

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.), [\$228,357,000] *to become available on October 1 of the year specified and to remain available until expended: fiscal year 2000, \$228,000,000; fiscal year 2001, \$671,000,000; fiscal year 2002, \$659,000,000; fiscal year 2003, \$633,000,000; fiscal year 2004, \$594,000,000. (Energy and Water Development Appropriations Act, 1999.)*

Explanation of Change

Change in appropriation language provides for advanced appropriations through fiscal year 2004.

Defense Environmental Management Privatization

Program Mission

The Department of Energy (DOE) began working with the private sector in the 1940's 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 typical method of contracting. This mechanism contained very general work scope under which DOE 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. award fee).

In an effort to meet the enormous cleanup challenge in the face of declining resources, EM began utilizing, where appropriate, privatization as a mechanism to deal with these demands. Privatization is a contracting strategy that should reduce the project risk to the government and achieve cleanup more cost-effectively. Under privatization, the EM program provides financial incentives to the contractors to substantially reduce EM cleanup costs while ensuring that an appropriate technical and financial risk/reward balance between DOE and the contractors is maintained. The use of privatization is expected to result in cleanup being accomplished sooner in comparison to the traditional Management and operating approach, thus supporting the EM vision of completing substantial cleanup at most EM sites within the next decade.

As provided in the National Defense Authorization Act for Fiscal Year 1998, contracts for EM Privatization projects should meet the following criteria: be awarded on a competitive basis; require the contractor to construct or acquire any equipment or facilities required to carry out the contract; 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; provide for payment to the contractor under the contract only upon the meeting of performance specifications in the contract. The EM focus in utilizing this methodology is to gain an edge through best-in-class management capability, business strategies, technological approaches, schedule enhancements, regulatory experience and cost efficiencies. This type of project funding is widely used in the private sector to finance power plants and other investments. The Department believes the privatization program is the most cost-effective approach for selected projects.

This program is budgeted for under the appropriation account: Defense Environmental Management Privatization. The Defense Environmental Management Privatization request for FY 2000 is \$228.0 million, a decrease of \$.4 million compared to the amount provided for Privatization in FY 1999. The FY 2000 privatization program, however, totals \$253.0 million, supported by \$25.0 million of prior year balances associated with a now canceled project. The FY

2000 request is required to continue the Idaho Advanced Mixed Waste Treatment, the Idaho Spent Nuclear Fuel Dry Storage, the Oak Ridge Environmental Management/Waste Management Disposal Facility, the Oak Ridge Transuranic Waste Treatment and the Richland Tank Waste Remediation System privatization projects.

The Department is requesting advance appropriations for the Hanford Tank Remediation System for FY 2001 through FY 2004 and for the Idaho Advanced Mixed Waste Treatment Project for FY 2001 (FY 2001 - \$671 million, FY 2002 - \$659 million, FY 2003 - \$633 million and FY 2004 - \$594 million). The Department will consider incremental funding for other privatization projects on an annual basis.

Program Goal

The goal of Privatization is to accomplish work traditionally performed by Management and Operations/Management and Integration contractors in the cost plus contract environment in a more cost-effective manner.

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 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 privatization projects aimed at reducing the overall cost of environmental cleanup activities.

Performance Measures

- # Start construction of the Oak Ridge Transuranic Waste Treatment project;
- # Start construction of the Richland Tank Waste Remediation System Privatization Phase 1 project; and
- # Ship 3,376 cubic meters of contact-handled waste to Waste Isolation Pilot Plant assuming resolution of legal concerns.

The following list of projects were started in FY 1997 and FY 1998 and will be continued in FY 2000. There are no new starts scheduled for FY 2000.

Significant Accomplishments and Program Shifts

- # In March 1998, the new Oak Ridge Management and Integration contractor initiated a rebaselining of the cleanup program in Oak Ridge including the Environmental Management/Waste Management Disposal project. A detailed review of the data contained in the Remedial Investigation/Feasibility Study cost estimate resulted in a reduction to the Total Estimated Cost of that project of \$26.5 million and an increase in the Total Project Cost of \$40.9 million over the projected Phase 1 span of 19 years.
- # In August 1998, the Department negotiated a contract with BNFL, Inc., to proceed into Phase B of the Tank Waste Remediation System project at Hanford, Washington. In addition, in order to more effectively manage the Tank Waste Remediation System, and in response to Congressional concerns, the Secretary established the Office of River Protection at the Hanford, Washington site.
- # In August 1998, the Department awarded, through competitive procurement, a contract for the treatment of Transuranic Waste to the Foster Wheeler Environmental Corporation. The contract was awarded for approximately \$50 million less in Total Estimated Cost than the original Management and Operations contractor estimate.
- # After very careful deliberation and examination of more refined estimates, the Department determined the privatization approach was not the most feasible for the Savannah River Spent Nuclear Fuel project. The \$25.0 million originally appropriated for this project will be used to support the total FY 2000 Privatization program level of \$253.0 million.
- # The Total Project Cost for the Advanced Mixed Waste Treatment Project, Idaho has been revised from \$1,078.9 million to \$1,115.4 million as a result of the contract provision for price redetermination and economic price adjustments on the operating portion of the contract. The Total Estimated Cost of the privatized portion of the contract was not effected.

Funding Profile

(dollars in thousands)

	FY 1998 Current Appropriation	FY 1999 Original Appropriation	FY 1999 Adjustments	FY 1999 Current Appropriation	FY 2000 Request
Privatization	200,000	260,357	0	260,357	253,000
Subtotal, Privatization	200,000	260,357	0	260,357	253,000
Use of prior year balances	0	0	(32,000)	(32,000)	(25,000)
Total, Privatization	200,000	260,357	(32,000)	228,357	228,000

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

Public Law 105-245, "The Energy and Water Development Appropriations Act, 1999"

Public Law 105-261, "Strom Thurmond National Defense Authorization Act For Fiscal Year 1999"

Public Law 102-579, "Waste Isolation Pilot Plant Land Withdrawal Act (1992)"

Funding by Site

(Dollars in Thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Carlsbad Area Office (NM)	21,000	19,605	0	-19,605	-100%
Idaho Operations Office (ID)	27,000	107,252	115,000	7,748	7%
Oak Ridge Operations Office (TN) ..	5,000	33,500	32,000	-1,500	-4%
Richland Operations Office (WA) ...	115,000	100,000	106,000	6,000	6%
Rocky Flats Office (CO)	0	0	0	0	N/A
Savannah River Operations Office (SC)	25,000	0	0	0	N/A
Subtotal, Privatization	193,000	260,357	253,000	(7,357)	N/A
Undistributed	7,000	0	0	0	N/A
Subtotal, Privatization	200,000	260,357	253,000	-7,357	-3%
Use of prior year balances	0	-32,000	-25,000	-7,000	-22%
Total, Privatization	200,000	228,357	228,000	-357	0%

Detailed Program Justification

FY 1998	FY 1999	FY 2000
---------	---------	---------

**CAO-6 Contact Handled Transuranic Waste
Transportation; Carlsbad, New Mexico**

The Waste Isolation Pilot Plant is expected to begin receiving waste requiring specialized transportation. A private vendor will provide transportation of contact-handled transuranic waste from generator sites to Waste Isolation Pilot Plant using contractor owned and operated tractor trailer sets and nuclear packaging equipment. A standard fee will be paid based on shipments and mileage. Site-specific treatment plans developed under the Federal Facility Compliance Act and the associated consent orders and agreements with the states and EPA (across the DOE complex) require disposal of transuranic wastes. Contract award is expected to take place the third quarter of FY 1999.

Total, CAO-6	21,000	0	0
--------------------	--------	---	---

Metrics

No quantifiable corporate performance measures are associated with this project.

FY 1998	FY 1999	FY 2000
---------	---------	---------

**CAO-6 Remote Handled Transuranic Waste
Transportation; Carlsbad, New Mexico**

The Waste Isolation Pilot Plant is expected to begin receiving waste requiring specialized transportation. A private vendor will provide transportation of remote-handled transuranic waste from generator sites to Waste Isolation Pilot Plant using contractor owned and operated tractor trailer sets and nuclear packaging equipment. A standard fee will be paid based on weight and mileage. Site-specific treatment plans developed under the Federal Facility Compliance Act and the associated consent orders and agreements with the states and EPA (across the DOE complex) require disposal of transuranic wastes. The Department anticipates contract award late FY 1999 or early FY 2000.

Total, CAO-6	0	19,605	0
--------------------	---	--------	---

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

FY 1998	FY 1999	FY 2000
---------	---------	---------

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

This project has been in development at the Idaho National Engineering and Environmental Laboratory since 1993. A contract was awarded to BNFL, Inc., in December 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 Idaho National Engineering and Environmental Laboratory and 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 at 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 Radioactive Waste Management Complex.

FY 1998	FY 1999	FY 2000
---------	---------	---------

Waste consists 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. Ninety-five percent of the waste is believed to contain both Resource Conservation and Recovery Act (RCRA) hazardous waste constituents and radioactivity. Some wastes also contain Toxic Substance and Control Act regulated materials such as polychlorinated biphenyls. No more than 4,100 kilograms (kg) of elemental mercury, and approximately 2.1 million kg of lead is expected in the 5,000 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, NM. Non-transuranic wastes which 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.

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, RCRA closure and Decontamination & Decommission. The service shall treat waste to meet RCRA Land Disposal Restrictions. Meeting this requirement will also fulfill Waste Isolation Pilot Plant Waste Acceptance Criteria and Toxic Substance and Control Act requirements. Transportation support for shipment of the waste from Idaho National Engineering and Environmental Laboratory to Waste Isolation Pilot Plant is required and will be performed under a separate Waste Isolation Pilot Plant-managed contract.

FY 1998	FY 1999	FY 2000
---------	---------	---------

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

The FY 1997 appropriation of \$70.0 million represented an estimate of the private sector's capital investment based on the December 1994 feasibility study. The \$87.3 million appropriation for FY 1999 for this project provided for about 15 percent of the full funding for the physical construction (including major equipment) phase of this project based on the fixed price contract awarded in December 1996. The \$110.0 million appropriation for FY 2000 for this project provides for about 19 percent of the full funding for the physical construction (including major equipment) and an aggregate funding level of 47 percent of the full funding for the physical construction. Future budget requests of \$302.1 million will be made to cover the remainder of the construction costs. These funds will cover the remote possibility of termination of the contract. They will eventually be used to reimburse capital expenditures after service commences.

Total, ID-WM-104	0	87,252	110,000
------------------------	---	--------	---------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

FY 1998	FY 1999	FY 2000
---------	---------	---------

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

The Spent Nuclear Fuel Dry Storage Project will provide the capabilities to initiate interim dry modular storage 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 foreign research reactors. The project involves the procurement of a dry storage facility capable of transferring and cleaning spent fuel rods. The service will be provided through an open fixed-price competition. This project plays a critical role in meeting the Idaho Settlement Agreement commitment of placing all Spent Nuclear Fuel at Idaho National Engineering and Environmental Laboratory into dry storage by December 31, 2023. The Idaho Settlement Agreement stipulates compliance with these milestones to continue shipment and consolidation of reactor fuel at Idaho National Engineering and Environmental Laboratory before final disposition by 2035.

Total, ID-Spent Nuclear Fuel-105	27,000	20,000	5,000
--	--------	--------	-------

Metrics

No quantifiable corporate performance measures are associated with this project.

FY 1998	FY 1999	FY 2000
---------	---------	---------

OR-44901 Environmental Management/Waste Management Disposal; Oak Ridge, Tennessee

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 Oak Ridge. The contract will pay a fixed unit price for the disposal service. This project is required to support the Oak Ridge Federal Facilities Agreement and the efficient cost effective disposal of site-wide CERCLA 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 0.84 million cubic meters of wastes and the on-site disposal is supported by stakeholders. This project permits the efficient completion of numerous site projects within budget ceilings. Off-site waste shipments would not allow completion of numerous projects within the current budget caps.

Total, OR-44901	5,000	33,500	20,000
-----------------------	-------	--------	--------

Metrics

No quantifiable corporate performance measures are associated with this project.

FY 1998	FY 1999	FY 2000
---------	---------	---------

OR-38902 Transuranic Waste Treatment; Oak Ridge, Tennessee

The project provides for the treatment of transuranic waste located at various areas within the Oak Ridge Reservation by obtaining the services of a private contractor through a competitive procurement for this four phase project. Phase I will be a fixed-price contract for licensing and permitting and will be funded from the base program. Phase II will consist of construction of the treatment system and any pre-testing required by 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/permited facility and Phase IV will consist of decontamination and decommissioning.

Total, OR-38902	0	0	12,000
-----------------------	---	---	--------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

RL-TW06 Tank Waste Remediation System, Phase I; Richland, Washington

As part of the Reinventing Government and Contract Reform Initiatives, DOE evaluated the feasibility of privatizing all or part of the Hanford Tank Waste Remediation System. It was determined that a two Phase approach to Tank Waste Remediation System privatization was desirable, both from an economic standpoint and from the point of view of private vendors.

FY 1998	FY 1999	FY 2000
---------	---------	---------

The first of the two phases would be a commercial demonstration phase where private vendors would treat sufficient waste to demonstrate to both DOE and to the financial community that they were capable of treating the remainder of the tank waste in a larger, second phase effort. Phase II would complete the treatment of the tank wastes. In September 1996, Tank Waste Remediation System privatization contracts were awarded to teams lead by Lockheed Martin Environmental Services and BNFL, Inc.. These contracts were for Phase 1 of the Tank Waste Remediation System privatization and consisted of Part A and Part B. Part A was a twenty-month period to establish the technical, operational, regulatory, business, and financial elements required by privatization facilities that will provide tank waste treatment services on a fixed-unit-price basis. The two contractors provided required deliverables to the Department after 16 months. As a result of the analyses of these deliverables, the Department determined the Lockheed Martin Environmental Services proposal to be non-viable. On July 21, 1998, the Department delivered the *Report to Congress, Treatment and Immobilization of Hanford Radioactive Tank Waste* providing notification prior to entering into a privatization contract. After the 30-day waiting period the Department negotiated a contract to proceed with BNFL, Inc., into Phase B. However, to better define the project and quantify project risks and to enhance the contractor's ability to obtain financing, it was determined that Phase B would be further divided into Phase B-1, a 24-month design phase, and Phase B-2, the construction and operations phase. A decision point has been established for the Department to determine the viability of proceeding into Phase B-2 before BNFL, Inc. begins construction. In addition, the contract has provided for waste treatment services for both high level and low activity waste. Waste treatment is expected to begin in 2005 or 2006 and continue for about ten years.

Total, RL-TW06	115,000	100,000	106,000
-----------------------------	---------	---------	---------

FY 1998	FY 1999	FY 2000
---------	---------	---------

Metrics

No quantifiable corporate performance measures are associated with this project.

Spent Nuclear Fuel Transfer and Storage; Savannah River, South Carolina

Upon further analysis the Department has determined that privatization is not the best alternative contracting approach for this project and is requesting that the funds be used to support the Department's total privatization request of \$253.0 million in FY 2000.

Total, Spent Nuclear Fuel Transfer and Storage	25,000	0	0
--	--------	---	---

Metrics

No quantifiable corporate performance measures are associated with this project.

Undistributed, Fiscal Year 1998	7,000	0	0
--	-------	---	---

Total, Privatization	<u>200,000</u>	<u>260,357</u>	<u>253,000</u>
----------------------------	----------------	----------------	----------------

Explanation of Funding Changes from FY 1999 to FY 2000

	FY 2000 vs FY 1999 (\$000)
Carlsbad Area Office	
# Project was fully funded in FY 1999	\$-19,605
Idaho Operations Office	
# Continues the requisite incremental funding for the Advanced Mixed Waste Treatment Project (+\$22,748,000) in Idaho Falls, Idaho	+22,748
# Reduction in the amount required for the Spent Nuclear Fuel Dry Storage Project (-\$15,000,000) in Idaho Falls, Idaho	-15,000
Oak Ridge Operations Office	
# Decrease in the amount from FY 1999 for the Environmental Management/Waste Management Disposal at Oak Ridge, Tennessee	-13,500
# Continues the requisite incremental funding for both the Transuranic Waste Treatment projects at Oak Ridge, Tennessee	+12,000
Richland Operations Office	
# Provides the incremental funding necessary to cover the Phase B-1 design activities of BNFL, Inc at Richland, Washington	6,000
Total Funding Change, Privatization	(7,357)

Operating Expense Funded Project Summary

(dollars in thousands)

Project Number	Project Title	TEC	Previous Approp	FY 1998 Approp	FY 1999 Approp	FY 2000 Request	Unappropriated Balance
99-PVT-1	Remote Handled Transuranic Waste Transportation, Carlsbad (WIPP) . .	19,605	0	0	19,605	0	0
98-PVT-1	Contact Handled Transuranic Waste Transportation, Carlsbad (WIPP) . .	21,000	0	21,000	0	0	0
98-PVT-2	Spent Nuclear Fuel Dry Storage, ID	120,000	0	27,000	20,000	5,000	68,000
98-PVT-5	Environmental Management/Waste Management Disposal, OR	58,500	0	5,000	33,500	20,000	0
97-PVT-1	Tank Waste Remediation System Privatization Phase I, RL	5,466,000	170,000 ^a	115,000	100,000	106,000	4,975,000 ^b
97-PVT-2	Advanced Mixed Waste Treatment Project, ID	569,400	70,000 ^c	0	87,252	110,000	302,148
97-PVT-3	Transuranic Waste Treatment, OR	77,000	65,000 ^c	0	0	12,000	0
Projects Removed from Privatization: ^d		0	25,000	25,000	0	0	0
Undistributed		NA	NA	7,000	NA	NA	NA
SubTotal Operating		NA	330,000	200,000	260,357	253,000	NA
Use of Prior Year Balances		NA	NA	NA	-32,000	-25,000	NA
Total Operating Funded Project, Defense Privatization		NA	330,000	200,000	228,357	228,000	NA

^a \$54.0 million was obligated in FY 1996 for Phase I, Part A – within the Defense Environmental Restoration and Waste Management Appropriation.

^b This amount does not reflect the advance appropriation of \$2.492 billion for Fiscal Years 2001 through 2004 for this project.

^c Reflects appropriation in FY 1997 from Defense Environmental Restoration and Waste Management, Fixed Asset Acquisition/Privatization Account.

^d Rocky Flats FY 1997 \$10.0 million; Oak Ridge FY 1997 \$15.0 million and Savannah River FY 1998 \$25.0 million.

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

Significant Changes

The Department is presently in the initial stages of the procurement process with the expectation of releasing the Request For Proposal in the near future. The increase in estimated capital cost of the project (from \$87.0 million to \$120.0 million) is based on information from an independent cost estimate prepared by the Army Corps of Engineers in June 1998.

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>)	NA		FY 1999	FY 2001	87,000	123,831
FY 1999 Budget Request (<i>Preliminary Estimate</i>)	NA		FY 1999	FY 2001	87,000	123,831
FY 2000 Budget Request (<i>Current Estimate</i>)	NA		FY 1999	FY 2003	120,000	163,750

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations ^a	Obligations ^b	Costs ^c
Design			
1997			
Construction			
1997	0	0	0
1998	27,000	0	0
1999	20,000	15,000	0
2000	5,000	35,000	13,000
2001	68,000 ^d	60,000	2,000
2002	0	10,000	0
2003	0	0	10,000
2004	0	0	40,000
2005	0	0	25,000
2006	0	0	20,000
Outyears	0	0	10,000

3. Project Description, Justification and Scope

The Spent Nuclear Fuel Dry Storage Project will provide Nuclear Regulatory Commission-licensed interim dry storage 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 would place approximately 50 cubic meters of Spent Nuclear Fuel into dry interim storage.

This project includes the following services:

- # Dry Transfer Capability to allow dry transfer of Spent Nuclear Fuel fuel assemblies from a shipping cask into dry storage canisters.
- # Independent Spent Fuel Storage Installation as defined by Nuclear Regulatory Commission regulations

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

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

^c The Department intends to make an outlay in the amount of about \$13.0 million in FY 2000 for design completion and a subsequent payment in FY 2001 for licensing.

^d This amount reflects current program baseline requirements. The Department will consider these requirements in the formulation of future budget requests.

Loading of the designated fuels into the Independent Spent Fuel Storage Installation beginning by July 1, 2003, and completing in FY 2007. ^a

Operation of Dry Transfer Facility and Independent Spent Fuel Storage Installation through 2007.

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 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 Order requires initiation of Spent Nuclear Fuel loading into dry storage by July 1, 2003, and that a multi-purpose canister or equivalent (licensed for storage and transportation) dry storage system must be provided.

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 existing Idaho National Engineering and Environmental Laboratory facilities, including life-cycle costs, is not significantly lower than the cost of new facilities.
- # A technical scope that includes modification of existing Idaho National Engineering and Environmental Laboratory facilities is not considered suitable for a privatization contract.
- # The cost of attempting to obtain 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.
- # The dry transfer and interim storage facilities may be needed to transfer the other DOE-owned Spent Nuclear Fuel to dry storage. The total life span of these facilities is estimated to be 35 to 40 years. Project scope is limited to those fuels specified in the Request for Proposal.

The project would be constructed at the Idaho Nuclear Technology and Engineering Center, formerly known as the Idaho Chemical Processing Plant.

The Spent Nuclear Fuel will be received in a wide variety of shipping casks from off-site and on-site shipments. The successful contractor will handle selected fuel types that, based on currently available fuel condition data (records verification only), are believed to be undamaged and have intact cladding. However, these selected fuels may require special handling and treatment to meet Nuclear Regulatory Commission requirements for placement in an Independent Spent Fuel Storage Installation.

Waste generated by fuel transfer should be minimized, but waste stream disposal shall be the responsibility of the successful bidder. The fuel will not be disposed of in Idaho and fuel disposal is not within the scope of this contract. The Request for Proposal mandates the use of the preliminary design specifications for standardized Spent Nuclear Fuel canisters.

^a The October 17, 1995 Consent Order does not drive the end date for this particular project. The project completion date may be subject to change with negotiation of amortization schedules with the private sector.

The funding request for Privatization allows DOE to award the contract for storage services. The funds also cover design and licensing, construction costs of the dry transfer facility, procurement of the storage canisters, and the dry storage system units. Completion of the firm fixed lump sum price design and licensing deliverable (which includes acceptance of the license application(s) by the Nuclear Regulatory Commission and issuance of the license) will result in two payments to the contractor using privatization funds. A payment is planned to be made after design completion (FY 2000) and subsequent submittal and acceptance of the license application by the Nuclear Regulatory Commission (FY 2001). A second payment will be made after the Nuclear Regulatory Commission issues the license. The firm fixed price cost to construct the facilities will be amortized over a portion of fuel processed and paid out as fixed unit prices. Also, if it would become necessary, these funds will also cover termination of the contract for the convenience of the Government.

The increase in estimated capital cost of the project (from \$87 million to \$120 million) is based on information from an independent cost estimate prepared by the Army Corps of Engineers in June 1998. The project schedule has also been revised to be consistent with the 1995 Consent Order with the State of Idaho. This independent cost estimate represents the best estimate of projected cost at the present time because the Department has not yet received bids from the vendors. The construction data sheet will be revised when the Department awards a contract after providing the appropriate report to Congress. The Department expects to issue the final Request for Proposal in the 2nd quarter, FY1999.

In addition to the privatization request, a total of \$24.9 million will be provided from the Defense Environmental Restoration and Waste Management Appropriation to make payments to the vendor for dry transfer and interim storage operations from 2003 through 2007. The other costs (\$18.5 million) include support activities required by the Management and Operations contractor to develop the initial procurement specifications and deliver spent nuclear fuel to the successful vendor in the outyears.

4. Details of Cost Estimate ^a

(Dollars in Thousands)		
	Current Estimate	Previous Estimate
Total, Engineering design inspection and administration of construction costs	15,000	7,000
Total, Construction Costs	92,000	75,000
Total, Project management and indirect costs	13,000	5,000
Total, line item costs	120,000	87,000

^a The estimate details are unavailable as they may unnecessarily influence the procurement process; bids are expected in FY 1999.

5. Method of Performance

The dry transfer capability and Independent Spent Fuel Storage Installation would be licensed by the Nuclear Regulatory Commission. The design life for the Independent Spent Fuel Storage Installation is 40 years and the design life for the dry storage canisters is a minimum of 40 years. 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. The first phase of the project will be paid on a fixed-price, lump-sum basis upon completion of specified deliverables. Cost of construction and start-up will be amortized over the first portion of fuel processed. The contractor will be paid when spent fuel assemblies are placed in dry storage based on fixed unit prices determined at the time of contract award.

The schedule calls for using a streamlined procurement in which the Request for Proposal will be issued during the second quarter of FY99 and the contract awarded within six months.

6. Schedule of Project Funding

(Dollars in Thousands)

	Prior Years	FY 1998	FY 1999	FY 2000	Outyears	Total
Project Cost						
Facility Cost						
Payments to Vendors	0	0	0	13,000	107,000	120,000
Other Project Cost						
Facility Operations						
payments to vendors	0	0	0	0	24,900	24,900
Facility Support – M&O						
support/Other	0	991	1,290	0	16,569	18,850
Total, Other Project Cost	0	991	1,290	0	41,469	43,750
Total Project Cost	0	991	1,290	13,000	148,469	163,750

7. Related Annual Funding Requirements

(FY 2003 dollars in thousands)

	Current Estimate	Previous Estimate
Giving the nature of the privatization contract, these operating costs are shown as part of the Total Project Cost.	N/A	N/A
Total related annual funding (operating from FY 2003 through FY 2007)	N/A	N/A

Giving the nature of the privatization contract, these operating costs are shown as part of the Total Project Cost.

Total related annual funding (operating from FY 2003 through FY 2007)

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

Significant Changes

- # The initial estimate to support the FY 1998 Total Estimated Cost was developed July 1997 in support of the Remedial Investigation/Feasibility Study document completed for this project in February of 1998. The evaluation of alternatives and supporting cost estimate data for development of the Remedial Investigation/Feasibility Study was being conducted under the Comprehensive Environmental Response, Compensation, and Liability Act process. The FY 1998 reported Total Estimated Cost was based on this preliminary estimate. In March of 1998, the new Oak Ridge Management and Integration contractor initiated rebaselining of the cleanup program in Oak Ridge, including this project. A detailed review of the assumptions, construction method of accomplishment and other related data contained in the Remedial Investigation/Feasibility Study cost estimate resulted in the reduced Total Estimated Cost as indicated below. Further, the more detailed assessment of required out year activities resulted in the increase of the Total Project Cost as indicated below.
- # In December 1998, three vendors provided preliminary designs and economic analyses. Following the issuance of the Record of Decision and submittal of the Privatization Project report to Congress in September 1999, a second contract will be awarded to complete the design, construction, and operations of the facility. The Request for Proposals for this procurement will be issued by March 1999.

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 (A-E and Total Estimated Cost/Physical design only)	NA	NA	FY 1999	FY 2001	85,000	170,000
FY 1999 Budget Request (Preliminary Estimate)	NA	NA	FY 1999	FY 2001	85,000	185,000
FY 2000 Budget Request (Current Estimate)	NA	NA	FY2000	FY 2001	58,500	225,880

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations ^a	Obligations ^b	Costs
Design			
1997	0	0	0
Construction			
1997	0	0	0
1998	5,000	0	0
1999	33,500	2,400	0
2000	20,000	34,700	0
2001	0	21,400	34,000
2002	0	0	24,500
2003	0	0	0
2006	0	0	0
Outyears	0	0	0

3. Project Description, Justification and Scope

The envisioned Environmental Management/Waste Management Disposal 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 305,840 cubic meters (400,000 cubic yards), will be above-grade, and will be a Resource Conservation and Recovery Act compliant earthen structure. The cell will also have expansion capacity to accommodate up to 0.84 million cubic meters (1.1 million cubic yards). Based on projected waste volumes and cell design assumptions, the disposal cell is estimated to require 60-70 acres, with a total Environmental Management/Waste Management Disposal Facility footprint of 100-120 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 Resource Conservation and Recovery Act Land Disposal Regulations and the facility's Waste Acceptance Criteria, treatment facilities may be located at the Environmental Management/Waste Management Disposal Facility in the future to enhance overall efficiency of operations.

The Department of Energy expects the Environmental Management/Waste Management Disposal Facility to offer several benefits. On-site disposal capacity will streamline and expedite cleanup activities. Large volumes of waste from the cleanup of Oak Ridge Reservation are expected to make off-site

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

transportation and disposal costs significantly higher than on-site disposal costs. Removal of additional waste sources would 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 would reduce the future mortgage for the Oak Ridge Reservation.

A total of \$58.5 million is required for the purposes of subcontracting initial construction of the Environmental Management/Waste Management Disposal Facility that includes design and construction for a 400,000 cubic yard facility and 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 services commence.

Future budget requirements, extending through 2010, in the amount of \$121.3 million will be made within the Defense Environmental Restoration and Waste Management Appropriation, for the purpose of operations, capital facility expansion (including capping/closure of the expanded facility) for the Environmental Management/Waste Management Disposal Facility. The combination of the Privatization funds and the operating funds will be used to make payments to the vendor for the contractually required placing of material in the Environmental Management/Waste Management Disposal Facility. An additional \$46.1 million from the Defense Environmental Restoration and Waste Management appropriation will provide for support of the privatization effort by the Management and Integration contractor. The estimates in this request exclude the long term surveillance and maintenance.

4. Details of Cost Estimate ^a

	(Dollars in Thousands)	
	Current Estimate	Previous Estimate
Design Costs (8.0% of Total Estimated Cost)	4,619	5,800
Total, Design Costs	4,619	5,800
Construction Costs:		
Construction Costs (45% of Total Estimated Cost)	25,356	52,500
Capping Costs (17% of Total Estimated Cost) (unescalated)	9,889	0
Closure Costs (2% of Total Estimated Cost) (unescalated)	939	0
Total Construction Costs	36,184	52,500
Contingencies and Escalation (13% of Total Estimated Cost)	7,644	0
Total Contingencies and Escalation	7,644	0
Project Management and Other Project Costs	0	13,500
Total, Base Project Costs	48,447	71,800
Privatization Interest on Design/Construction (17% of Total Estimated Cost)	10,053	13,200
Total Project Costs	58,500	85,000

^a The annual escalation rates assumed for FY 1996 through FY 2002 are 2.5%,2.8%, 3.0%,3.1%, 3.3%, 3.4%, and 3.4% respectively.

5. Method of Performance

DOE has developed a funding approach to construct the Environmental Management/Waste Management Disposal Facility without impacting the remediation it is intended to support. DOE is pursuing privatization of the facility by purchasing disposal services from a private sector vendor. Several alternatives have been evaluated for disposal of wastes generated by remediation activities at the Oak Ridge Reservation. One alternative considered in the Feasibility Study is the construction and operation of the Environmental Management Waste Management Disposal Facility on the Oak Ridge Reservation. If on-site disposal is the selected alternative in the Record of Decision, DOE will develop the performance specifications and will commit to obtaining the necessary permits. In December 1998, three vendors provided preliminary designs and economic analyses. Following issuance of the Record of Decision and submittal of the Privatization Project report to Congress in September 1999, a second contract award will be made to complete the design, construction, and operations of the facility. The Request for Proposals for this procurement will be issued by March 1999. 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. This will result in less risk to the vendor, which should be reflected in a lower unit costs.

6. Schedule of Project Funding

(Dollars in Thousands)

	Prior Years	FY 1998	FY 1999	FY 2000	Outyears	Total
Project Cost						
Facility Cost						
Payments to Vendors	0	0	0	0	58,500	58,500
Other Project Cost						
Facility Operations – payments to vendors	0	0	0	0	121,253	121,253
Facility Support – M&O support/Other	0	1,500	6,853	2,785	34,989	46,127
Total, Other Project Cost	0	1,500	6,853	2,785	156,242	167,380
Total Project Cost	0	1,500	6,853	2,785	214,742	225,880

7. Related Annual Funding Requirements

(FY 2000 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

Total related annual funding	NA	NA
------------------------------------	----	----

97-PVT-1, Tank Waste Remediation System Privatization Phase 1; Hanford, Washington

Significant Changes

- # In Fiscal Year 1998, the Department completed analysis of deliverables from Lockheed Martin Environmental Services and BNFL, Inc. under Part A of the privatization contract. The Lockheed Martin Environmental Services proposal was determined to be non-viable. In August 1998, the Department negotiated a contract to proceed with BNFL, Inc., into Phase B. However, to better define the project and quantify project risks and to enhance the contractor's ability to obtain financing, it was determined that Part B would be further divided into Part B-1, a 24-month design phase, and Part B-2, the construction and operations phase. In addition, the contract has provided for waste treatment services for both high level waste and low activity waste in a full scale production facility. Under this new two phase approach, waste treatment is now expected to begin in FY 2005 or FY 2006 and continue for about 10 years. This reflects a change from the original plan, which was to have contractors who successfully completed Part A proceed to Part B. Under Part B, the contractors would provide low-activity waste and optional high level waste treatment plants, and immobilize wastes as a demonstration phase expected to begin in FY 2002, with full scale production occurring under Phase II.

- # In order to more effectively manage the Tank Waste Remediation System and in response to Section 3139 of the *Strom Thurmond National Defense Authorization Act for Fiscal Year 1999*, the Secretary of Energy also established the Office of River Protection at the Hanford, Washington, site. The Manager of this Office will be a high level Departmental management official responsible for managing all aspects of Tank Waste Remediation System including the privatized contract for treatment and immobilization of tank waste and the non-privatized operations, maintenance, engineering and construction activities in the tank farms.

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	FY 2000	FY 2002	1,450,000	3,954,000
FY 1999 Budget Request (<i>Preliminary Estimate</i>)	Jun 1998	Dec 1999	FY2000	FY2002	1,450,000	5,144,000
FY 2000 Budget Request (<i>Current Estimate</i>)	Aug 1998	Jul 2001	FY2001	FY2007	5,466,000	12,488,000

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations ^a	Obligations ^b	Costs ^c
Design			
1997	\$170,000 ^d	\$0	\$0
1998	\$115,000	20,000	0
1999	100,000	155,000	0
2000	106,000	219,000	50,000
Construction			
2001	606,000	703,000	0
2002	659,000	659,000	0
2003	633,000	633,000	0
2004	594,000	594,000	58,000
2005	598,000	598,000	188,000
2006	564,000	564,000	401,000
Outyears	1,321,000	1,321,000	4,769,000

3. Project Description, Justification and Scope

Radioactive waste has been stored in large underground storage tanks at the Hanford Site since 1944. Approximately 54 millions gallons of waste containing approximately 240,000 metric tons of processed chemicals and 250 mega-curies of radionuclides are currently being stored in 177 tanks. These caustic wastes are in the form of liquids, slurries, saltcakes, and sludge. In 1992, the Tank Waste Remediation System Program was established to manage, retrieve, treat, immobilize, and dispose of these wastes in a safe, environmentally sound, and cost-effective manner. The integrated Tank Waste Remediation System program was designed to include efforts to resolve a number of safety concerns and technical issues and to address past leakage from some of the underground storage tanks which have contaminated the vadose zone and, recent reports indicate, could have contributed to contamination of the ground water. Storage in the current tanks is very costly; and, as the tanks age, potential for radioactive and chemical release increases, although short-term risks are low. The Tank Waste Remediation System program will substantially decrease the

^a For multi-year funded projects, appropriation is needed a year ahead of contract commitments to preclude Anti-Deficiencies. M&I support costs to deliver Phase I minimum order quantity of 6% to 13% of tank wastes is \$2.0 billion.

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

^c Reflects latest known outlay projection and may be different from the outlays used in developing the FY 1999 Congressional Budget.

^d Office of Environmental Management Base Program appropriation of \$54.0 million was obligated in FY 1995 and FY 1996 for Phase 1, Part A. These funds are part of "Other Project Costs", and are reflected in Section 6 of this data sheet.

long-term costs and provide long-term protection of public health and safety and the environment by removing the wastes from the tanks and providing a waste form suitable for long term disposal.

The Tank Waste Remediation System pathway for cleanup is formally documented in the Hanford Federal Facility Agreement and Consent Order, commonly known as the Tri-Party Agreement. Under the Tri-Party Agreement, DOE, the U.S. Environmental Protection Agency, and the Washington State Department of Ecology have agreed to a 30-year timetable for cleanup of the Hanford Site. Key dates related to the privatization found in the Tri-Party Agreement are start construction of High Level Waste pretreatment facility by June 2001 (Tri-Party Agreement M-50-04-T01), start hot operations Phase 1 Pretreatment and Immobilization Facilities by December 2002 (Tri-Party Agreement M-60-12), and completion of Pretreatment and Immobilization of all Hanford low activity waste by December 2024 (Tri-Party Agreement M-0-00). Changes to these dates will be negotiated with the parties to the Tri-Party Agreement to be consistent with the Part B contract schedule.

The Hanford Site processed more than 100,000 metric tons (110,000 tons) of uranium and generated several hundred thousand metric tons of wastes. The wastes include: high-level wastes (i.e., cesium-137 and strontium-90), low-level wastes, and hazardous wastes, which may exhibit dangerous characteristics of ignitability, corrosivity, reactivity, and toxicity. All of the waste is stored at Hanford and is being addressed in the Tank Waste Remediation System Program.

As part of the Reinventing Government and Contract Reform Initiatives, DOE evaluated the feasibility of privatizing all or part of the Hanford Tank Waste Remediation System. It was determined that a two-phase approach to Tank Waste Remediation System privatization is desirable, both from an economic standpoint and from the point of view of private vendors. The Tank Waste Remediation System project is now managed by the Manager, Office of River Protection.

Phase I will be an effort whose objectives are to: demonstrate the technical and business viability of using privatized facilities to treat Hanford tank waste; define and maintain required levels of nuclear, radiological, and occupational safety; maintain environmental protection and compliance; and substantially reduce life-cycle costs and time required to treat Hanford tank waste. Phase I consists of two parts. Part A was a 22-month period to establish the technical, operational, regulatory, business, and financial elements required by privatized facilities that will provide tank waste treatment services on a fixed-unit-price basis. BNFL, Inc. successfully completed all Phase 1, Part A technical requirements and was awarded a contract to complete Phase I, Part B in August 1998.

BNFL, Inc., has been authorized to proceed with Phase 1, Part B, which will be a period of 19 years during which that vendor will finance, design, construct, operate, and deactivate the waste-treatment facility. Part B will result in treatment of approximately 6 to 13 percent of the 54 million gallons of high-level tank waste in Hanford's storage tanks. Phase 1, Part B will have two segments, B-1 and B-2. During B-1, BNFL Inc., will design the facility, further develop regulatory requirements, and establish financing and fixed unit prices for treatment and immobilization of the high-level wastes. At the end of Part B-1, DOE will decide whether to proceed with Part B-2. During Part B-2, DOE will pay fixed unit prices for completion and acceptance of waste-treatment services according to contract specifications.

The contract with BNFL, Inc., requires BNFL, Inc., to perform value engineering studies to identify potential technologies, process flows, productivity improvements, etc., to improve cost and schedule performance.

The Department also continues its efforts to find innovative ways to drive down cost of financing and reduce risks by identifying alternative technologies.

During Phase II, after completion of Phase I, DOE plans to complete processing the remaining tank waste through a second competitive procurement. The Phase II plan will be based on information and experience gained from Phase I.

In Phase I, wastes will be retrieved from the tanks and separated into low-activity and high level waste. These wastes will be immobilized for storage and disposal according to specifications which meet all Federal and State regulations. DOE will retain oversight responsibility for radiological and nuclear safety and for certain aspects of environmental compliance. The regulatory approach will be to use, when possible, established and functioning external regulatory authorities.

BNFL, Inc., will be responsible for protection of human health and the environment from radioactive materials, hazardous materials, contamination from dangerous wastes, and non-radiological worker safety and health from conventional hazards.

The *Report to Congress - Treatment and Immobilization of Hanford Radioactive Tank Waste*, dated July 1998, provided the decision process used by the Department in proceeding into Part B-1 with BNFL, Inc.. Additional detail was also provided on the business, financial, regulatory, technical, and management aspects of the BNFL, Inc. contract.

The cost of Tank Waste Remediation System Privatization has increased over the costs presented in the FY 1999 Congressional Budget as a result of the Department proceeding with a facility capable of operating for 30 years. By proceeding with the BNFL, Inc., concept the Department has a greater range of technical and operational options than originally envisioned in the FY 1999 Congressional Budget. These options provide the ability to lower the total life cycle costs of treating the Hanford Tank Waste.

Prior year appropriations of \$385.0 million and the FY 2000 appropriation of \$106.0 million will be used to authorize BNFL, Inc., to proceed with Part B of the contract for waste treatment. It is anticipated that there will be two primary work scopes accomplished in FY 2000 by the Tank Waste Remediation System privatization contractor: (1) the completion of detailed approximately 30 percent design and (2) the ordering of long-lead time material.

BNFL, Inc., will be required to reach financial closure (obtaining private sector financing for the construction of their facility) prior to the start of construction. In order to obtain financing BNFL, Inc., will have to complete approximately 30 percent design work. Detail design work involves the development of all structural detail drawings, mechanical systems design and detail drawings, electrical design and detail drawings, and all radiological, nuclear and process safety analyses required to support the design work.

During the development of the detail drawings, BNFL, Inc., will start to order the long-lead time materials required to support the construction of the facility, typically those items that require several years to obtain once the order is submitted. Structural long-lead time material would include any special structural members (unusual forms or sizes). Mechanical long-lead time materials include the cesium ion exchangers, Hastalloy tanks, Hastalloy piping, Hastalloy fittings, the low activity waste and high level waste melters, and their respective control systems. Special distributive control systems will be ordered downstream to be completed prior to installation. The Department has a decision point for proceeding with BNFL, Inc. from Phase B-1 to Phase B-2 establishing a notice to proceed to construction in August 2000.

The appropriations will also cover the remote possibility of termination of the contract. The funds will eventually be used to reimburse capital expenditures after waste treatment services begin.

Fiscal Year 1996 funding of \$54.0 million from within the Defense Environmental Restoration and Waste Management Appropriation, Waste Management Program, was used to award Phase 1, Part A of the contract, and was costed in FY 1998.

Outlays from the Defense Environmental Restoration and Waste Management Appropriation may be costed in FY 2000 and FY 2001 to maintain BNFL in a position to proceed into Part B-2 in the event that negotiations between the Department and BNFL; the Department's decision making and the Congressional review do not occur within the 24 month time frame for Part B-1.

4. Details of Cost Estimate

	(dollars in thousands)	
	Current Estimate	Previous Estimate
Facility Construction	5,251,881	1,651,000
Facility Operations	1,724,047	1,438,318
Deactivation	214,119	172,366
Financing	2,528,848	439,000
Taxes	1,130,215	680,000
Fee/Profit	1,638,890	763,316
TOTAL	12,488,000	5,144,000

5. Method of Performance

In September 1996, DOE awarded contracts to two teams led by the BNFL, Inc., and Lockheed Martin Advanced Environmental Services. The contracts were for the Phase 1, Part A of this project. The contractors were requested to demonstrate the technical and business viability of using privatized facilities to treat and immobilize Hanford tank wastes; define and maintain required levels of nuclear, radiological and occupational safety; maintain environmental protection and compliance; and reduce life-cycle costs and remediation time. Based on their technical submittals, the Department selected BNFL to proceed with Phase I, Part B. In Part B, BNFL will finance, design, construct, operate, and deactivate their own facilities. Site infrastructure support to include Tank Retrieval systems, roads, utilities, etc. will be provided by the government utilizing the existing Management and Integration contractor. Phase I is expected to last 19 years and process approximately 6 percent to 13 percent of the tank waste volume.

BNFL, Inc., must finance the project, design the equipment and facility, apply for and receive required permits and licenses, construct the facility and bring it on-line, operate the facility to treat waste, and deactivate the facility. The contractor can recover the resources it has invested only through the delivery of acceptable services paid for by DOE on a fixed-unit-price basis. The underlying intent is to transfer the primary share of the financial, performance, and operational responsibility for the treatment effort from the Government to the contractor.

6. Schedule of Project Funding and Other Related Funding Requirements

(Dollars in Thousands)

	Prior Years	FY 1998	FY 1999	FY 2000	Outyears	Total
Project Cost						
Facility Cost						
Payments to Vendors	0	0	0	50,000	5,416,000	5,466,000
Other Project Cost						
Facility Operations – payments to contractor		54,000 ^a	0	0	5,016,000	5,070,000
Facility Support – M&O support/Other ^b	0	101,000	112,000	133,000	1,597,000	1,952,000
Total, Other Project Cost	0	155,000	112,000	133,000	6,613,000	7,022,000
Total Project Cost	0	155,000	112,000	183,000	12,029,000	12,488,000

7. Related Annual Funding Requirements

(FY 2000 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.

Total related annual funding	NA	NA
--	----	----

^a Represents payment to competing vendors for demonstration under Phase 1 which was funded from the EM base operating program.

^b Facility infrastructure support (e.g. utilities, fire protection, etc.) are budgeted in the Defense Environmental Restoration and Waste Management, Post 2006 Completion Appropriation for the Richland Operations Office.

97-PVT-2, Advanced Mixed Waste Treatment Project, Idaho Falls, Idaho

Significant Changes

Total Project Cost has been revised from \$1,078.9 million to \$1,115.4 million. The increase is due to a change in the production schedule from the initial forecast. An increase of \$7.8 million to life cycle cost results from escalated unit prices being applied to larger production quantities in later periods than were originally planned.

The second factor is a change in the escalation rates from the OMB required rates used in the initial estimates to the economic index based escalation negotiated in the Advanced Mixed Waste Treatment Project contract. This change resulted in increased estimated life cycle costs of \$28.7 million.

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	4Q 1999	1Q 2003	569,400 ^a	1,173,000 ^b
FY 1999 Budget Request (<i>Preliminary Estimate</i>)	n/a	n/a	4Q 1999	1Q 2003	569,400	1,078,900
FY 2000 Budget Request (<i>Current Estimate</i>)	n/a	n/a	4Q 1999	1Q 2003	569,400	1,115,400

^a These estimates are based on a negotiated firm fixed price contract with a commercial firm. The contract includes a provision for price redetermination 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 redetermination or economic price adjustment and is fixed.

^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 Budget Authority requests for Privatization of \$569.4 million; EM Base Program requests for direct payments to the vendor for Licensing and Permitting of \$16.3 million, Facility Operations of \$434.8 million, and D&D of \$22.7 million. It also includes \$67.4 million of M&O support and \$4.8 million of other project office costs (e.g. NEPA).

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs ^a
Design			
1997			
Construction			
1997	70,000	0	0
1998	0	11,497	0
1999	87,252	115,839	0
2000	110,000	109,530	0
2001	65,000 ^b	64,740	0
2002	40,000 ^b	39,669	0
2003	105,000 ^b	104,877	22,700
2004	92,148 ^b	123,248	102,300
2005	0	0	159,400
2006	0	0	159,400
Outyears	0	0	125,600

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 British Nuclear Fuels Limited, Inc., 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 Idaho National Engineering and Environmental Laboratory and DOE mixed wastes. The project scope is to treat Idaho National Engineering and Environmental Laboratory alpha and Transuranic mixed waste, as well as other DOE mixed waste in the complex, through a private sector treatment facility located on the Radioactive Waste Management Complex at Idaho National Engineering and Environmental Laboratory.

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 Idaho National

^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 cost profile has been changed to reflect BNFL's latest production schedule.

^b The amounts shown for FY 2001 through FY 2004 reflect current program baseline requirements. The Department will consider these requirements in the formulation of future budget requests.

Engineering and Environmental Laboratory Transuranic Storage Area of Radioactive Waste Management Complex. 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 RCRA hazardous waste constituents and radioactivity. Some wastes also contain Toxic Substances and Control Act regulated materials such as polychlorinated biphenyls. No more than 4,100 kilograms (kg) of elemental mercury, and approximately 2.1 million 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, NM. Non-transuranic wastes which are not allowed to be disposed of at 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 RCRA Land Disposal Restrictions. The treatment process will size and/or re-package waste into standardized containers; destroy Polychlorinated biphenyls, 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 agreement, 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 late 2003. The State of Idaho will provide RCRA and Clean Air oversight. The EPA Region 10 will provide oversight of the Toxic Substances and Control Act permit.

The FY 1997 appropriation of \$70.0 million represented an estimate of the private sector's capital investment based on the December 1994 Feasibility Study. The budget for FY 1999 of \$87.3 million and the Budget Request for FY 2000 of \$110.0 million for this project provides funding for the initiation of physical construction (including advance procurement of major equipment) phase 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 - \$434.8 million for operations and \$22.7 million D&D. An additional \$65.4 million from the appropriation will be requested to provide M&O support for the privatization effort and \$1.2 million for other project office costs..

4. Details of Cost Estimate

Total Capital cost is estimated to be \$569.4 million based on the fixed-price contract awarded in December 1996.

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 testing; Phase III consists of facility operations, RCRA Closure & Decontamination & Decommission. The services shall treat waste to meet RCRA Land Disposal Restrictions. Meeting this requirement will also fulfill Waste Isolation Pilot Plant Waste Acceptance Criteria, and Toxic Substances and Control Act requirements. Transportation support for shipment of the wastes from Idaho National Engineering and Environmental Laboratory to 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 1998	FY 1999	FY 2000	Outyears	Total
Project Cost						
Facility Cost						
Payments to Vendors . . .	0	0	0	0	569,400	569,400
Other Project Cost						
Facility Operations – payments to vendors ^a . . .	1,300	6,800	8,200	0	457,500	473,800
Facility Support – M&O support/Other ^b	1,900	1,500	1,000	1,200	66,600	72,200
Total, Other Project Cost . . .	3,200	8,300	9,200	1,200	524,100	546,000
Total Project Cost	3,200	8,300	9,200	1,200	1,093,500	1,115,400

^a Of the total, \$16.3 million will be paid for preliminary facility and process design activities, licensing and permitting (Phase 1 costs) funded from EM base operating program. Outyear payment to vendors include \$434.8 million for facility operations and \$227.7 million for D&D.

^b Facility infrastructure support (e.g. utilities, fire protection, etc.).

7. Related Annual Funding Requirements

(FY 2000 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.

Total related annual funding	N/A	N/A
------------------------------------	-----	-----

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

Significant Changes

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	3Q 2000	3Q 2002	127,000	369,439
FY 2000 Budget Request (<i>Current Estimate</i>)	N/A	N/A	4Q 2001	4Q 2003	77,000	211,588

2. Financial Schedule

(Dollars in Thousands)

Fiscal Year	Appropriations ^a	Obligations ^b	Costs
Design ^c			
1997			
Construction			
1997	65,000 ^d	0	0
1998	0	3,964	0
1999	0	0	0
2000	12,000	0	0
2001	0	73,036	0
2002	0	0	0
2003	0	0	58,000
2004	0	0	19,000
Outyears ^e	0	0	0

3. Project Description, Justification and Scope

The Department of Energy will transfer remote handled transuranic sludge from 13 different tanks at the Oak Ridge National Laboratory into eight storage tanks which contain the majority of the waste sludge and are located in the Melton Valley area. In addition to sludge, the transuranic project includes approximately 550 cubic meters of remote-handled solids and approximately 1,000 cubic meters of contact handled solids. Foster Wheeler has been contracted with to remove the sludge from the tanks and treat the sludge, solids and supernate in an on-site facility to meet disposal requirements, thereby satisfying the State of Tennessee Commissioner's Order requirements. All transuranic solids would be delivered to the private vendor for treatment, followed by disposal at Waste Isolation Pilot Plant.

The Department has approximately 900 cubic meters of remote handled transuranic sludge and approximately 1,600 cubic meters of alpha low-level supernate stored in various tanks at the Oak Ridge National Laboratory. Three different treatment options have been analyzed, which include procurement

^a For multi-year funded projects, appropriation is needed a year ahead of contract commitments to preclude anti-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 Reflects appropriation in FY 1997 from Defense Environmental Restoration and Waste Management Appropriation, Fixed Asset Acquisition Account.

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

of waste treatment service in a privately owned facility on leased land, a new Waste Handling and Packaging Plant for treatment services by the existing Management and Operating contractor, and conversion of an existing Oak Ridge National Laboratory Hot-cell facility for treatment by the existing Management and Operating contractor. The privatization option was chosen to reduce cost and improve schedule. Obtaining a privatization contract through competitive procurement is expected to lead to cost savings/avoidance of \$400.0 million (58 percent) compared to the cost estimate for the traditional Management and Operating contract approach. Additionally, the private sector schedule is expected to save five years over the Management and Operating based estimate.

Originally, the treatment of the Transuranic sludges and Transuranic solids were submitted as separate projects (in FY 1997 and FY 1998 respectively). Greater cost efficiencies were obtained by combining these two projects into a single procurement.

A four phase contract for the treatment of the waste, through a competitive procurement, was awarded to Foster Wheeler Environmental Corporation in August 1998. Phase I will be a fixed-price procurement for the permitting and licensing of the treatment facility. The Department will isolate and fence the Melton Valley Storage Tank area and roadway access from state highway 95 and lease this area to the contractor. During Phase I, the contractor will perform all design and engineering needed to obtain applicable permits and licenses for their treatment process. Phase I will be fully funded by the contractor. The contractor will be reimbursed by DOE after satisfactorily completing Phase I scope of work. The Phase I costs for licensing and permitting will be funded from the EM base operating program. Upon completion of Phase I and National Environmental Policy Act (NEPA) analysis, Phase II will proceed with construction of the treatment system and any pre-testing required by the disposal facilities or the regulatory agencies. Phase II will be fully funded by the contractor. Phase III will be performed on a fixed unit price basis and will consist of removal of the waste sludge from the tanks and treatment of sludge and solid waste in the licensed/permited facility. The contractor will recover their Phase II costs during Phase III treatment. Phase IV will consist of decontamination and decommissioning. A portion of the contractor's payment will be retained by DOE during the Phase III, to be paid when Decontamination & Decommissioning is complete.

The DOE will provide area fencing, roadway upgrades and NEPA documentation. Contract was awarded in August 1998 with licensing and permitting completion by FY 2001. Construction is scheduled for completion and treatment will begin in 2003. Project close out is scheduled for FY 2007 with Decontamination & Decommissioning completed in FY 2009.

It is anticipated that the contractor will obtain permits from the Environmental Protection Agency and Tennessee Department of Environment and Conservation. The project must be completed and executed under the Tennessee Department of Environment and Conservation Commissioner's Order.

The FY 1997 funding level of \$65.0 million was sufficient for the purpose of initial obligations for the contract to the vendor. The additional amount of \$12.0 million, is required for the purpose of completing the full obligation on the contract. 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 for \$116.6 million will be made within the Defense Environmental Restoration and Waste Management Appropriation, for the purpose of making payments to the vendor for the contractually required service or product. This estimate reflects a change from that cited in the FY 1999

Congressional Request due to combining the project workscope originally proposed in FY 1998 with the privatization project appropriated in FY 1997 under the Fixed Assets Acquisition Account resulting in a cost savings. An additional \$18.0 million from the Defense Environmental Restoration and Waste Management appropriation will provide for support of the privatization effort.

4. Details of Cost Estimate

(Dollars in Thousands)

Current Estimate	Previous Estimate
------------------	-------------------

The data required for this section equating to the Total Estimated Cost is not available at this time. The Request For Proposal for this project is based on total project requirements rather than just the construction portion. The Department will ensure the information is available in the future.

N/A	N/A
-----	-----

5. Method of Performance

Two draft Invitation for Bids were released for potential contractor review and comment. Applicable comments were incorporated into the final Request for Proposal which 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 shall complete construction no later than December 31, 2002.

The Department will lease the land and 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 and ownership of the facility will revert to the Department of Energy.

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 1998	FY 1999	FY 2000	Outyears	Total
Project Cost						
Facility Cost						
Payments to Vendors . . .	0	0	0	0	77,000	77,000
Other Project Cost						
Facility Operations – payments to vendors . . .	0	0	15,563 ^a	8,380	92,670	116,613
Facility Support – M&O support/Other	0	3,900	3,299	3,000	7,776	17,975
Total, Other Project Cost . . .	0	3,900	18,862	11,380	100,446	134,588
Total Project Cost	0	3,900	18,862	11,380	177,446	211,588

7. Related Annual Funding Requirements

(FY 2000 dollars in thousands)

Current Estimate	Previous Estimate
------------------	-------------------

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

Total related annual funding	0	0
--	---	---

^a Payment to vendor for facility design and permitting.