price construction of the facilities will be amortized over the first 800 units of spent fuel processed and paid out of the privatization account at fixed unit prices when the fuel is successfully placed in the Nuclear Regulatory Commission licensed Independent Spent Fuel Storage Installation. Also, if it would become necessary, the funds appropriated for design, licensing, and construction must be available from privatization funds to cover termination of the contract for the convenience of the Government.

The estimated capital cost of the project (\$223,600,000) is based on the actual contract price (including an estimate of earned incentive, escalation, and risk that remains with DOE) and is supported by the independent government cost estimate prepared by the U. S. Army Corps of Engineers. Due to estimates of overall time frames to design, license and construct the facility, the contract start-up schedule was established as December 31, 2005. The contract contains an incentive for earlier start of operation as well as a provision for assessing liquidated damages in the event of a delay.

In addition to the privatization request, a total of approximately \$49,500,000 will be provided from the Defense Environmental Restoration and Waste Management Appropriation to make payments for the Nuclear Regulatory Commission licensing support, dry transfer and interim storage operations.

Other costs to DOE will include support activities required by the Idaho National Engineering and Environmental Laboratory Management and Operations contractor to provide support to DOE and deliver spent nuclear fuel to the successful vendor in the out-years. The cost of these activities is included in the budget plans for the Idaho National Engineering and Environmental Laboratory Management and Operations Contractor, and is not included in this data sheet.

The project was subject to an external independent project assessment performed by Lockwood Greene Technologies, Inc. in September 1998. A Readiness Review (Task A) was completed and a report containing eight findings was generated. The Department of Energy accepted the report's recommendations and developed a Task A Corrective Action Plan. All findings have been closed except approval of the Project Execution Plan. Approval of this plan is expected April 2001.

There are no critical decisions remaining on this project. The CD-0, Approve Mission Need was completed by HQ in March 1996. The CD-1, Approve Preliminary Baseline Range was completed by Headquarters in January 1997. This was accomplished by acceptance of the data sheet by Headquarters and the subsequent Congressional budget request. Supporting documentation included the 1996 Conceptual Design Report and cost estimate of July 1996. The CD-2, Approve Performance Baseline was completed by Headquarters January 2000 by approval of the data sheet for the FY 2001 budget request and the Report to Congress. In May 2000, the contract was awarded for the privatized design, construction and start-up of the Nuclear Regulatory Commission licensed facility. The CD-3, Approve Start of Construction, and CD 4, Approve Start of Operations are not applicable due to the nature of the contract and because the Nuclear Regulatory Commission has regulatory authority for the licensing of the facility.

The level of confidence for completing the project within the current total estimate of cost is high because the project is fixed price, utilizes known technology, and is based on a proven Nuclear Regulatory Commission licensed design. Also, although certain risks remain with DOE consistent with the contract, these risks have been analyzed by DOE and are reflected in the current cost estimate.

4. Details of Cost Estimate

	(dollars in thousands)	
	Current Estimate ^a	Previous Estimate
Total, Engineering design, license application preparation and administration cost	74,718	67,092
Total, Construction Costs (including management and indirect costs)	148,845	130,766
Total, line item costs	223,563	197,858

^a The current Total Estimated Cost estimate is based on the selected contractor's proposed price of \$181,048 in FY 1999 dollars adjusted by \$42,515 for contract clauses that will increase cost. Contractual clauses provide for economic price adjustments (Phase II) and incentive for early completion. The estimate also reflects risk that remains with DOE consistent with the terms of the contract. The cost of the licensing phase (Phase 1-B) is not included in the Total Estimated Cost since it is not funded from the privatization account.

5. Method of Performance

The Nuclear Regulatory Commission will license operation of the dry transfer facility and Independent Spent Fuel Storage Installation. The design life for the Independent Spent Fuel Storage Installation is 40 years and the design life for the dry storage canisters is 100 years. The Nuclear Regulatory Commission licensing of the Independent Spent Fuel Storage Installation would be for a 20-year period with a possible extension for another 20 years. The financing, design, permitting, construction, and operation are the responsibility of the contractor. The cost estimate is based on the assumption that the 10 CFR 72.30 c (1) financial assurance requirement for decontamination and decommissioning can be satisfied through a commitment from DOE and not prepayment by the private contractor. After completion of dry transfer of the selected fuel types to the Independent Spent Fuel Storage Installation, the Department will have the right to exercise an option to transfer and store additional fuel (Phase IV). The first phase (Phase I A) of the project will be paid on a fixed price basis upon completion of specified deliverables. The licensing phase (Phase I B) will be performed under a cost plus fixed fee arrangement. The cost of construction and start-up will be amortized over the first 800 units of spent fuel processed. The contractor will be paid when spent fuel assemblies are placed in dry storage based on fixed unit prices established in the contract.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2000	FY 2001	FY 2002	Outyears	Total ^a
Total Project Cost (Agency Requirements)	0	0	0	74,718	0	0
Total facility costs (Federal and Non-Federal)	0	0	0	0	148,845	223,563
Other project costs						
Facility Licensing and Operations ^b	0	0	0	3,964	45,500	49,464

^a Facility Licensing and Operations costs, including Phase IB (Licensing) and Phase III (Operations) costs, will be paid from operating funds and not privatization funds. Phase IB of the contract is being performed on a cost reimbursable basis due to uncertainty in the overall period of time the licensing process may take. Having this work performed on a cost plus basis rather than a fixed price eliminates the need for the contractor to build in additional contingency into its price, and is expected to result in the best value to the Government.

^b The table above reflects costs associated with the Spent Nuclear Fuel Dry Storage Plant contract, and does not include \$768,000 in historical costs incurred during FY 1998 and FY 1999 by the Idaho Engineering and Environmental Laboratory Management and Operating contractor for their past support of this privatization procurement effort. This contract is a Federal procurement.

(dollars in thousands)

Facility Support - Management and Operating/Other ^c	0	0	0	0	0	0
Total other project costs	0	0	0	3,964	45,500	49,464
Total project costs (TPC)	0	0	0	78,682	194,345	273,027

^a This Total Project Cost estimate is based on the selected contractor's proposed price of \$217,409 adjusted by \$55,618 for contract clauses that will increase cost and for the Total Estimated Cost related risk that remains with DOE consistent with terms of the contract. Contractual clauses provide for cost reimbursement for the Nuclear Regulatory Commission licensing activities (Phase IB), economic price adjustments (Phase II and III), and incentive for early completion.

98-PVT-5, Environmental Management Waste Management Disposal; Oak Ridge, Tennessee

Significant Changes

- # The initial project cost estimate (July 1997) was developed as part of the Remedial Investigation/ Feasibility Study document completed under the Comprehensive Environmental Response Compensation and Liability Act process. In March 1998, the new Oak Ridge Operations Office management and integration contractor initiated rebaselining of the cleanup program at the Oak Ridge Office, including this project. A detailed review of the assumptions, construction method of accomplishment, and outyear operations cost, contained in the Remedial Investigation/Feasibility Study cost estimate, resulted in a reduction of \$26,500,000 in the Total Estimated Cost and an increase in the Total Project Cost of \$55,900,000 in the FY 2000 Budget Request.
- # In December 1999, following the issuance of the Record of Decision and submittal of the privatization project report to Congress, a fixed-price, performance-based contract was awarded to Waste Management Federal Services Inc., for the design, construction, operation, and capping of the initial 400,000 cubic yard disposal facility. The initial contract value for the capital construction of this 400,000 cubic yard facility reduced the Total Estimated Cost by \$39,000,000 to \$19,500,000. The Total Estimated Cost was subsequently increased by \$1,300,000 to \$20,800,000 in a May 2000, letter of notification to Congress. The \$1,300,000 is needed for capital upgrades so that classified waste can be disposed of into the Environmental Management Waste Management Facility. The disposal of this waste into the Environmental Management Waste Management Facility will avoid tens of millions of dollars in transportation costs that would be incurred to dispose of the waste in an appropriate offsite facility.
- # The Total Project Costs of \$225,900,000 reflected in the FY 2000 budget request assumed a 10-year period of operations, which would include expanding the facility up to 1,300,000 cubic yards. The Total Project Cost of \$70,800,000 reflects completion of a 400,000 cubic yard facility in 4 years, including the additional operations costs needed for classified waste disposal.
- # The Total Estimated Cost for the initial 400,000 cubic yard facility increased \$3,330,000 to \$24,130,000 in a December 2000, letter of notification to Congress. This increase provided funding for contract changes resulting from changes in the scope of the project and from differing site conditions. The Total Project Costs also increased \$3,330,000 to \$74,140,000.
- # A new Waste Generation Forecast reflects the need for a significant increase in the capacity of the facility, from 400,000 cubic yards to 2,000,000 cubic yards. This FY 2002 datasheet reflects a \$83,100,000 increase to the total estimated cost of the project for the design, construction, and capping of an additional 1,600,000 cubic yards of disposal capacity. The funding for this additional capacity will be requested in two 800,000 cubic yard increments. The FY 2002 budget request includes the design and construction funding for the first 800,000 cubic yard increment. The total project cost increases by

\$160,800,000 to \$234,900,000 of which \$77,700,000 is for operations and supports costs of the expanded facility.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost	Total Project Cost
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 1998 Budget Request (A-E and technical design only)	n/a	n/a	FY 1999	FY 2001	85,000	170,000
FY 1999 Budget Request (Preliminary Estimate)	“	“	“	“	85,000	185,000
FY 2000 Budget Request (Pre-award Estimate)	“	“	FY2000	“	58,500	225,880
Congressional Notification (May 2000)						
# Base facility (400,000 cy)	FY 2000	FY 2001	FY 2001	FY 2001	19,500	65,505
# Upgrades for Classified Facility	FY 2000	FY 2001	FY 2001	FY 2001	1,300	5,304
Total FY 2000 Congressional Notification					20,800	70,809
Congressional Notification (December 2000)						
# Base facility (400,000 cy)	FY 2000	FY 2001	FY 2001	FY 2001	20,800	70,809
# Provision for Contract Changes	FY 2000	FY 2001	FY 2001	FY 2001	3,330	3,330
Total FY 2000 Budget Update					24,130	74,139
FY 2002 Budget Request (Current Estimate)						
# Base facility (400,000 cy)	FY 2000	FY 2001	FY 2001	FY 2001	24,130	74,139
# Expanded facility (400,000 to 2,000,000 cy)	FY 2000	FY 2001	FY 2001	FY 2001	83,097	160,799

Total FY 2002 Budget

Request

107,227 234,938

**Environmental Management/Defense Environmental
Management Privatization/98-PVT-5, Environmental
Management/Waste Management Disposal; Oak Ridge,
Tennessee**

FY 2002 Congressional Budget

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations ^a	Obligations ^b	Costs
1997	0	0	0
1998	5,000	0	0
1999	14,500	0	0
2000	0	14,239	0
2001	0	3,505	0
2002	26,050	21,420	17,744
2003	0	0	0
2004	42,000	48,386	27,806
2005	19,677	19,677	18,628
2006	0	0	23,372
2007	0	0	19,677
Total	107,227	107,227	107,227

3. Project Description, Justification and Scope

The envisioned Environmental Management Waste Management Facility consists of a disposal cell with ancillary facilities to support initial operations and an area for the potential development for future treatment, storage, and disposal facilities. The disposal cell will have an initial capacity of 400,000 cubic yards, will be above-grade earthen structure, and will be Resource Conservation and Recovery Act compliant. The current cell design provides expansion capacity up to 1,300,000 cubic yards. Based on projected waste volumes and cell design assumptions, the disposal cell is estimated to require 60 to 70 acres, with a total Environmental Management Waste Management Facility footprint of 100 to 120 acres, including initial support facilities and an area reserved for future expansion.

Support facilities required for initial operations include those needed for waste staging, temporary storage, and equipment decontamination. An area reserved for future potential expansion would accommodate future facility needs not fully defined at this time. For example, while waste generators will be responsible for treatment to satisfy the Resource Conservation and Recovery Act Land Disposal Regulations and the facility's Waste

^a For multi-year funded projects, appropriation is needed a year ahead of contract commitments to preclude deficiencies. However, appropriation in excess of contract commitments is requested in order to provide confidence to potential contractors during procurement activities of the support the Department has for this project.

^b Includes current contractor investment plus funds to maintain current project schedules (including allowances for items such as long-lead procurements).

Acceptance Criteria, treatment facilities may be located at the Environmental Management Waste Management Facility in the future to enhance overall efficiency of operations.

The Department of Energy expects the Environmental Management Waste Management Facility to offer several benefits. On-site disposal capacity will streamline and expedite cleanup activities. Large volumes of waste from the cleanup of the Oak Ridge Reservation are expected to make off-site transportation and disposal costs significantly higher than on-site disposal costs. Removal of additional waste sources will reduce the total risk at the Oak Ridge Reservation. Consolidating waste management and disposal activities as opposed to capping multiple, discrete waste units in place with continued maintenance and institutional controls will reduce the future mortgage for the Oak Ridge Reservation.

The current appropriations of \$19,500,000 will be used to subcontract the design, construction, and closure (capping) of the 400,000 cubic yard facility, including ancillary support structures. These funds will also cover the remote possibility of termination of the contract. They will eventually be used to reimburse capital expenditures after waste disposal services commence. An additional \$1,300,000 of appropriations is required to add the upgrades to the Environmental Management Waste Management Facility to handle and dispose of classified waste. Another \$3,330,000 of appropriations is needed to fund contract changes resulting from changes in the scope of the project and from differing site conditions. Changes in the scope of the project are necessary to address design and construction modifications that are being driven by regulatory comments and for efficiency improvements for facility operations.

An additional \$83,100,000 is required for the capital costs to expand the facility an additional 1,600,000 cubic yards. This expansion will be accomplished in two 800,000 cubic yard phases. The first phase will require \$21,400,000 in FY 2002 for the design and construction and \$18,600,000 in FY 2004 for the capping. The second phase will require \$23,400,000 in FY 2004 for the design and construction and \$19,700,000 in FY 2005 for the capping.

A total of \$127,700,000 from the Defense Environmental Restoration and Waste Management Appropriation will provide for the operation of the Environmental Management Waste Management Facility, including the actual disposal of the waste into the Environmental Management Waste Management Facility and for support of the project by the Management and Integration contractor.

4. Details of Cost Estimate

(dollars in thousands)		
	Current Estimate	Previous Estimate
Design phase		
Design for the Environmental Management/Waste Management Disposal Facility	1,800	1,303
Total, Design Cost (2% of TEC)	1,800	1,303
Construction phase		
Construction costs for the initial 400,000 cy Environmental Management Waste Management Facility (17% of TEC)	18,627	18,627
Expansion from 400,000 to 2,000,000 cubic yards (64% of TEC)	68,100	0
Total, construction costs (81% of TEC)	86,727	18,627
Contract Changes (12% of TEC)	12,900	2,900
Privatization Interest on Design/Construction/Closure (5% of TEC)	5,800	1,300
Total, line item costs (TEC)	107,227	24,130

In general, the Environmental Management Waste Management Facility project cost estimate is rated at a high level of confidence. This rating is based on several different factors, but primarily, because the costs are based on a fixed price contract that has been negotiated and put into place. Project baselines have been subjected to multiple reviews from both internal and external entities to determine the reasonableness of project estimates. All reviews have indicated that the project scope is well defined, the required technology is based on existing industrial standards and the labor and material estimates are consistent with current standards. Finally, the Environmental Management Waste Management Facility cost data compares favorably with cost data from similar facilities across the DOE complex.

5. Method of Performance

The Department of Energy has developed an approach to construct the Environmental Management Waste Management Facility without impacting the remediation it is intended to support. The Department is pursuing privatization of the facility by purchasing disposal services from a private sector vendor. Several alternatives were evaluated for disposal of wastes generated by remediation activities at the Oak Ridge Reservation. The Record of Decision selected on-site disposal alternative. The Department will develop the performance specifications and will commit to obtaining the necessary permits. In December 1998, three vendors submitted preliminary design and economic analyses in accordance with deliverables required in the first of a two-step procurement process. In December 1999, following issuance of the Record of Decision and submittal of the Privatization Project report to Congress, a second contract was awarded to complete the design, construction, and operations of the facility. Capital cost for the facility is recouped through the operator's unit cost disposal fee negotiated in the second contract. The performance specification will minimize design, construction, and

operational uncertainties and avoid unnecessary constraints. As the regulatory process leading to cleanup decisions continues, the need for additional disposal capacity will become more well defined. Subsequent requests for budget authority to fund facility expansion will be developed sufficiently in advance to accommodate the procurement, design, and construction schedules.

Several external independent reviews of the Environmental Management Waste Management Facility project have been completed. Detailed regulatory reviews were completed by the State of Tennessee and U.S. Environmental Protection Agency Region 4 in the areas of protection of human health and the environment, cost effectiveness and compliance. These reviews were conducted under Comprehensive Environmental Response, Compensation, and Reliability Act and culminated in the issuance of the Environmental Management Waste Management Facility Record of Decision in November 1999, which formally documented the decision to build an on-site disposal facility at Oak Ridge. In addition, the Environmental Management Waste Management Facility was also the subject of a detailed external independent review conducted by the Office of Field Integration, (formerly the Office of Field Management). The Office of Field Integration conducted a detailed review of this project with a team of technical, regulatory and cost estimating subject matter experts. Results of the review were presented in a report submitted to Congress in May 1999 and indicated that the project is well defined, technically sound, and the planning, cost estimating and management procedures being used are consistent with “industry best standard practices”. The primary outstanding item identified and tracked in the Corrective Action Plan, securing regulatory approval of the final design, occurred in March 2001.

The requirements of DOE Order 413.3 “Program and Project Management for the Acquisition of Capital Assets” will be applied using the tailoring approach described in the Order. Critical Decision 4 “start of operations” will be approved prior to commencing facility operations, currently scheduled for November 2001.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2000	FY 2001	FY 2002	Outyears	Total
Project cost						
Facility cost						
Payments to Vendors (400K facility)	0	0	0	17,744	6,386	24,130
Payments to Vendors (1,600K facility)	0	0	0	0	83,097	83,097
Total facility costs (Federal and Non-Federal)	0	0	0	17,744	89,483	107,227
Other project costs						
Payments to Vendors (400K facility)	0	0	0	8,646	11,758	20,404
Payments to Vendors (1,600K facility)	0	0	0	0	60,000	60,000
Facility Support - Management and Integration Support/Other	5,130	3,907	10,323	3,319	24,628	47,307
Total other project costs	5,130	3,907	10,323	11,965	96,386	127,711

(dollars in thousands)

Total project costs (TPC)	5,130	3,907	17,777	29,709	185,869	234,938
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7. Related Annual Funding Requirements

(dollars in thousands)

Current Estimate	Previous Estimate
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Given the nature of the privatization contract, these operating costs are shown as part of the Total Project Cost	0	0
Total related annual funding	0	0

97-PVT-2, Advanced Mixed Waste Treatment Project, Idaho National Engineering and Environmental Laboratory, Idaho

Project Baseline Summary Number (ID-WM-104)

Operating Expense Funded

Significant Changes

The Total Project Cost has been adjusted to reflect actual costs for FY 1997-1999 and current estimate of management and operating support for FY 2003.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ^a (\$000)	Total Project Cost ^b (\$000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 1998 Budget Request (<i>A-E and technical design only</i>)	N/A	N/A	4Q 1999	1Q 2003	569,400	1,173,000
FY 1999 Budget Request (<i>Preliminary Estimate</i>)	N/A	N/A	"	"	569,400	1,078,900
FY 2000 Budget Request (<i>Current Estimate</i>)	N/A	N/A	"	"	569,400	1,115,400
FY 2001 Budget Request (<i>Current Estimate</i>)	N/A	N/A	1Q 2000	"	569,400	1,114,450

^a These estimates are based on a negotiated firm fixed price contract with a commercial firm. The contract includes a provision for price re-determination and economic price adjustment on the operating portion of the contract (Phase III). However, the capital portion of this contract is not subject to either price re-determination or economic price adjustment and is fixed.

^b The Total Project Cost as defined here is the combined value that the Department of Energy believes will be necessary to pay for the products or services contractually agreed upon plus other support costs. It includes Budget Authority requests for Privatization of \$569,400,000; EM Base Program requests for direct payments to the vendor for Licensing and Permitting of \$16,300,000, Facility Operations of \$434,800,000, and decontamination and decommissioning of \$22,700,000. It also includes \$66,700,000 of management and operating support and \$3,100,000 of other project office costs (e.g. National Environmental Policy Act).

FY 2002 Budget Request (Current Estimate with Contingency) N/A N/A 4Q 2000 “ 569,400 1,113,000

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs ^a
Design - N/A			
Construction			
1997	70,000	0	0
1998	0	11,497	0
1999	87,252	115,839	0
2000	109,661	109,530	0
2001	65,000	64,740	0
2002	40,000	39,669	0
2003	105,000	104,877	22,700
2004	92,487	123,248	102,300
2006	0	0	159,400
2006	0	0	159,400
Outyears	0	0	125,600
Total	569,400	569,400	569,400

3. Project Description, Justification and Scope

This project has been in development at the Idaho National Engineering and Environmental Laboratory since 1993. A contract was awarded to BNFL, Inc., on December 20, 1996, to provide the required services to prepare 65,000 cubic meters of accumulated defense waste located at the Idaho National Engineering and Environmental Laboratory for disposal. Those services include retrieval of the waste from existing storage, characterization of the waste for treatment and/or disposal, treatment of the waste, certification of the final waste form for disposal and packaging the waste in approved containers for shipping to disposal. The project meets all current regulations and requirements. The contract has an option for treatment of up to 120,000 cubic meters of additional DOE mixed wastes. The project scope is to treat the Idaho National Engineering and Environmental Laboratory alpha and transuranic mixed waste, as well as other DOE mixed waste, through a private sector treatment facility located at the Radioactive Waste Management Complex at the Idaho National Engineering and Environmental Laboratory.

^a This cost profile represents the annual liability increase to the Government for this project based on work performed by the contractor. The liability is liquidated as waste is treated (see costs above).

The primary wastes to be treated are DOE laboratory and process wastes from Rocky Flats and various DOE facilities. These wastes are currently stored in drums, boxes, and bins at the Transuranic Storage Area of the Radioactive Waste Management Complex. The wastes consist of a heterogeneous mixture of solid materials including paper, cloth, plastic, rubber, glass, graphite, bricks, concrete, metals, nitrate salts, process sludges, miscellaneous components, and some absorbed liquids. Ninety-five percent of the waste is believed to contain both the Resource Conservation and Recovery Act hazardous waste constituents and radioactivity. Some wastes also contain material regulated under the Toxic Substances and Control Act such as polychlorinated biphenyls. No more than 4,100 kilograms (kg) of elemental mercury, and approximately 2,100,000 kg of lead is expected in the 65,000 cubic meters. The transuranic waste will be disposed of at the Waste Isolation Pilot Plant near Carlsbad, New Mexico. Non-transuranic wastes, which are not allowed to be disposed of at the Waste Isolation Pilot Plant (e.g., low-level and mixed low-level wastes), will be disposed of in accordance with applicable waste disposal requirements.

This project is necessary to process alpha contaminated and transuranic mixed waste to produce a disposal ready waste that meets all current requirements for storage, transportation and disposal, including the Waste Isolation Pilot Plant Waste Acceptance Criteria and Resource Conservation and Recovery Act Land Disposal Restrictions. (The Land Disposal Restrictions treatment requirement is waived for waste that is certified for disposal at the Waste Isolation Pilot Plant). The treatment process will size and/or re-package waste into standardized containers; treat polychlorinated biphenyls for disposal, eliminate excess liquids and corrosive characteristics; minimize volatile organic compounds and hydrogen gas generation; and reduce hydrogen layers to increase the wattage (radioactive components) allowed per container.

This project is necessary to meet the requirement in the October 1995 Idaho Settlement Agreement to ship all transuranic waste out of Idaho by 2015 (target) and no later than 2018. It is also necessary to meet Site Treatment Plan milestones under the Federal Facility Compliance Act. In accordance with the Settlement Agreement and the Site Treatment Plan, facility construction will be completed by December 31, 2002, and operations will commence no later than March 31, 2003. Shipments of waste from the Advanced Mixed Waste Treatment Project are expected to begin in March 2003. The State of Idaho will provide the Resource Conservation and Recovery Act and Clean Air Act oversight, while the Environmental Protection Agency Region 10 will provide oversight under Toxic Substance Control Act and the National Emission Standard for Hazardous Air Pollutants.

The FY 1997, 1999, and 2000 appropriations of \$70,000,000, \$87,252,000 and \$109,661,000, respectively, and the budget requests of \$65,000,000 for FY 2001 and \$40,000,000 for FY 2002 will provide funding for the physical construction phase (including advance procurement of major equipment) of this project. These funds will also cover the remote possibility of termination of the contract. They will eventually be used to reimburse capital expenditures after services commence.

Future budget requests will be made within the Defense Environmental Restoration and Waste Management Appropriation for the purpose of making payments to the vendor - \$434,800,000 for operations and \$22,700,000 decontamination and decommissioning. An additional \$64,150,000 will be requested to provide

management and operating support (e.g., facility infrastructure such as utilities, fire protection, etc.) for the privatization effort.

The project has had two external independent reviews. In March-April 1999, the DOE Headquarters Office of Field Integration tasked Logistics Management Institute and Robbins-Gioia, Inc. to conduct a limited external independent review of the Advanced Mixed Waste Treatment Project in order to determine whether project documentation was sufficient for DOE to direct the contractor to proceed with Phase II (i.e., facility construction) of the project. The review team determined that the project was ready to proceed with Phase II. Based on discussions and review of project documentation, the review team provided the Department with five findings in the areas of independent government cost estimating, contract price adjustment and price redetermination mechanisms, financing feasibility, the DOE Project Management Plan, and contract unit price redetermination. The review team's findings, as well as well as recommendations, are being addressed in the Department's corrective action plan. The first three findings identified above are being addressed at the Departmental level and will require policy analysis/development, while the latter two findings are being addressed at the project level (i.e., Advanced Mixed Waste Treatment Project).

The second external independent review, titled *Review of BNFL Inc. Safety and Quality Management Practices for DOE Projects and Facilities*, was performed by Concurrent Technologies Corporation. This review was requested in March 2000 by the Secretary of Energy and the Assistant Secretary for Environmental Management following a mid-February 2000 release of Sellafield inspection reports by the Nuclear Installations Inspectorate of the United Kingdom. These reports described a number of nuclear quality, management, and safety-related issues that had been found at the Sellafield Nuclear site of BNFL plc, the corporate parent of BNFL, Inc. The overall objective of the Department's external independent review was to assess the implications of the issues found at Sellafield on BNFL Inc's operations at the U.S. DOE sites where BNFL Inc. has management responsibilities. The review team provided four findings specific to the Advanced Mixed Waste Treatment Project. Two of the findings identified exemplary practices and, thus, did not require corrective actions. The other two findings dealt with transition planning for project staffing changes and implementation of a formal Employee Concerns Program. The finding on transition planning is being addressed in the Department's corrective action plan, and the finding on the Employees Concerns Program has been closed.

All Critical Decisions for the Advanced Mixed Waste Treatment Project have been accomplished, as discussed below.

The CD-0, Approve Mission Need, was accomplished in May 30, 1995, with the issuance of the Record of Decision on the "Department of Energy Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Final Environmental Impact Statement."

The CD-1, Approve of Preliminary Baseline Range, was accomplished with the December 20, 1996, contract award to BNFL Inc.

The CD-2, Approve Performance Baseline, was accomplished with the December 20, 1996, contract award to BNFL Inc.

The CD-3, Approve Start of Construction, was accomplished by a May 3, 1999, memorandum from the Acting Assistant Secretary for Environmental Management to the Acting Manager of the Idaho Operations Office.

The CD-4, Approval of Start of Operations, was accomplished by a May 3, 1999, memorandum from the Acting Assistant Secretary for Environmental Management to the Acting Manager of the Idaho Operations Office. This project will require both a Final Safety Analysis Report and an Operational Readiness Review and acceptance report, prior to starting operations, as required by DOE Order 413.3.

The level of confidence for completing the project within the current estimate is low. The estimate is expected to increase as a result of the delay in the start of construction, attributed to a lawsuit associated with the proposed incineration portion of the project, and the resultant delays in issuance of the regulatory permits.

4. Details of Cost Estimate

Total capital cost is \$569,400,000 based on the fixed-price contract awarded in December 1996. [Note: BNFL has submitted a \$54,000,000 Request for Equitable Adjustment for the six-month schedule slip the project experienced as a result of the delayed issuance of the final environmental permits. The delay was due primarily to a lawsuit involving the proposed Advanced Mixed Waste Treatment Project incinerator. This Request for Equitable Adjustment is currently being review by the Defense Contract Audit Agency.]

5. Method of Performance

The Advanced Mixed Waste Treatment Project is a privatized, fixed-price contract and will be performed in three phases. Phase I consists of facility permitting, preliminary facility/process design, and establishing the facility safety basis; Phase II consists of final facility/process design, facility construction and system testing; Phase III consists of facility operations, Resource Conservation and Recovery Act Closure, and Decontamination and Decommissioning. The services provided by the contractor shall treat waste to meet the Resource Conservation and Recovery Act Land Disposal Restrictions (except for waste that is certified for disposal at the Waste Isolation Pilot Plant), Toxic Substances Control Act requirements (are still in the Advanced Mixed Waste Treatment Project contract), and Waste Isolation Pilot Plant Waste Acceptance Criteria. Transportation support for shipment of the wastes from the Idaho National Engineering and Environmental Laboratory to the Waste Isolation Pilot Plant is required and will be performed under a separate Waste Isolation Pilot Plant - managed contract.

6. Schedule of Project Funding

(Dollars in Thousands)

	Prior Years	FY 2000	FY 2001	FY 2002	Outyears	Total
Total Project Cost (Agency Requirements)						
Total Facility Costs (Paid to Vendors)	0	0	0	0	569,400	569,400
Other Project Cost						
Facility Operations – payments to vendors ^a	16,300	0	0	0	457,500	473,800
Facility Support – Management and Operation/Other ^b	2,750	950	950	1,000	64,150	69,800
Total, Other Project Cost	19,050	950	950	1,000	521,650	543,600
Total Project Cost	19,050	950	950	1,000	1,091,050	1,113,000

7. Related Annual Funding Requirements

(dollars in thousands)

	Current Estimate	Previous Estimate
Given the nature of the privatization contract, these operating costs are shown in the Total Project Cost.	N/A	N/A
Total related annual funding	N/A	N/A

^a Of the total, \$16,300,000 will be paid for preliminary facility and process design activities, licensing and permitting (Phase 1 costs) funded from EM base operating program. Outyear payments to vendors include \$434,800,000 for facility operations and \$232,700,000 for decontamination and decommissioning.

^b Facility infrastructure support (e.g. utilities, fire protection, etc.) and the National Environmental Protection Act.

97-PVT-3, Transuranic Waste Treatment, Oak Ridge, Tennessee

Significant Changes

- # Congress appropriated an additional \$12,000,000 in FY 2000, bringing the total Privatization funding to \$77,000,000. The fixed price construction and Pre-Operational Testing total for the contract is \$76,239,350. During normal construction projects of this size, it is normal to have contingency funding of at least 15 percent of the estimated value. Therefore, the FY 2002 Budget Request includes an additional \$10,800,000 to cover contingency items during construction. Assuming that the additional \$10,800,000 is not required, it can be returned during FY 2004 when construction activities are complete.
- # A contract for the treatment of transuranic waste was awarded to Foster Wheeler Environmental Corporation in August 1998 through a competitive procurement. This contract was awarded for an amount significantly less than the original management and operating contractor estimate, which was the basis of the FY 1999 Budget Request.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost (\$000)	Total Project Cost (\$000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 1998 Budget Request (<i>A-E and technical design only</i>)	N/A	N/A	3Q 2000	3Q 2002	142,000	455,300
FY 1999 Budget Request (<i>Preliminary Estimate</i>)	N/A	N/A	"	"	127,000	369,439
FY 2000 Budget Request (<i>Current Estimate</i>)	N/A	N/A	4Q 2001	4Q 2003	77,000	211,588
FY 2002 Budget Request (<i>Current Estimate with Contingency</i>)	N/A	N/A	2Q 2001	1Q 2003	87,789	233,902

2. Financial Schedule

(Dollars in Thousands)

Fiscal Year	Appropriations ^a	Obligations ^b	Costs
Design ^c			
1997			
Construction			
1997	65,000	0	0
1998	0	3,964	0
1999	0	0	0
2000	11,963	0	0
2001	0	72,999	0
2002	10,826	10,826	0
2003	0	0	57,180
2004	0	0	30,609
Outyears ^d	0	0	0

3. Project Description, Justification and Scope

In August 1998, the Oak Ridge Operations Office Transuranic Waste Treatment Project contract was awarded to the Foster Wheeler Environmental Corporation. The contract is a fixed-price/fixed unit price contract for the sum of \$193,600,000 and is to be completed by June 2009, assuming all options of the contract are exercised. The Oak Ridge Operations Office will continue to manage this project.

^a For multi-year funded projects, appropriation is needed a year ahead of contract commitments to preclude deficiencies.

^b Includes current contractor investment plus funds to maintain current project schedules (including allowances for items such as long-lead procurements).

^c Design is funded with Defense operating funds. Payments to vendor for design and permitting were funded under the Defense Environmental Restoration and Waste Management appropriation.

^d Project will require decontamination and decommissioning between 2006 and 2009 which will be funded from the Defense Environmental Restoration and Waste Management Appropriation.

The goal of the Oak Ridge Operations Office Transuranic Waste Treatment Project is the successful processing of waste for final disposal in a manner that is safe and efficient and provides the best value to the American taxpayer. Processing is being achieved through a privatization contract between the Department of Energy and the Foster Wheeler Environmental Corporation, who will design, construct, operate, and decontaminate and decommission a waste treatment facility. The facility will have the capability to treat specified Oak Ridge National Laboratory waste streams, with flexibility to treat other DOE waste streams. The Department of Energy intends to lease the Melton Valley Storage Tank and an adjacent area located on the Oak Ridge Reservation to the Foster Wheeler Environmental Corporation for the construction of a treatment facility. The Transuranic Waste Treatment Project site is isolated from the Oak Ridge National Laboratory with a fenced location and private access. This segregation reduces the potential for interface issues with the management and integration/management and operating contractors.

The scope of the contract requires the following services:

- # Waste processing to meet the most current Waste Isolation Pilot Plant or Nevada Test Site Waste Acceptance Criteria, and Resource Conservation and Recovery Act Land Disposal Restrictions requirements
- # To remove, treat, and package the sludge from the tanks to meet disposal requirements
- # Reduce volume and repackage solid transuranic waste to meet disposal requirements
- # Performance in a safe and compliant manner.

The primary wastes involved in this effort are DOE laboratory and processing wastes located at the Oak Ridge National Laboratory. The four primary waste streams, both base and (optional) quantities, and included are:

- # 750 m³ of remote-handled transuranic waste sludge (optional 150 m³) located in the Melton Valley Storage Tank;
- # 600 m³ of low-level supernate (optional 1000 m³) located in the Melton Valley Storage Tank;
- # 150 m³ of remote-handled transuranic waste/alpha low-level solids (optional 400 m³); and
- # 1000 m³ of contact-handled transuranic waste/alpha low-level solids

The Transuranic Waste Treatment Project contract consists of four phases. Each phase must be completed before proceeding to the next phase.

Phases	Actions	Pricing
Phase I	Licensing and Permitting	Fixed Price
Phase II	Construction and Pre-Operational Testing	No Payment*
Phase III	Treatment and Packaging	Fixed Unit Price
Phase IV	Decontamination and Decommissioning	Fixed Price

*Construction costs reimbursed during Phase III waste treatment.

A total of \$146,110,000 from the Defense Environmental Restoration and Waste Management Appropriation will provide for the operation of the Tank Waste Treatment Project, including the actual treatment and packaging of the waste in the Tank Waste Treatment Project, design, licensing and permitting and for support of the project by the management and integration contractor.

The Final Environmental Impact Statement was issued in July 2000 and the Record of Decision was published on August 9, 2000.

Consolidation of the tank sludges was completed on September 30, 2000. A new two lane access road, sufficient to handle the waste shipping trucks, was completed in November 1999. The Department of Energy has completed extension of utilities (electricity, water, and phones) to the site on November 30, 2000.

Design has been completed and certified to start construction and construction started in February 2001. Construction will be completed in December 2002 and waste treatment will start in January 2003. The permitting process with the State of Tennessee is complete. The project is and will continue for the next 23 months to be focused on completion of the construction of the treatment facility.

Overall the project is moving on the original contract schedule. No cost increases (i.e., change orders) have occurred to date. The contract has been modified seven times to incorporate changes in Federal Acquisition Regulations, DOE regulations, key personnel changes, etc. The contract and associated support activities are all occurring within the budgets and schedules originally set forth for the project.

The requirements of DOE Order 413.3 "Program and Project Management for the Acquisition of Capital Assets" will be applied using the tailoring approach described in the Order. Critical Decision 4 "start of operations" will be approved prior to commencing facility operations, currently scheduled for December 2002.

External independent review of the project was completed by Terradigm, Inc., in February 1999. Final report and departmental response were sent to Congress on May 28, 1999. No significant concerns or deficiencies were identified, and all recommendations are already in the Foster Wheeler Environmental Corporation contract or implemented. In the review team's opinion, the Transuranic Waste Treatment Project is a well-conceived, well-planned effort to address the State of Tennessee's requirement to treat and dispose of transuranic legacy waste at Oak Ridge National Laboratory.

Contingency of \$10,800,000 is being requested. During the construction of a capital facility of this size it is common industry practice to include a 15 percent contingency for unknown events that may occur during performance of the work. There are five clauses (Differing Site Conditions, Changes in Requirements, Pre-Existing Conditions, Idle Facility, and Changes) in the contract which could lead to cost growth during the construction phase. For example if a differing site condition occurs in the field during construction, it typically will result in an additional cost. If no privatization contingency funds are available to authorize the new scope, the contractor is required to stop work and the department will suffer additional cost as per the Idle Facility clause. Basically any cost growth without having the contingency funds available will have a significant impact on cost and schedule of the contract.

The level of confidence in the project is high. That is based on solid execution of the project to date and the relative risk ahead. The Waste Isolation Pilot Plant access for remote handled transuranic waste continues to be the greatest risk to the project. Without an approved permit or final WAC, waste may not be able to be shipped immediately thus requiring short term storage. Independent assessments have been done on the project estimate, scope, and schedule by the Corp of Engineers, Inspector General, and the General Account Office with only favorable results, thus substantiating the relatively low risk to the project.

4. Details of Cost Estimate

(Dollars in Thousands)

Current Estimate	Previous Estimate
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A fixed price contract has been signed with the Foster Wheeler Environmental Corporation for a construction cost of \$77,000,000.

N/A
N/A

5. Method of Performance

Two draft Invitations for Bids were released for potential contractor review and comment. Applicable comments were incorporated into the final Request for Proposal that was released in June 1997 and awarded in August 1998.

The construction portion of the project will start after all applicable permits and licenses are obtained, but not later than 2.5 years after the start of the contract. The contractor will have up to two years to construct the facility, but will complete construction no later than December 31, 2002.

The Department will lease the land and the Melton Valley Storage Tanks to the private contractor at the beginning of Phase II. The contractor will recoup the capital cost of the treatment facility as waste is treated.

The transuranic treatment facility will be considered as temporary. The contractor will dispose of all secondary waste generated during their project and remove all contaminated material that may have spilled during the project. The contractor will return the site to its previous condition.

6. Schedule of Project Funding

(Dollars in Thousands)

	Prior Years	FY 2000	FY 2001	FY 2002	Outyears	Total
Project Cost						
Facility Cost						
Payments to Vendors	0	0	0	0	87,789	87,789
Other Project Cost						
Facility Operations – payments to vendors	23,943	0	0	0	92,670	116,613
Facility Support – Management and Operations Support/Other	4,300	4,400	3,300	4,500	13,000	29,500
Total, Other Project Cost	28,243	4,400	3,300	4,500	105,670	146,113
Total Project Cost	28,243	4,400	3,300	4,500	193,459	233,902

7. Related Annual Funding Requirements

(dollars in thousands)

Current Estimate	Previous Estimate
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Given the nature of the privatization contract, these operating costs are shown in the Total Project Cost.

Total related annual funding	0	0
	0	0