Uranium Facilities Maintenance and Remediation

Proposed Appropriation Language

For necessary expenses to maintain, decontaminate, decommission, and otherwise remediate uranium processing facilities, [$393,367,000] $363,425,000, of which [$345,038,000] $252,641,000 shall be derived from the Uranium Enrichment Decontamination and Decommissioning Fund, all of which shall remain available until expended: [*Provided*, that $72,000,000 of amounts derived from the Fund for such expenses shall be available in accordance with Title X, subtitle A, of the Energy Policy Act of 1992]. *(Energy and Water Development Appropriations Act, 2001, as enacted by Section 1(a)(2) of Public Law 106-377.)*

Uranium Facilities Maintenance and Remediation

Program Mission

The Environmental Management (EM) program is responsible to maintain, decontaminate, decommission, and otherwise remediate uranium processing facilities. This includes the environmental management responsibilities at the nation's three gaseous diffusion plants at Paducah, Kentucky; Portsmouth, Ohio; and East Tennessee Technology Park in Oak Ridge, Tennessee.

The Uranium Facilities Maintenance and Remediation appropriation includes two program accounts, the Uranium Enrichment Decontamination and Decommissioning Fund and the Other Uranium Activities.

Other Uranium Activities was transferred to EM from the Office of Nuclear Energy's, Science and Technology Program in FY 2001. This program supports important government activities related to the Federal Uranium Enrichment Program that were not transferred to the United States Enrichment Corporation. These activities include management of highly enriched uranium; management of the facilities at the Paducah and Portsmouth sites; pre-existing liabilities; management of the Department's inventory of depleted uranium hexafluoride and other surplus uranium inventories; management of the DOE Material Storage Areas at Paducah; oversight of the depleted uranium hexafluoride conversion project; and placement and maintenance of the Portsmouth Gaseous Diffusion Plant in cold-standby.

The FY 2002 request for the Uranium Facilities Maintenance and Remediation appropriation is $363,425,000. The Uranium Enrichment Decontamination and Decommissioning Fund portion is $252,641,000, of which $1,000,000 will be for the Uranium/Thorium Licensee Reimbursement program under title X, subtitle A, of the Energy Policy Act of 1992. The remaining $110,784,000 will be for Other Uranium Activities, formerly managed by the Office of Nuclear Energy, Science and Technology.

Program Goal

The EM program has established a goal of cleaning up as many of its contaminated sites as possible by 2006 in a safe and cost-effective manner. By working toward this goal, EM can reduce the hazards presently facing its workforce and the public, and reduce the financial burden on the taxpayer. The FY 2002 budget request reflects the EM program's emphasis on site closure and project completion - in other words, finishing our work as quickly as possible.

Program Objectives

- Work aggressively with stakeholders and regulators to address the compliance challenges faced by the EM program.

- # Continue to address the most serious environmental risks across the DOE complex and ensure that facilities and activities pose no undue risks to the public and worker safety and health.
- # Place and maintain Portsmouth Gaseous Diffusion Plant in cold-standby.
- # Manage Department's inventory of depleted uranium hexafluoride in a safe manner.
- # Continue surveillance and maintenance of facilities.

Performance Measures

One way EM is ensuring success is to establish and manage based on sound performance measures. The EM program has been actively incorporating the requirements of the Government Performance and Results Act into its planning, budgeting, and management systems. At the programmatic level, these requirements are reflected in "corporate" performance measure and key milestone reporting and tracking. The EM management uses the corporate performance measures along with other site-specific and project-specific objectives on an annual basis to ensure that progress is being made toward EM's goal of site closure and project completion.

The chart below contains a summary of EM corporate performance measures for this program account. Detailed performance measure information can be found in the site details that follow this program overview.

EM Corporate Performance Measures [a] [b]

	FY 2000 Actuals	FY 2001 Estimate	FY 2002 Estimate	Life-cycle
Uranium Facilities Maintenance and Remediation				
Number of Release Site Completions	0	7	3	559
Number of Facilities Decommissioned	0	0	0	164
Number of Facilities Deactivated	0	0	0	1
Volume of Mixed Low-Level Waste Treated (m^3)	10	150	75	885
Volume of Mixed Low-Level Waste Disposed (m^3)	5,942	4,392	3,679	27,879
Volume of Low-Level Waste Disposed (m^3)	3,067	576	2,571	22,444

[a] Life-cycle estimates for release sites, facilities, and high-level waste canisters include pre-1997 actuals. Waste type, nuclear materials, and spent nuclear fuel estimates are from fiscal years 1998 through 2070. In most instances, life-cycle refers to 1997-2070.

[b] This chart provides a consistent set of performance measures for the total EM program. The more detailed project-level justification provides a description of significant activities for each project including project-specific milestones, as applicable.

Significant Accomplishments and Program Shifts

The FY 2001 Congressional Appropriation transferred the Uranium Programs from the Department of Energy's Office of Nuclear Energy, Science and Technology Program to the Office of Environmental Management. Creation of a new appropriation, "Uranium Facilities Maintenance and Remediation", includes the Uranium Enrichment Decontamination and Decommissioning Fund and Other Uranium Activities.

Funding Profile

(dollars in thousands)

	FY 2000 Comparable Appropriation	FY 2001 Original Appropriation	FY 2001 Adjustments	FY 2001 Comparable Appropriation	FY 2002 Request
Uranium Facilities Maintenance and Remediation					
Uranium Enrichment Decontamination and Decommissioning Fund					
Decontamination and Decommissioning Fund	227,407	273,038	-9,051	263,987	251,641
Uranium/Thorium Reimbursements	72,000	72,000	-158	71,842	1,000
Subtotal, Uranium Enrichment Decontamination and Decommissioning Fund	299,407	345,038	-9,209	335,829	252,641
Other Uranium Activities	36,702	62,400	-5,727	56,673	110,784
Subtotal, Other Uranium Activities	36,702	62,400	-5,727	56,673	110,784
Subtotal, Uranium Facilities Maintenance and Remediation	336,109	407,438	-14,936	392,502	363,425
Reduction for Safeguards and Security	0	-14,071	14,071	0	0
Total, Uranium Facilities Maintenance and Remediation	336,109	393,367	-865	392,502	363,425

Public Law Authorizations:

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, 102-486, Title X, Subtitle A, "Energy Policy Act of 1992"

Funding by Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
Oak Ridge Operations Office					
East Tennessee Technology Park	115,239	114,281	69,843	-44,438	-38.9%
Oak Ridge Operations Office	11,938	25,937	13,000	-12,937	-49.9%
Oak Ridge Reservation	3,156	6,076	5,504	-572	-9.4%
Paducah	70,183	86,505	72,982	-13,523	-15.6%
Portsmouth [a]	63,593	87,861	201,096	113,235	128.9%
Subtotal, Oak Ridge	264,109	320,660	362,425	41,765	13.0%
Multi-Site	72,000	71,842	1,000	-70,842	-98.6%
Total, Uranium Facilities Maintenance and Remediation	336,109	392,502	363,425	-29,077	-7.4%

[a] Please refer to the Major Issues at the end of this section for explanation of Portsmouth funding adjustments necessary following execution of a pending FY 2001 reprogramming.

Major Issues

The Administration's plan to place the Portsmouth Gaseous Diffusion Plant in cold standby and turnover activities create several challenges for the Environmental Management Program. On June 21, 2000, United States Enrichment Corporation announced that Portsmouth enrichment facilities would cease operations by June 2001 and that the facilities would be returned to DOE by June 2002. United States Enrichment Corporation (USEC) will continue to operate its transfer and shipping activities at Portsmouth until 2006 when similar facilities are available at the Paducah plant. On October 6, 2000, the Secretary of Energy announced DOE's decision regarding the future mission of Portsmouth and placing it in cold standby cleanup.

Portsmouth transition and turnover create several issues and challenges for EM and the Office of Nuclear Energy, Science and Technology that are being coordinated closely. One key issue both in FY 2001 and in FY 2002 is a winterization/process waste heat replacement: Over eight million square feet of process buildings are heated by recovered waste heat from the enrichment process; when the process is shut down in June 2001, waste heat will not be available. Winterization and an alternative heat source are needed to ensure fire protection piping will not freeze and burst; workers performing surveillance and maintenance in the building have an acceptable work environment; transformers, instrument systems and other equipment are protected; and heat required by Resource Conservation and Recovery Act Part B permit is provided in X-7725 and X-326.

The Department, through its Oak Ridge Operations Office, is currently developing plans and cost estimates to support these transition activities beginning in FY 2001. In order to accomplish the winterization described above in time for the next heating season and to preserve enrichment capability at the plant, the Department has developed an FY 2001 reprogramming in order to fund the needed winterization, cold standby, and worker and community transition activities in the near term. Although activities within this appropriation account are both sources and requirements associated with this reprogramming, the budget has not been adjusted to reflect those FY 2001 changes while the reprogramming action is still pending.

This budget request reflects $125 million in additional funding for the Portsmouth Site within both Uranium Enrichment Decontamination and Decommissioning and Other Uranium Program activities in order to provide sufficient funding to cover the cost for both FY 2001 and FY 2002 requirements resulting from United States Enrichment Corporation's cessation of uranium enrichment. Upon execution of the pending reprogramming, adjustments to the FY 2002 request will need to be made in order to replace some of the sources for the FY 2001 reprogramming that are not from Portsmouth Site activities. In order to properly reflect this replacement, the total funding for Portsmouth activities will need to be adjusted downward, to some degree, in order to make funds available to replace those taken from other site sources.

Uranium Enrichment Decontamination and Decommissioning Fund

Program Mission

The Uranium Enrichment Decontamination and Decommissioning Fund was established by the Energy Policy Act of 1992 to carry out environmental management responsibilities at the nation's three gaseous diffusion plants. The plants are located in the East Tennessee Technology Park in Oak Ridge, Tennessee; at the Portsmouth site in Ohio; and at the Paducah site in Kentucky. Beginning in FY 2002, activities will include the Depleted Uranium Hexafluoride project and research and development. The Energy Policy Act also directs that the Fund be used to reimburse licensees operating uranium or thorium processing sites for the costs of environmental cleanup at those sites, subject to a site specific reimbursement limit. Key to achieving this mission are the implementation of project management, contracting and technology strategies. Project management activities are focused on multi-year planning and maintaining project controls to meet the Office of Environmental Management's (EM) goals for safe, cost-effective and timely site closure. Project management cost savings result, in part, from integrating multiple projects through sequencing based on programmatic focus, critical path considerations, execution logic, mortgage reduction, resource leveling and subcontracting strategy. Emphasis is placed on subcontracting the largest portion of the work to best-in-class subcontractors through competitively bid fixed-price and fixed-unit price subcontractors with performance specifications. Pro-active application of innovative and alternative technologies is used to reduce cost, minimize risk and compress schedules. These include technologies such as in-situ oxidation using permanganate-based systems, and dynamic underground stripping/hydrous pyrolysis oxidation.

The Uranium Enrichment Decontamination and Decommissioning Fund addresses the cleanup liabilities at the three gaseous diffusion plants that are attributable to historical Department of Energy (DOE) operations for weapons and commercial fuel. The ongoing operations of the enrichment facilities are managed by the privatized commercial United States Enrichment Corporation. Ultimate cleanup of the facilities that are leased from the Department by the United States Enrichment Corporation will commence when operations are completed and the leases are terminated. The Uranium Enrichment Decontamination and Decommissioning Fund includes contributions from annual appropriations as well as contributions from commercial utilities based upon historical purchases of enrichment services, measured in "separative work units." The United States Enrichment Corporation announced their intention to cease enrichment operations at the Portsmouth Gaseous Diffusion Plant in FY 2001.

Program Goal

The goal of the Uranium Enrichment Decontamination and Decommissioning Fund is to clean up the surplus enrichment plants as soon as possible and reimburse licensees for their remediation activities at uranium and thorium sites. The enrichment plants include valuable facilities and equipment, and the cleanup costs will be offset to the extent that the Department is able to recover the value from these surplus assets. Achieving the program goal requires aggressive contract management initiatives which have been implemented to provide incentives for accelerating the program and to reduce cost. The Management and Integration contracting approach utilizes competitively bid fixed-price and fixed-unit cost contracts to reduce project costs. Additionally, resequencing the disposition of waste to avoid impact on critical path remediation has resulted in acceleration of the low-level waste program. These actions focus on managing the contract for results and placing emphasis on cost control, risk management, and measuring and analyzing earned value. These innovative approaches and "out of the box" thinking on this contract are the desired result of generating cost savings, cost avoidance, technology deployment and accelerated clean up. Beginning in FY 2002, the depleted uranium hexafluoride conversion project activities to construct and operate two facilities will be under the Uranium Enrichment Decontamination and Decommissioning Fund, as well as research and development to find beneficial uses for depleted uranium.

Program Objectives

- The Department plans to "re-industrialize" the surplus sites and infrastructure which will reduce the Department's cleanup cost and will transfer the surplus federal facilities to private sector firms for productive re-use. In this way, the local socio-economic impacts of shutting down these facilities will be partially offset by increased commercial job creation.
- Remediate East Tennessee Technology Park, Portsmouth, and Paducah release sites in accordance with applicable regulations and dispose of legacy waste at Paducah and Portsmouth.
- Manage the characterization and cleanup of the DOE Material Storage Areas at Paducah.
- Complete the design, National Environmental Policy Act and site preparation activities needed to begin constructing two depleted uranium hexafluoride conversion facilities. (Transfers to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002).
- Conduct research and development to find beneficial uses for depleted uranium forms and other materials to reduce future program costs. (Transfers to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002).

Significant Accomplishments and Program Shifts

Aggressive contract management initiatives have been implemented to provide incentives for accelerating the program and to reduce cost. The Management and Integration contracting approach utilizes competitively bid fixed-price and fixed-unit cost contracts to reduce project costs. These actions focus on managing the contract for results and place emphasis on cost control, risk management, and measuring and analyzing earned value.

In the latter part of FY 1999, a DOE independent investigation of environment, safety and health issues at the Paducah Gaseous Diffusion Plant was conducted. The Department developed and implemented a Corrective Action Plan to resolve these issues. A major action in that plan included resolution of criticality safety concerns in 12 of the DOE Material Storage Areas, and improvement of oversight of contractor activities by increasing federal staff responsible for oversight and establishing formal, regularly scheduled performance reviews to ensure contractor implementation of DOE and regulatory requirements. DOE completed criticality safety characterization of 12 high priority DOE Material Storage Areas in June 2000. No criticality concerns were found and the project was completed prior to the scheduled date.

In the course of developing and implementing corrective actions in response to the DOE independent investigation of environment, safety and health issues at the Paducah Gaseous Diffusion Plant, it became apparent that some of the DOE Material Storage Areas might contain Resource Conservation and Recovery Act material. In FY 2001, the Department will initiate an extensive effort to characterize these DOE Material Storage Areas to determine if Resource Conservation and Recovery Act waste is present and to develop a plan for safely dispositioning any such material identified (i.e., hazardous waste). Due to scope increase, other regulatory driver activities (Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and Federal Facility Agreement milestones) will be deferred in FY 2002.

Public Law 105-204, required the Secretary of Energy to develop a plan and propose legislation for the disposition of depleted uranium hexafluoride and for the construction of facilities at Paducah and Portsmouth to treat and recycle depleted uranium hexafluoride consistent with the National Environmental Policy Act. The Department responded to that requirement by initiating a procurement action through release of a Request for Expressions of Interest on March 4, 1999, and issuing the "Final Plan for the Conversion of Depleted Uranium Hexafluoride, " in July 1999. The Department's *Final Programmatic Environmental Impact Statement for Alternative Strategies for the Long-Term Management and Use of Depleted Uranium Hexafluoride,* issued April 15, 1999, described the preferred alternative for managing the depleted uranium hexafluoride which is to begin conversion of the depleted uranium hexafluoride inventory as soon as possible for use or long-term storage. The Record of Decision concerning the Department's long-term management of the use of depleted uranium hexafluoride was issued in August 1999. The Department will initiate project-specific environmental impact statements and activities to convert the depleted uranium hexafluoride inventory to a more stable form. The Department intends to complete National Environmental Policy Act review(s) prior to performing final design and commencing construction.

In FY 1998, the Office of Nuclear Energy, Science and Technology received a total of $66 million from United States Enrichment Corporation under two Memoranda of Agreement for the management and disposition of 11,212 depleted uranium hexafluoride storage cylinders transferred from United States Enrichment Corporation

to DOE. Between FY 2000 - FY 2001, $14.6 million has been used to build new concrete depleted uranium hexafluoride cylinder storage yards at Paducah, Kentucky, and Portsmouth, Ohio, to accommodate the 11,212 cylinders. Additionally, in FY 2001 the Department plans to use $12 million of these Memoranda of Agreement funds combined with $21 million in appropriations to initiate the design of two depleted uranium hexafluoride conversion facilities. It is also anticipated that in FY 2002, the remaining $12 million portion of the Memorandum of Agreement funding will be provided for this project. However, this is dependent upon current needs-assessment being conducted for cylinder maintenance and other requirements at Paducah and Portsmouth.

EM Corporate Performance Measures [a] [b]

	FY 2000 Actuals	FY 2001 Estimate	FY 2002 Estimate	Life-cycle
Uranium Facilities Maintenance and Remediation / Uranium Enrichment Decontamination and Decommissioning Fund				
Number of Release Site Completions	0	7	3	559
Number of Facilities Decommissioned	0	0	0	164
Number of Facilities Deactivated	0	0	0	1
Volume of Mixed Low-Level Waste Treated (m^3)	10	150	75	885
Volume of Mixed Low-Level Waste Disposed (m^3)	5,942	4,392	3,679	27,879
Volume of Low-Level Waste Disposed (m^3)	3,067	576	2,571	22,444

Funding Profile

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
Decontamination and Decommissioning Fund	227,407	263,987	251,641	-12,346	-4.7%
Uranium/Thorium Reimbursement	72,000	71,842	1,000	-70,842	-98.6%

[a] Life-cycle estimates for release sites, facilities, and high-level waste canisters include pre-1997 actuals. Waste type, nuclear materials, and spent nuclear fuel estimates are from fiscal years 1998 through 2070. In most instances, life-cycle refers to 1997-2070.

[b] This chart provides a consistent set of performance measures for the total EM program. The more detailed project-level justification provides a description of significant activities for each project including project-specific milestones, as applicable.

Total, Uranium Enrichment Decontamination and Decommissioning Fund	299,407	335,829	252,641	-83,188	-24.8%

Public Law Authorizations:

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

Public Law 102-486, Title X, Subtitle A, “Energy Policy Act of 1992"

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

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

Funding by Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
Oak Ridge Operations Office	227,407	263,987	251,641	-12,346	-4.7%
Multi-Site	72,000	71,842	1,000	-70,842	-98.6%
Total, Uranium Enrichment Decontamination and Decommissioning Fund	299,407	335,829	252,641	-83,188	-24.8%

Oak Ridge

Mission Supporting Goals and Objectives

Program Mission

The Uranium Enrichment Decontamination and Decommissioning Fund was established by the Energy Policy Act of 1992 and is carried out by the Oak Ridge Operations Office to cleanup the nation's three gaseous diffusion plants. The three gaseous diffusion plants are located in Oak Ridge, Tennessee, Portsmouth, Ohio, and Paducah, Kentucky. The gaseous diffusion plant in Oak Ridge was shut down in 1985. The plants in Portsmouth and Paducah have been operated by the United States Enrichment Corporation since 1993. The United States Enrichment Corporation announced their intention to cease enrichment operations at the Portsmouth Gaseous Diffusion Plant in FY 2001 and DOE announced their intentions to place the Plant in cold-standby. The Uranium Enrichment Decontamination and Decommissioning Fund supports decontamination and decommissioning, remedial actions, waste management, and surveillance and maintenance of the three gaseous diffusion plants. Beginning in FY 2002, activities include the Depleted Uranium Hexafluoride Conversion project and research and development. The fund is currently the sole funding source for cleanup at Portsmouth and Paducah, and is the dominant source of funds for the Oak Ridge Gaseous Diffusion Plant. The Uranium Enrichment Decontamination and Decommissioning Fund also reimburses licensees for cleanup of uranium and thorium processing sites that previously sold these materials to the Government.

Program Goal

The Oak Ridge Operations Office goals are: to continue ongoing remedial actions to prevent the spread of existing contamination, and continue waste management activities to address legacy waste at the sites; complete ongoing remedial actions including the DOE Materials Storage Area cleanup and waste management activities at Portsmouth; and complete ongoing remedial action and waste management activities at Paducah. Beginning in FY 2002, complete the necessary activities needed to construct and operate a depleted uranium hexafluoride conversion capability and continue research and development of uses for depleted uranium hexafluoride conversion products and other materials which is required by the State of Ohio's Environmental Protection Agency's Director's Findings of Facts and Orders. These activities transfer to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002. A tri-party team of State and Federal regulators and DOE managers continue to review the technical and management approaches at Paducah to allow for possible completion in 2010. This is a difficult task due to the many competing priorities at the three Gaseous Diffusion Plants. Comprehensive decontamination and decommissioning and cleanup of these sites cannot be completed until the privatized United States Enrichment Corporation terminates the leases on the two plants. On June 21, 2000, United States Enrichment Corporation announced that the Portsmouth Gaseous Diffusion Plant enrichment facilities would cease operations by June 2001 and that the facilities would be turned over to DOE

in June 2001 and completing turnover by June 2002. On October 6, 2000, the Secretary of Energy announced DOE's decision regarding the future mission of the Portsmouth Plant and placing it in cold standby. The Department's cleanup goal for the gaseous diffusion plants will allow reuse of the sites for industrial purposes. To fulfill this goal, the Department must remove hazardous materials, treat and dispose of legacy waste, remediate sites to meet industrial reuse standards, decontaminate facilities to allow reuse, and demolish unusable facilities. Where possible, new technologies will be employed to address waste treatment, groundwater cleanup, and facility decontamination to reduce costs, to reduce risks, and to improve the schedule. The East Tennessee Technology Park is implementing all of these aspects in the ongoing cleanup program. The Department is actively transitioning the site from a Federally-managed DOE installation to a privately-managed industrial park. The leasing program will be fully implemented by 2006. The timely cleanup of the Oak Ridge site will free up funds to address cleanup at other sites following the cessation of operations. The cleanup program is being carried out under the requirements of Federal and state compliance agreements that reflect community stakeholder involvement.

Program Objectives

The primary objective at Oak Ridge sites is to conduct remedial actions to limit the spread of contamination, waste management to remove legacy waste, and decommissioning to disposition the process and ancillary buildings. New technologies will be deployed, where possible, to address trichloroethylene contaminated soil and groundwater; long-term stabilization of buried waste (especially uranium waste); for treatment of mixed waste; and for facility decontamination. Another objective is to solve cleanup challenges related to the significant amount of legacy wastes, the size and physical condition of the processing facilities and the areal extent of soil and groundwater contamination. For example, the Paducah groundwater plumes contain one of the largest volumes of off-site contamination in the Department of Energy complex.

Funding is requested to continue remedial actions that will prevent off-site migration of contaminants through groundwater at Portsmouth and reduce further migration of off-site groundwater plumes at Paducah.

Beginning in FY 2002, complete the design, National Environmental Policy Act and site preparation activities needed to begin constructing two depleted uranium hexafluoride conversion facilities and conduct research and development to find beneficial uses for depleted uranium forms and other uranium program materials, such as empty cylinders, with the objective of reducing future program costs for cylinder management and conversion services. These activities transfer to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002.

The Oak Ridge Gaseous Diffusion Plant is shutdown, and the focus is on cleanup followed by re-use of viable facilities by private sector firms. Decommissioning of the three process buildings at the site will be completed to allow reuse.

In achieving our highest priority goals, the Oak Ridge sites will seek to apply innovative science and technology solutions that facilitate cleanup goals safer, faster and with less cost. For instance at Portsmouth and Paducah,

contaminated soil will be treated using novel technologies already being demonstrated at these sites, such as Dynamic Underground stripping, Phytoremediation and In Situ Bioremediation.

Significant Accomplishments and Program Shifts

East Tennessee Technology Park

- Completed Group 1 (five buildings) auxiliary facilities decommissioning/demolition project and continued deactivation of K-25 process building (FY 2000).
- Completed remedial actions at the K-1070 C/D G Pit and awarded a contract for cleanup of the K-1070 A, contaminated burial ground, addressing the source of contamination and reducing environmental and health risks at East Tennessee Technology Park (FY 2000).
- Initiated decommissioning in the K-31 building (FY 2000) .
- Completed shipments of stabilized pond waste and stored soils (20,000 drums, 13,120 tons) to Envirocare for disposal (2000).
- Submit watershed Record of Decision for Zone I of the East Tennessee Technology Park site to the regulators for approval (FY 2001).
- Complete disposal of 2,000 cubic meters of unstabilized pond waste in accordance with site treatment plan/Federal Facilities Compliance Act provisions (FY 2000/2001).
- Complete shipments of unstabilized pond waste to Envirocare for disposal (FY 2001).
- Initiate decommissioning of the K-29 building (FY 2001).
- Complete construction and begin operation of the British Nuclear Fuel Limited, Inc./Manufacturing Sciences Corporation K-33 supercompactor (FY 2001).
- Initiate decontamination of Building 1401 basement (FY 2001).
- Submit engineering evaluation/cost analysis to regulators for decommissioning of K-25 and K-27 buildings (FY 2001).
- Implement Remedial Action Surveillance and Maintenance Program in accordance with applicable environmental, safety and health, Federal, State, and DOE requirements (FY 2001).
- Complete decommissioning, verification, and turnover for industrial re-use at building K-1420 (under the Decon Recovery Services contract) (FY 2001).
- Continue cleanup of K-1070A contaminated burial ground, processing contamination releases from 26 trenches and 62 pits (FY 2002).
- Continue decommissioning of process buildings K-31 and K-29 (FY 2002).

Complete K-33 decommissioning and turnover for industrial reuse (FY 2002).

Paducah Gaseous Diffusion Plant

Completed Engineering Evaluation/Cost Analysis for accelerated removal of 7,500 tons of crushed drums, known as the Drum Mountain Removal Action project (FY 2000) and complete Engineering Evaluation/Cost Analysis for accelerated removal of the remaining scrap metal inventory stored at eight scrap pile locations, known as the Balance of Scrap Metal Removal Action project (FY 2001).

Completed Drum Mountain Removal Action (FY 2000); complete disposition of Drum Mountain waste (FY 2001); and initiate Balance of Scrap Metal Removal Action (FY 2001).

Continue planning activities and initiate decision documents for installation of site-wide sediment controls (FY 2001).

Completed scoping activities and initiated decision documents (FY 2000); complete decision documents, Remedial Design/Remedial Action Work Plan, and initiate remediation of the North South Diversion Ditch (FY 2001) and complete remedial action (FY 2002).

Initiated (FY 2000) and completed (FY 2001) Groundwater Operable Unit Feasibility Study and Proposed Plan.

Complete Groundwater Record of Decision No. 1 and Remedial Design Work Plan for contaminant source term removal at the C-720 Sump & C-745 Kellogg Building Sites (FY 2001).

Complete Six-Phase Heating innovative technology Treatability Study Work Plan for remediation of groundwater contamination sources around the C-400 Cleaning Facility (FY 2001).

Initiated (FY 2000) and complete (FY 2001) construction of an in-situ permeable reactive wall (Permeable Treatment Zone) innovative technology for the Southwest Plume.

Completed construction and initiated operation of the Lasagna innovative technology (FY 2000) and continue operations, system monitoring, and interim sampling (FY 2001).

Completed remedial investigation of burial grounds and release sites contributing to groundwater contamination an site evaluation of four electrical switch yards (FY 2000).

Completed trenching activities as directed by Department of Justice on investigation of the North South Diversion Ditch, provided data and documentation, assisted in records search (FY 2000).

Initiated planning activities (FY 2000), complete decision documents, and initiate site evaluation activities (FY 2001) for the C-410 Feed Plant Complex.

Issue the annual update to the Site Management Plan as part of the Federal Facilities Agreement; conduct five-year review for interim actions under the groundwater and surface water operable units; conduct Kentucky Pollutant Discharge Elimination System environmental monitoring and reporting; monitor, inspect, and maintain operating and closed landfills and complete associated regulatory

reporting under the Resource Conservation and Recovery Act and Solid Waste Permits and meet regulatory reporting required by compliance agreements (FY 2001).

- # Incorporate Integrated Safety Management Systems into all waste management activities (FY 2001).
- # Dispose of 900 polychlorinated biphenyl transformers and other mixed low-level waste to off-site commercial vendors (FY 2001).
- # Complete fire protection and Office of Safety and Health Administration electrical upgrades at five waste storage facilities (FY 2001).
- # Continue all mixed low-level waste treatability studies and treatment to meet site treatment plan requirements and complete all requirements for FY 2001 of the Toxicity Characteristic Leaching Procedure of the Federal Facility Compliance Act (FY 2001).
- # Dispose in on-site landfill, 3,000 tons of DOE and United States Enrichment Corporation industrial waste and dispose on-site waste currently managed as low-level waste that meets the C-746-U Landfill Waste Acceptance Criteria (FY 2001).
- # Complete characterization of 3,000 cubic meters of low-level waste for off–site disposal and 2.9 cubic meters of liquids and 1.7 cubic meters of solid transuranic waste for treatment (FY 2001).
- # Complete the construction and initiate operation of the low-level waste sorting and packaging facility (FY 2001).
- # Ship approximately 600 cubic meters of polychlorinated biphenyl/radioactive and Resource Conservation and Recovery Act/radioactive waste to Envirocare of Utah for disposal (FY 2001).
- # Continue characterization and disposal of remaining 9,000 drums of low-level waste stored outside (FY 2001).
- # Dispose of 488 cubic meters of mixed low-level waste at commercial permitted facilities (FY 2002).
- # Initiate characterization and remediation of 160 DOE Material Storage Areas to address the September 5, 2000, Notice of Violation related to potential hazardous waste stored in these areas (FY 2001); and continue cleanup in FY 2002 (FY 2002).

Portsmouth Gaseous Diffusion Plant

- # Completed risk reduction actions at the chemical cleaning facility (X-700) chemical and petroleum storage containment tanks and north drainage ditch, and northeast drainage ditch to prevent contaminant migration off-site via surface water pathways (FY 2000).
- # Completed installation of the multi-media cap on northern cap portion of the X-734 landfill (FY 2000).
- # Completed transition from investigation and interim corrective measures of contaminated soil source areas which will lead to final corrective measures implementation of groundwater contamination (primarily trichloroethylene) in FY 2002 and reduced legacy waste inventory (FY 2000).

- Complete design of final Corrective Measures Implementation for corrective action on 5-unit and X-749/X-120 groundwater plumes; and corrective action on the X-231A/X-231B burial ground (FY 2001).
- Accelerate Quadrants I and II corrective measure implementation design and construction for final soil and groundwater contamination sources to ensure completion in FY 2002; a Resource Conservation and Recovery Act consent order enforceable milestone (FY 2001).
- Initiate design/build of corrective action on X-701B groundwater plume and X-720 soil unit final corrective measures (Quadrant I) (FY 2001).
- Initiate risk reduction actions on X-701B and C (Quadrant II) (FY 2001).
- Operate and maintain the ongoing groundwater program at the site in accordance with regulatory requirements. This includes operation of existing groundwater treatment facilities which provide confinement of contamination on-site, and treatment for existing groundwater plumes, and operation of the site-wide groundwater monitoring program which tracks the fate of contamination (FY 2001).
- Conduct long-term surveillance and maintenance of the remedial action units and decommissioning and decontamination facilities in accordance with all regulatory and DOE requirements (FY 2001).
- Continue the storage of legacy mixed low-level waste and low-level waste, and sanitary and hazardous waste in accordance with all DOE Orders, contractor policies and procedures and, Federal and State regulations and permits (FY 2001).
- Waste treatment/disposal planned for FY 2001 will consist of waste identified through characterization to be non-mixed (i.e., Resource Conservation and Recovery Act or Toxic Substance Control Act waste) and must be dispositioned within the fiscal year. Characterization will continue in FY 2001 to meet milestones required by the Ohio Environmental Protection Agency Part B Permit and Site Treatment Plan (FY 2001).
- Accelerate disposal of approximately 300 containers of heavy metal sludge to ensure compliance with Site Treatment Plan milestones (FY 2001).
- Accelerate characterization of approximately 14,000 drums of Toxic Substance Control Act low-level waste solids (FY 2001).
- Decontamination and decommissioning projects in currently non-leased excess facilities (FY 2001).
- Complete X701-B soils remediation and construction of groundwater treatment facilities (FY 2002).
- Complete all Quadrant III Corrective Actions (FY 2002).
- The design and construction will be executed according to the prime contractors agreed upon schedule. The project specific National Environmental Policy Act documentation will be completed (FY 2002).
- At Portsmouth the depleted uranium hexafluoride conversion project will continue (FY 2002).

Funding Schedule

(dollars in thousands)

	FY2000	FY 2001	FY 2002
OR-193 / Long-Term Contractor Liabilities - Decontamination and Decommissioning Fund	2,414	5,446	4,695
OR-423 / East Tennessee Technology Park Remedial Action - Decontamination and Decommissioning Fund	16,519	13,221	4,453
OR-433 / East Tennessee Technology Park Decontamination and Decommissioning Fund	8,420	23,127	1,000
OR-443 / East Tennessee Technology Park Surveillance and Maintenance - Decontamination and Decommissioning Fund	11,473	20,637	19,390
OR-493 / East Tennessee Technology Park - Oak Ridge Operations Prime Contracts	69,402	47,101	33,000
OR-523 / Paducah Remedial Action	24,406	37,939	41,351
OR-543 / Paducah Surveillance and Maintenance	17,076	5,749	7,350
OR-553 / Paducah Waste Management	19,357	27,214	13,497
OR-593 / Paducah Long-Term Contractor Liabilities - Decontamination and Decommissioning Fund	0	5,027	0
OR-623 / Portsmouth Remedial Action	30,331	23,153	56,694
OR-643 / Portsmouth Surveillance and Maintenance	6,918	9,581	9,978
OR-653 / Portsmouth Waste Management	14,674	40,561	38,633
OR-693 / Portsmouth Long-Term Contractor Liabilities	0	600	8,600
OR-893 / Directed Support - Decontamination and Decommissioning Fund	6,417	4,631	3,000
OR-9C3 / Depleted Uranium Hexafluoride Conversion Project	0	0	10,000
Total, Oak Ridge	227,407	263,987	251,641

Funding By Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
East Tennessee Technology Park	105,814	104,086	57,843	-46,243	-44.4%
Oak Ridge Operations Office	6,417	4,631	13,000	8,369	180.7%
Oak Ridge Reservation	2,414	5,446	4,695	-751	-13.8%
Paducah	60,839	75,929	62,198	-13,731	-18.1%
Portsmouth [a]	51,923	73,895	113,905	40,010	54.1%

[a] Please refer to the Major Issues discussion in the previous section for explanation of Portsmouth funding adjustments necessary following execution of a pending FY 2001 reprogramming.

Total, Oak Ridge	227,407	263,987	251,641	-12,346	-4.7%

Metrics Summary

	FY 2000	FY 2001	FY 2002
Release Site			
Cleanups	0	7	3
Mixed Low-Level Waste			
Treatment (m^3)	10	150	75
Disposal (m^3)	5,942	4,392	3,679
Low-Level Waste			
Disposal (m^3)	3,067	576	2,571

Site Description

Oak Ridge Operations Office

The Oak Ridge Operations Office manages, coordinates, tracks, and assists in the implementation of the Environmental Management program among the various sites. Oak Ridge leads the National Program for Metal Recycle, as well as crosscutting integration efforts related to the Oak Ridge sites. In addition, the Oak Ridge Operations Office manages oversight agreements with the States of Tennessee, Ohio, and Kentucky and provides funding for all off-site projects. Oak Ridge Operations will have procurement oversight of the execution of a contract(s) for the depleted uranium hexafluoride conversion facilities at both gaseous diffusion plants, which transfers to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002.

Oak Ridge Reservation

The Oak Ridge Reservation encompasses about 37,000 acres and is comprised of three facilities; the Y-12 Plant, which was a uranium processing facility and now dismantles nuclear weapons components and serves as the nation's storehouse for special nuclear materials; the East Tennessee Technology Park, which was a uranium enrichment facility and is now being transitioned through reindustrialization; and the Oak Ridge National Laboratory, which conducts applied and basic research in energy technologies and in the physical and life sciences. Only East Tennessee Technology Park is funded under the Uranium Enrichment Decontamination and Decommissioning Fund.

East Tennessee Technology Park (formerly K-25)

The East Tennessee Technology Park is located on a 1,500 acre tract of land adjacent to the Clinch River, approximately 10 miles west of Oak Ridge, Tennessee. It was built as part of the World War II Manhattan Project and used to enrich uranium for national defense purposes. By the mid-1950s, five large uranium enrichment buildings covering 114 acres were in operation: K-25, K-27, K-29, K-31, and K-33. Four electrical switch yards and eight cooling towers served these buildings. Machinery was fabricated, serviced, repaired, and cleaned at on-site facilities. Enrichment of weapons-grade uranium ceased in 1964. The plant continued to produce low enriched uranium for commercial nuclear power purposes until 1985, when the plant was shut down.

Paducah

The Paducah Gaseous Diffusion Plant is located approximately 15 miles west of Paducah, Kentucky, near the Ohio River. The Department of Energy reservation comprises of just over 3,500 acres; including 750 acres inside the site's security fence, 2,000 acres leased to the Kentucky Department of Fish and Wildlife; and plant process buildings covering 74 acres. Paducah began operations in 1952 to produce low-assay enriched uranium for use as commercial nuclear reactor fuel. In 1993, uranium enrichment operations were turned over to the United States Enrichment Corporation in accordance with the Energy Policy Act of 1992.

Portsmouth

The Portsmouth Gaseous Diffusion Plant is located approximately 22 miles north of Portsmouth, Ohio. Construction of the 3,714 acre site began in 1952. Plant process buildings cover 93 acres. In 1993, uranium enrichment operations were turned over to the United States Enrichment Corporation in accordance with the Energy Policy Act of 1992. On June 21, 2000, United States Enrichment Corporation announced that Portsmouth enrichment facilities would cease operations by June 2001 and that the facilities would start being returning to DOE in June 2001 and completed by June 2002. On October 6, 2000, the Secretary of Energy announced DOE's decision regarding the future mission of Portsmouth and placing it in cold standby.

Detailed Program Justification

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The Oak Ridge Operations Office of Environmental Management projects under the Uranium Enrichment Decontamination and Decommissioning Fund are managed by a Management and Integration contractor through incentivized contracts, with fixed-price subcontracts, to assure the most cost efficient service to the Government.

The scope planned for FY 2002 has been reviewed and is appropriate to meet the goals of the site as outlined in the EM sites' baseline planning data. Project Baselines for activities have had, or are planned to have, an independent cost review of the scope, and the funds requested for FY 2002 are appropriate to perform the activities based on a historical level of effort and fixed-price contracts. Regulatory drivers for cleanup are Federal Facility Agreements which integrate Comprehensive Environmental Response Compensation and Liability Act and Resource Conservation and Recovery Act requirements; Consent Orders issued by the State regulators for permitted hazardous waste units; Resource Conservation and Recovery Act Part B hazardous waste management permits; Toxic Substances Control Act regulations for management of polychlorinated biphenyls; and Federal Facility Compliance Agreements for management of legacy mixed waste. The agreements establish enforceable milestones for completing major activities at the sites consistent with site baselines.

OR-193 / Long-Term Contractor Liabilities - Decontamination and Decommissioning Fund	**2,414**	**5,446**	**4,695**

Long-Term Contractor Liabilities - Decontamination and Decommissioning Fund includes activities associated with transitioning from the Management and Operating contractor, Lockheed Martin Energy Systems, Inc., to the Management and Integration contract management structure, Bethel Jacobs Company LLC. Most non-recurring contractor transition activities are scheduled to be completed in FY 2001. Payments for post April 1, 1998, retirement medical benefits for grand fathered employees and reduction in force costs from workplace transition subcontractors will continue into the outyears for these employees. Workplace transition costs apply to employees that are terminated from employment with transition subcontractors.

Reduction-in-force costs and post April 4, 1998, post-retirement medical benefits and long-term disability will continue to be funded in this PBS and the Defense-Post 2006 Completion account PBS OR-191.

OR-423 / East Tennessee Technology Park Remedial Action - Decontamination and Decommissioning Fund	**16,519**	**13,221**	**4,453**

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The East Tennessee Technology Park Remedial Action - Decontamination and Decommissioning Fund project is to address environmental hazards that have been identified within the East Tennessee Technology Park watershed and the waste sites associated with it, and to complete the Comprehensive Environmental Response, Compensation, and Liability Act activities required for all of these sites. It consists of 38 subprojects in 9 functional or geographical areas. All final remedial actions will be addressed under a Record of Decision for the site. Technology development projects are being utilized, or are planned, at the East Tennessee Technology Park to address dense non-aqueous phase liquid characterization, in-situ treatment and reactive barriers.

The Watershed Record of Decision Remedial Design Work Plan will be submitted to the regulators.

Continue cleanup of the K-1070A contaminated burial ground in FY 2002.

Metrics			
Release Site			
Cleanups	0	2	0
Mixed Low-Level Waste			
Disposal (m^3)	2,366	1,625	0

Key Milestones

Submit the D1 of the Remedial Action Report for the K-1070 C/D G Pit and contaminated pad (July 2001).

East Tennessee Technology Park Zone 1 Record of Decision - submit D1 record of decision to regulators for review (September 2001).

OR-433 / East Tennessee Technology Park Decontamination and Decommissioning Fund **8,420** **23,127** **1,000**

The East Tennessee Technology Park Decontamination and Decommissioning Fund project is to address environmental hazards that have been identified at facilities within the East Tennessee Technology Park watershed and to complete the Comprehensive Environmental Response, Compensation, and Liability Act activities required for all of these facilities. All of the scope included in this Project Baseline Summary is necessary to accomplish the land use of East Tennessee Technology Park, which is that of an industrial park occupied by private-sector businesses and industries.

Continue planning for future decontamination and decommissioning activities.

Key Milestones

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Demolish five Main Plant Buildings at East Tennessee Technology Park (September 2001).
- # K-25/K-27 Buildings Decontamination and Decommissioning - Complete PBI milestones (September 2001).

OR-443 / East Tennessee Technology Park Surveillance and Maintenance - Decontamination and Decommissioning Fund . . 11,473 20,637 19,390

The East Tennessee Technology Park Surveillance and Maintenance - Decontamination and Decommissioning Fund project is to ensure adequate containment and site control at shutdown facilities waiting decommissioning or reuse to ensure the health and safety of the public, site workers, and the environment. This is accomplished through a systematic program of inspections, surveillances, instrumentation calibration and building maintenance. These activities are designed to cost effectively manage the legacy materials remaining in the facilities; ensure sufficient containment is in place by process equipment and building structures; and that classified technologies and residual material are adequately protected.

- # Complete annual decontamination and decommissioning surveillance and maintenance report.
- # Issue annual Integrated Water Quality Plan monitoring report for K-901 and K-1007 ponds.
- # Provide optimum annual level of services to maintain infrastructure facilities for reuse and decontamination and decommissioning.
- # Infrastructure support costs have been reduced through an innovative facilities management contract with OMI Corporation.
- # Effectively support - East Tennessee Reindustrialization Program efforts as they are used to perform decontamination and decommissioning efforts at the site.

OR-493 / East Tennessee Technology Park - Oak Ridge Operations Prime Contracts 69,402 47,101 33,000

The East Tennessee Technology Park Three-Building Decontamination and Decommissioning and Recycling Project is to decontaminate and decommission three (K-29, K-31, and K-33) gaseous diffusion process buildings so that the buildings are available for reuse without radiological and nonradiological concerns. Via a fixed-price prime contract equipment will be removed and disposed and the interior of the building will be decontaminated to a contractually specified end point criteria. Restrictions on available funding to the fixed price contract may result in a directed change to the contractor's schedule of decommissioning activities. Any such change may result in a request for equitable adjustments and increase the total estimated cost of the contract. For additional information on this decontamination and decommissioning project refer to the operating funded project data sheet.

- # Complete the decommissioning and turnover of the Process Building K-33 for industrial reuse.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The decommissioning of Process Building K-31 and K-29 will continue.

Metrics			
Mixed Low-Level Waste			
Disposal (m^3)	3,498	0	0

Key Milestones

Stabilized Pond Waste and Portsmouth Soils Drums removal and shipment from K-31 and K-33 for Disposal (February 2000).

Manufacturing Sciences Corporation Supercompactor Facility Operational at K-33 (October 2000).

Supercompactor Facility Operational at K-33 (February 2001).

Complete dismantlement and removal to disposal of one Cascade Unit in K-31 (June 2001).

Complete dismantlement and removal to disposal, as either Low-Level Waste or Recycle, of four Cascade Units K-33 (August 2001).

OR-523 / Paducah Remedial Action **24,406 37,939 41,351**

The objective of the remedial action scope under this PBS is to investigate and remediate the plant and surrounding environment. To accomplish this objective, a series of operable units have been established and prioritized as part of a phased remediation approach, with emphasis on addressing imminent threats and off-site releases as the top priority. The significant work scope planned for accomplishment by FY 2006 includes a series of early actions (e.g., scrap removal, north/south ditch excavation), remedial construction for the groundwater operable unit, and various remedial investigation/feasibility study activities associated with the operable units. Project completion for remedial action activities, excluding decontamination and decommissioning of the operational gaseous diffusion plant is projected for completion by FY 2010, as required by the Federal Facilities Agreement.

Complete excavation of contaminated soils and sediments from the North South Diversion Ditch remedial action.

Complete Engineering Evaluation/Cost Analysis and initiate decision document for early action to remove contaminated soils and sediments from Bayou and Little Bayou Creek systems.

Continue removal of scrap metal yards (Balance of Scrap Metal Removal Action).

Implement Record of Decision No. 1 for early source term removal of contaminated soil and groundwater near the C-720 Sump and C-745 Kellogg Building Sites.

Continue DOE Material Storage Area cleanup project.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Implement the Six-Phase Heating Innovative Technology Treatability Study to support Record of Decision No. 2 for groundwater source control near C-400 area.
- # Complete Record of Decision approval for On-site Comprehensive Environmental Response Compensation, and Liability Act disposal cell.

Key Milestones

- # Complete construction of an In-Situ Permeable Reactive Barrier for the Paducah Southwest Plume (September 2000).
- # Complete packaging of crushed drums in Paducah Scrap Yard (Drum Mountain) (September 2000).
- # Groundwater Operable Unit - Issued D1 Proposed Plan (November 2000).
- # Scrap Metal - Complete disposal of Drum Mountain (December 2000).
- # Groundwater Operable Unit - Issue D1 Record of Decision to the Environmental Protection Agency/Kentucky Department of Environmental Protection (May 2001).
- # Scrap Metal - Issue D1 Removal Action Workplan for Balance of Scrap (June 2001).
- # PA-6 - Equipment Relocation/Removal of Accessible Contamination in Building C-410 - Complete PBI milestones by August 31, 2001 (August 2001).

OR-543 / Paducah Surveillance and Maintenance **17,076** **5,749** **7,350**

The objective of the surveillance and maintenance scope is to inspect and safely maintain DOE facilities and release sites, conduct routine environmental monitoring and groundwater sampling, operation of the groundwater pump and treat systems and to provide drinking water to affected residents. The current scope does not include surveillance and maintenance activities associated with the operation nor does it include actual decontamination and decommissioning activities for the existing DOE facilities currently under the decontamination and decommissioning program. The majority of the work scope conducted through FY 2006 will involve on-going operations, monitoring, and facility maintenance. As remedial actions are completed that result in residual contamination remaining in place, surveillance and maintenance scope will progressively increase to include those areas until long-term stewardship is implemented.

- # Provide water to residents north of the Plant affected by off-site contamination.
- # Continue pump and treat groundwater from northeast and northwest groundwater plumes.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Sample 161 residential and monitor wells, develop property easements for groundwater institutional control.
- # Inspect C-340 and C-410 buildings.
- # Inspect and take necessary corrective actions for 212 release sites, pre- and post-remedial action areas.
- # Decontaminate and transfer of fluorine cells for reuse.
- # Conduct five-year review for interim actions. Conduct Kentucky Pollutant Discharge Elimination System environmental monitoring and reporting.
- # Monitor, inspect, and maintain operating and closed landfills and complete associated regulatory reporting under the Resource Conservation and Recovery Act and Solid Waste Permits.
- # Meet regulatory reporting required by compliance agreements.

OR-553 / Paducah Waste Management **19,357** **27,214** **13,497**

The objective of the waste management scope is to safely store, treat, and dispose of all DOE legacy waste in accordance with applicable laws and regulations. The primary waste steams at Paducah include low-level, mixed low-level, hazardous, transuranic, Toxic Substances Control Act, and sanitary. To accomplish the objective, the waste streams have been ranked for treatment and disposal using a risk-based prioritized system.

- # Dispose of 488 cubic meters of mixed low-level waste at commercial permitted facilities.
- # Dispose onsite 300 cubic meters of waste currently managed as low-level waste that meets the C-746-U Landfill Waste Acceptance Criteria.
- # Dispose 4,400 cubic meters of DOE and United States Enrichment Corporation industrial waste in an on-site landfill.
- # Continue construction and initiate operation of the low-level waste packaging and sorting facility.

Metrics			
Mixed Low-Level Waste			
Treatment (m^3)	10	150	75
Disposal (m^3)	0	777	488

OR-593 / Paducah Long-Term Contractor Liabilities - Decontamination and Decommissioning Fund **0** **5,027** **0**

(dollars in thousands)

FY 2000	FY 2001	FY 2002

This project consists of Bechtel Jacobs Company, LLC support of DOE investigation and litigation including activities for the Smith Litigation as well as other Paducah investigations and activities directed by DOE and the Department of Justice.

Department of Justice and Environmental Safety and Health activities are not anticipated in FY 2002.

OR-623 / Portsmouth Remedial Action **30,331 23,153 56,694**

During the cold war the Portsmouth Gaseous Diffusion Plant was constructed to enrich uranium in support of both government and private programs. The United States Enrichment Corporation made the decision in June 2000 to cease uranium enrichment operations at Portsmouth. During DOE's operation of the plant, radiological and hazardous constituents were released from the process into the environment. This project, along with OR-643, will complete assessments, corrective measures studies, and decision documents, and implement corrective measures for all applicable release sites. Cleanup will be in accordance with both Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation, and Liability Act regulations. Additional environmental restoration will be required in support of decontamination and decommissioning of the plant: however, this is beyond the scope of this PBS.

The Quadrant II X-701B soils planned remediation and groundwater design/build will be completed.

The Quadrant II X-633 soil design/build will be started.

The Quadrant III X-615 drainage ditch design/build will be completed, thus completing all of Quadrant III corrective actions.

A risk reduction action to remove contaminated sediment from the bottom of the Quadrant IV X-230J6 pond will be initiated.

Decontamination and decommissioning projects of currently non-leased excess facilities.

Initiate Environmental Impact Statement and begin approval process with the regulators for a Privatized On-site Resource Conservation and Recovery Act disposal cell.

Metrics			
Release Site			
Cleanups	0	5	3

Key Milestones

Quadrant II Corrective Actions - QII X-701C Design/Build Complete (September 2001).

OR-643 / Portsmouth Surveillance and Maintenance **6,918 9,581 9,978**

(dollars in thousands)

FY 2000	FY 2001	FY 2002

During the cold war the Portsmouth Gaseous Diffusion Plant was constructed to enrich uranium in support of both government and private programs. The United States Enrichment Corporation made a decision in June 2000 to cease uranium enrichment operations at Portsmouth. During DOE's operation of the plant, radiological and hazardous constituents were released from the process into the environment. This project, along with OR-623 will complete the DOE portion of the environmental restoration for the site. Additional environmental restoration will be required in support of decontamination and decommissioning of the plant; however, this is beyond the scope of this PBS.

- # Operate and maintain the ongoing groundwater program at the site in accordance with regulatory requirements. This includes operation of existing groundwater treatment facilities which provide confinement of contamination on-site, and treatment for existing groundwater plumes, and operation of the site-wide groundwater monitoring program which tracks the fate of contamination.
- # Conduct long-term surveillance and maintenance of the remedial action units and decommissioning and decontamination facilities in accordance with all regulatory and DOE requirements.
- # Long-term stewardship activities will be conducted under a new PBS after completion of remedial actions.

OR-653 / Portsmouth Waste Management **14,674** **40,561** **38,633**

The objective of the waste management scope is to safely store, treat, and dispose of all DOE legacy waste in accordance with applicable laws and regulations. During operation of the plant radiological and hazardous constituents were released from the process to the environment. This project will complete treatment and/or disposal of waste generated by OR-623 during remediation of the site. Additional waste treatment and/or disposal will be required in support of decontamination and decommissioning of the plant; however, this is beyond the scope of this PBS.

- # Continue the safe storage of legacy mixed low-level waste and low-level waste, and sanitary and hazardous waste in accordance with all DOE Orders, contractor policies and procedures and, Federal and State regulations and permits.
- # Dispose of 2,571 cubic meters of low-level waste and 3,191 cubic meters of mixed low-level waste at commercial permitted facilities.

Metrics			
Mixed Low-Level Waste			
Disposal (m^3)	78	1,990	3,191
Low-Level Waste			
Disposal (m^3)	3,067	576	2,571
Key Milestones			

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Complete cutting and packing for disposal of 2600 tons of contaminated scrap metal (September 2001).
- # Dispose of 7700 drums of polychlorinated biphenyl/low-level waste streams from debris and floor sweepings to Envirocare of Utah (September 2001).

OR-693 / Portsmouth Long-Term Contractor Liabilities **0** **600** **8,600**

This project consists of Bechtel Jacobs Company, LLC support of DOE investigations and litigation including activities directed by DOE and the Department of Justice.

- # Funds requested for this activity support the record searches performed by the United States Enrichment Corporation at Portsmouth for DOE and the Department of Justice investigations/studies, pending litigation, Freedom of Information Act requests, and information requests from both State and Federal regulatory and elected officials.
- # Pre-1993 service severance costs for separated employees.

OR-893 / Directed Support - Decontamination and Decommissioning Fund **6,417** **4,631** **3,000**

Provides support to DOE/Oak Ridge Operations Office in closing out previously incurred management and operations liabilities and provides for annual financial audit of Uranium Enrichment Decontamination and Decommissioning Fund.

- # The National Center of Excellence for Metal Recycle will continue to facilitate the recycle of metal throughout the DOE complex.
- # The audit of the Uranium Enrichment Decontamination and Decommissioning Fund will continue to be supported.
- # The Lockheed Martin Energy Systems contract closeout will continue closing subcontracts, supporting litigation activities etc.

OR-9C3 / Depleted Uranium Hexafluoride Conversion Project **0** **0** **10,000**

(dollars in thousands)

FY 2000	FY 2001	FY 2002

DOE currently stores 680,000 metric tons of depleted uranium as solid depleted uranium hexafluoride. This inventory is maintained at the Paducah, Kentucky and Portsmouth, Ohio gaseous diffusion plants and the East Tennessee Technology Park in Oak Ridge, Tennessee. The objective of the conversion project is to convert the depleted uranium to a less hazardous form for reuse or disposal. Included in this project is sale or disposal of lessor natural and low enriched inventories of depleted uranium hexafluoride at these sites. The conversion project includes the design, build, and operation of depleted uranium hexafluoride conversion plants at Paducah and Portsmouth in accordance with Public Law 105-204. The project also includes shipment of depleted uranium hexafluoride inventories from East Tennessee Technology Park, the dispositioning of conversion products, and decontamination and decommissioning of conversion facilities within a 25-year period.

- **#** Continue initial design activities for the depleted uranium hexafluoride conversation plants: preparation of preliminary design package, completion of the National Environmental Policy Act process, and obtaining Acquisition Executive (S-2) approval to proceed with detailed design.
- **#** Continue research and development efforts on beneficial uses of depleted uranium conversion products.

Total, Oak Ridge	227,407	263,987	251,641

Explanation of Funding Changes From FY 2001 to FY 2002

	FY 2002 vs. FY 2001 ($000)
OR-193 / Long-Term Contractor Liabilities - Decontamination and Decommissioning Fund	
# Decrease to support higher priority activities	-751
OR-423 / East Tennessee Technology Park Remedial Action - Decontamination and Decommissioning Fund	
# Decrease to support higher priority activities	-8,768
OR-433 / East Tennessee Technology Park Decontamination and Decommissioning Fund	
# Decrease due to completion of significant decommissioning projects in the Main Plant Area, Balance of Plant Project, and Rabbit Ears project in FY 2001 and to support higher priority activities	-22,127

	FY 2002 vs. FY 2001 ($000)
OR-443 / East Tennessee Technology Park Surveillance and Maintenance - Decontamination and Decommissioning Fund	
# Decrease is due to a slight fluctuation in annually budgeted surveillance and maintenance and to support high priority activities	-1,247
OR-493 / Oak Ridge Operations Prime Contracts	
# Decrease due to anticipated payments, schedule changes reflecting contractor delays.	-14,101
OR-523 / Paducah Remedial Action	
# Increase is due to DOE Material Storage Areas remedial action	3,412
OR-543 / Paducah Surveillance and Maintenance	
# Increase due to additional inspection activities in preparation for decontamination and decommissioning of the C-340 Metals Plant and C-410 Feed Plant facilities	1,601
OR-553 / Paducah Waste Management	
# Decrease due to deferral of low-level waste and mixed low-level waste disposal and reduction in storage costs as a result of facility electrical and fire protection upgrades	-13,717
OR-593 / Paducah Long-Term Contractor Liabilities - Decontamination and Decommissioning Fund	
# Department of Justice and Environmental, Safety and Health activities are not anticipated in FY 2002	-5,027
OR-623 / Portsmouth Remedial Action	
# Increase to address Quadrant II remedial action soils projects and Quadrant III and IV risk reduction and corrective actions	33,541
OR-643 / Portsmouth Surveillance and Maintenance	
# Increase due to operation and maintenance of groundwater program and process modifications to increase the capacity of the facilities	397
OR-653 / Portsmouth Waste Management	
# Decrease due to efficiencies	-1,928
OR-693 / Portsmouth Long Term Contractor Liabilities	
# Increase reflects payments for management and operations contract liabilities within available site funding and pre-1993 severance expenses	8,000
OR-893 / Directed Support - Decontamination and Decommissioning Fund	
# Decrease due to support higher priority activities	-1,631
OR-9C3 / Depleted Uranium Hexafluoride Conversion Project	

	FY 2002 vs. FY 2001 ($000)
# This activity is being transferred to the Uranium Enrichment Decontamination and Decommissioning Fund from Other Uranium Activities	10,000
Total Funding Change, Oak Ridge	-12,346

Multi-Site

Mission Supporting Goals and Objectives

Program Mission

The Uranium Enrichment Decontamination and Decommissioning Fund supports partial payment of Uranium/Thorium licensee claims, as required under Title X, Subtitle A of the Energy Policy Act of 1992. The Act directs that the fund be used to reimburse operating uranium and thorium processing site licensees for the costs of their environmental cleanup at those sites, subject to a specific reimbursement limit. This payment is to cover the Federal Government's share of cleanup being carried out at specific active uranium and thorium processing sites. The Department compensates uranium site owners on a per-ton basis for the restoration costs for those tailings attributable to the Federal Government.

Program Goal

To ensure the Federal Government compensates the Uranium/Thorium licensees for the Federal Government's portion of cleanup costs at their sites.

Program Objective

The Uranium and Thorium Reimbursements will be distributed in the Spring of 2002 based on approved unpaid claims submitted through FY 2001. Reimbursements will be based on the review and audits of claims submitted by 13 uranium licensees and one thorium licensee.

Significant Accomplishments and Program Shifts

- Public Laws 104-259 and 105-388 increased the authorized reimbursement amount for uranium and thorium licensees from $270 million and $40 million to $350 million and $140 million, respectively, for an aggregate amount of $490 million.
- A total of $329.5 million has been paid to licensees through the first quarter of FY 2001 ($194.2 million to the 13 uranium licensees and $135.3 million to the thorium licensee).
- Requested funding along with prior year carryover will be sufficient to make all planned reimbursements in FY 2002.

Funding Schedule

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
HQ-4000 / Reimbursements to Uranium and Thorium Licensees under Title X of the Energy Policy Act of 1992	72,000	71,842	1,000
Total, Uranium Enrichment Decontamination and Decommissioning	72,000	71,842	1,000

Detailed Program Justification

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
HQ-4000 / Reimbursements to Uranium and Thorium Licensees under Title X of the Energy Policy Act of 1992 . . .	**72,000**	**71,842**	**1,000**

The project reimburses the 14 inactive uranium and thorium processing site licensees for a portion (the Federal related material determined to be at each site) of their costs of cleanup.

Provide for payment of approved Uranium/Thorium licensee claims for cleanup completed.

Total Multi-Site Uranium Enrichment Decontamination and Decommissioning....	72,000	71,842	1,000

Title X of the Energy Policy Act of 1992: Uranium/Thorium Reimbursement Program

Status of Payments through Fiscal Year 2000 and Estimated Future Payments

(dollars in thousands)

Licensees	Total Payments FY 1994-1st Quarter FY 2001	Approved but Unpaid Claim Balances After 1st Quarter FY 2001 Payment [a]	Estimated Payments: 2nd FY 2001 through End of Program [b]	Estimated Unpaid Uranium Claim Balances in Excess of Dry Short Ton Ceilings at End of Program [c]
Uranium				
American Nuclear Corp. Site				
American Nuclear Corporation	794	0	34	0
State of Wyoming	1,219	0	642	0
Atlantic Richfield Company	32,306	0	0	0
Atlas Corporation/Moab Mill Reclamation Trust [d]	7,259	0	10,278	0
Cotter Corporation	2,312	770	393	1,470
Dawn Mining Company	2,930	0	4,895	0
Homestake Mining Company	32,972	0	20,515	0
Pathfinder Mines Corporation	6,109	0	1,926	0
Petromics Company	2,227	0	654	0
Quivira Mining Company	13,546	0	7,558	0
Tennessee Valley Authority	11,928	13,202	2,026	11,581

[a] All outstanding approved claims have been paid through the 1st quarter of FY 2001. These amounts are prior year approved claims for uranium licensees that exceed the mandated ceiling for reimbursable costs per dry short ton.

[b] These amounts include the claims submitted in May of 2000 that are being reviewed and will be paid April of 2001, and estimates of future claims provided by the licensees in early 2001.

[c] These amounts are estimates of approved claims that would be in excess of the uranium dry short ton ceiling at the end of the program. Under Sec. 1001.(b)(2)(E) of the Energy Policy Act of 1992, the Secretary may allow reimbursement of these claims if there is an excess of uranium reimbursement authority.

[d] Effective December 30, 1999, the Nuclear Regulatory Commission transferred the license from the Atlas Corporation to a newly created trust approved by a bankruptcy court. Beginning in FY 2000, Title X payments are made to the trust and the cleanup will be performed by the trust.

		(dollars in thousands)		
Umetco Minerals Corporation-CO	41,847	4,741	7,109	17,897
Umetco Minerals Corporation-WY	12,147	0	5,912	4,529
Western Nuclear, Incorporated	26,616	787	4,521	556
Sub-total, Uranium	194,212	19,500	66,463	36,033
Thorium				
Kerr-McGee Chemical Corp	135,267	0	10,846	0
Sub-total, Thorium	135,267	0	10,846	0
Total, Uranium and Thorium	329,479	19,500	77,309	36,033

Explanation of Funding Changes From FY 2001 to FY 2002

	FY 2002 vs. FY 2001 ($000)
HQ-4000 / Reimbursements to Uranium and Thorium Licensees under Title X of the Energy Policy Act of 1992	
# Due to Congressionally increased funding in FY 2001, outstanding balances to licensees were paid in FY 2001. Funding request sufficient to make FY 2002 payments.	-70,842
Total Funding Change, Multi-Site	-70,842

Other Uranium Activities

Program Mission

Other Uranium Activities supports important government activities related to the Federal Uranium Enrichment Program that were not transferred to the United States Enrichment Corporation. These activities include Maintenance of Facilities and Inventories, Pre-Existing Liabilities, and placing the Portsmouth Gaseous Diffusion Plant in cold-standby. The Depleted Uranium Hexafluoride Conversion Project and Research and Development will be transferred to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002, however, activities for FY 2000 and FY 2001 are described herein.

Program Goals

The goals of Other Uranium Activities are to manage the Office of Environmental Management's Uranium Program activities at Portsmouth, Ohio; Paducah, Kentucky; and Oak Ridge, Tennessee in a safe, economical, and environmentally sound manner. Complete the necessary activities to construct and operate a depleted uranium hexafluoride conversion capability (this activity is transferred to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002). Continue research and development of uses for depleted uranium hexafluoride conversion products and other materials which is required by the State of Ohio's Environmental Protection Agency's Director's Findings of Facts and Orders (this activity is transferred to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002).

Program Objectives

- Manage enriched uranium inventories removed from the Portsmouth gaseous diffusion plant to an offsite facility, manage the collection and disposal of polychlorinated biphenyl spills, and maintain facilities in a safe and environmentally-sound condition.
- Fund all financial liabilities associated with the operations of the Portsmouth and Paducah gaseous diffusion plants prior to the establishment and after the privatization of United States Enrichment Corporation.
- Manage the depleted uranium hexafluoride storage cylinders and other surplus uranium inventories in an environmentally responsible manner.
- Complete the design, National Environmental Policy Act and site preparation activities needed to begin constructing two depleted uranium hexafluoride conversion facilities. (Transfers to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002).

- Conduct research and development to find beneficial uses for depleted uranium forms and other materials to reduce future program costs. (Transfers to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002).
- Place and maintain Portsmouth Gaseous Diffusion Plant in cold-standby.

Significant Accomplishments and Program Shifts

On June 21, 2000, the United States Enrichment Corporation announced that it would cease uranium enrichment operations at the Portsmouth plant by June 2001. The cessation of uranium enrichment operations at the facility will require transition activities for the facilities currently leased by the United States Enrichment Corporation and placement of the facilities at Portsmouth in cold-standby. Additional funds are being requested in FY 2002 for these activities.

In FY 2001, the Uranium Programs scope of work transferred from the Office of Nuclear Energy, Science and Technology, to the Office of Environmental Management.

Public Law 105-204, required the Secretary of Energy to develop a plan and propose legislation for the disposition of depleted uranium hexafluoride and for the construction of facilities at Paducah and Portsmouth to treat and recycle depleted uranium hexafluoride consistent with the National Environmental Policy Act. The Department responded to that requirement by initiating a procurement action through release of a Request for Expressions of Interest on March 4, 1999, and issuing the "Final Plan for the Conversion of Depleted Uranium Hexafluoride, " in July 1999. The Department's *Final Programmatic Environmental Impact Statement for Alternative Strategies for the Long-Term Management and Use of Depleted Uranium Hexafluoride,* issued April 15, 1999, described the preferred alternative for managing the depleted uranium hexafluoride which is to begin conversion of the depleted uranium hexafluoride inventory as soon as possible for use or long-term storage. The Record of Decision concerning the Department's long-term management of the use of depleted uranium hexafluoride was issued in August 1999. The Department will initiate project-specific environmental impact statements and activities to convert the depleted uranium hexafluoride inventory to a more stable form. The Department intends to complete National Environmental Policy Act review(s) prior to performing final design and commencing construction.

In FY 1998, the Office of Nuclear Energy, Science and Technology received a total of $66 million from United States Enrichment Corporation under two Memoranda of Agreement for the management and disposition of 11,212 depleted uranium hexafluoride storage cylinders transferred from United States Enrichment Corporation to DOE. Between FY 2000 - FY 2001, $14.6 million has been used to build new concrete depleted uranium hexafluoride cylinder storage yards at Paducah, Kentucky, and Portsmouth, Ohio, to accommodate the 11,212 cylinders. Additionally, in FY 2001 the Department plans to use $12 million of these Memoranda of Agreement funds combined with $21 million in appropriations to initiate the design of two depleted uranium hexafluoride conversion facilities. It is also anticipated that in FY 2002, the remaining $12 million portion of the Memorandum of Agreement funding will be provided for this project. However, this is dependent upon current needs-assessment being conducted for cylinder maintenance and other requirements at Paducah and

Portsmouth. The depleted uranium hexafluoride conversion project is transferred to the Uranium Decontamination and Decommissioning Fund in FY 2002.

In response to DOE independent investigations of environment, safety and health issues, developed and implemented corrective action plans to resolve criticality safety concerns, improve DOE management and oversight and other health and safety issues at Paducah, Portsmouth and East Tennessee Technology Park.

Funding Profile

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
Depleted Uranium Hexafluoride Conversion Project	5,521	21,306	0	-21,306	<999.9%
Maintenance of Facilities and Inventories	22,235	24,062	99,000	74,938	311.4%
Pre-Existing Liabilities	8,946	11,305	11,784	479	4.2%
Total, Other Uranium Activities	36,702	56,673	110,784	54,111	95.5%

Funding by Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
Oak Ridge Operations Office	36,702	56,673	110,784	54,111	95.5%
Total, Other Uranium Activities	36,702	56,673	110,784	54,111	95.5%

Metrics Summary

	FY 2000	FY 2001	FY 2002
Metrics are under development for the Other Uranium Activities.			

Oak Ridge

Mission Supporting Goals and Objectives

Program Mission

The Oak Ridge Operations Office manages the Other Uranium Activities. These activities include the Maintenance of Facilities and Inventories, Pre-Existing Liabilities and placing the Portsmouth Gaseous Diffusion Plant in cold standby. The Depleted Uranium Hexafluoride Conversion Project and research and development have been transferred to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002. The Depleted Uranium Hexafluoride Conversion Project provides for the safe storage of depleted uranium as solid uranium hexafluoride. This inventory is maintained at the Paducah, Kentucky, and Portsmouth, Ohio, gaseous diffusion plants and the East Tennessee Technology Park in Oak Ridge, Tennessee. The objective of the conversion project is to convert the depleted uranium to a less hazardous form for reuse or disposal. The conversion project includes the design, construction, and operation of depleted uranium hexafluoride conversion plants at Paducah and Portsmouth. The project also includes shipment of uranium hexafluoride inventories from East Tennessee Technology Park, the dispositioning of conversion products, and decontamination and decommissioning of conversion facilities. Research and development is conducted to find beneficial uses for depleted uranium forms and other materials, such as empty cylinders, with the objective of reducing future program costs for cylinder management and conversion services.

The Maintenance of Facilities and Inventories activities for East Tennessee Technology Park, Paducah and Portsmouth Gaseous Diffusion Plants, includes the uranium hexafluoride cylinder inspection program; maintaining the uranium hexafluoride cylinder yard environmental and radiological monitoring programs; routine re-stacking and relocation of cylinders to place the cylinders in improved storage conditions; required preventive corrective maintenance associated with the cylinders, cylinder storage yards, and cylinder holding equipment; and disposition of legacy cylinder debris/waste and the disposal of empty cylinders. This program also provides for the surveillance and maintenance of DOE leased and non-leased facilities, cleaning legacy polychlorinated biphenyls spills in the leased areas of the diffusion sites consistent with the Federal Facilities Compliance Act, maintaining nuclear safety authorization basis documents, and managing the highly enriched uranium program at Portsmouth. Activities at Portsmouth include placing and maintaining the facilities in cold-standby.

The Pre-Existing Liabilities includes activities and expenses associated with Post Retirement Life and Medical Benefits and Long Term Disability Benefits to transitioned Bechtel Jacobs Company employees supporting enrichment facilities programs while working as first or second tier subcontractors. It also covers pre-April 1, 1998, retirees associated with enrichment facilities and employees on long term disability prior to April 1, 1998. These benefits are applicable to Paducah Gaseous Diffusion Plant employees prior to the lease agreement with the United States Enrichment Corporation and the DOE in July 1993. These benefits are also applicable to retirees of the Ohio Valley Electric Company and contractor employees with service at the Portsmouth

Gaseous Diffusion Plant prior to the lease agreement with United States Enrichment Corporation and the DOE in July 1993. This scope has been expanded to include retired employees working at both Paducah and Portsmouth Gaseous Diffusion Plants prior to the date of United States Enrichment Corporation privatization.

Program Goals

- Manage Office of Environmental Management's Uranium Program activities at Portsmouth, Ohio; Paducah, Kentucky; and Oak Ridge, Tennessee in a safe, economical, and environmentally-sound manner.
- Complete the necessary activities needed to construct and operate a depleted uranium hexafluoride conversion capability. (Transfers to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002).
- Continue research and development of uses for depleted uranium hexafluoride conversion products and other materials which is required by the State of Ohio's Environmental Protection Agency's Director's Findings of Facts and Orders. (Transfers to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002).
- Place and maintain the Portsmouth Plant in cold-standby.

Program Objectives

- Manage the highly enriched uranium oxides inventory removed from the gaseous diffusion plants to an offsite facility, manage the collection and disposal of polychlorinated biphenyls spills at the leased gaseous diffusion plants, and maintain the non-leased facilities in a safe and environmentally-sound condition.
- Manage the pre-existing liabilities incurred before the privatization of United States Enrichment Corporation in 1993 and as further defined by the memorandum of agreement between Office of Management and Budget and United States Enrichment Corporation, dated April 6, 1998.
- Manage the depleted uranium hexafluoride storage cylinders and other surplus uranium inventories in an environmentally responsible manner by conducting cylinder inspections, moving cylinders to properly spaced storage locations on upgraded, concrete storage yards, coating cylinders to inhibit corrosion, and developing and implementing options to repair cylinders exhibiting accelerated corrosion.
- Complete the design, National Environmental Policy Act and site preparation activities needed to begin constructing two depleted uranium hexafluoride conversion facilities. (Transfers to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002).
- Conduct research and development to find beneficial uses for depleted uranium forms and other uranium program materials, such as empty cylinders, with the objective of reducing future program costs for cylinder management and conversion services. (Transfers to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002).

Maintain the Portsmouth Plant in cold-standby safely and efficiently.

Significant Accomplishments and Program Shifts

Depleted Uranium Hexafluoride Conversion Project and Research and Development

On October 31, 2000, the Department issued a Request for Proposal to award a contract to design, construct and operate two conversion facilities, one each at Paducah and Portsmouth (FY 2000).

DOE is to award a new prime contract for the design, build, and operation (for the first five years) of depleted uranium hexafluoride conversion facilities at Paducah and Portsmouth. The National Environmental Policy Act documentation for project specific determinations at Paducah and Portsmouth will continue. The design of facilities will be initiated (FY 2001).

Maintenance of Facilities and Inventories

The Defense Nuclear Facility Safety Board closed Recommendation 95-1, Improved Safety of Cylinders Containing Depleted Uranium. This recommendation was closed because all implementation plan commitments made by the Department were completed in 1997, and the Department has continued to manage the activities under a cylinder management plan. The Defense Nuclear Facility Safety Board noted that they were impressed with the Department's use of the systems engineering process to develop a workable and justifiable cylinder management program (FY 2000).

At East Tennessee Technology Park, relocate 500 cylinders from K-1066-E to B yards and 1025 cylinders from K-1066-K to E yards to remove cylinders from substandard storage conditions including those inaccessible for inspection, unsafe stacking array, and areas of poor drainage. Deploy new hand held field data acquisition units for visual inspections. Deploy revised East Tennessee Technology Park site level field operating procedures for self-performed work. Submit annual polychlorinated biphenyl report to DOE for Environmental Protection Agency approval. Submit annual toxicity testing results to Bechtel Jacobs Company, environmental compliance. Provide quarterly reports to Tennessee Department of Environment and Conservation. Upgrade J yard 1.8 acres. Prepare/construct a gravel base capable for long term storage of up to 1500 cylinders, double stacked. Issue Request for Proposal/award subcontract for the design and certification of 10 and 14 ton cylinder over container (FY 2001).

At East Tennessee Technology Park, relocate 1025 cylinders from K-1066-K to E yards to remove cylinders from substandard storage conditions including those inaccessible for inspection, unsafe stacking array, and areas of poor drainage. Submit annual polychlorinated biphenyl report to DOE for Environmental Protection Agency approval. Submit annual toxicity testing results to Bechtel Jacobs Company environmental compliance. Provide quarterly reports to Tennessee Department of Environment and Conservation. Upgrade K yard North .7 acres. Prepare and construct a gravel base capable for long term storage of up to 500 cylinders, double stacked. Development and certification of over container (FY 2002).

At Paducah, restack 1,390 cylinders. Complete annual and quadrennial cylinder inspections; radiological survey on 7,784 cylinders; ultrasonic wall thickness measurements on 400 cylinders; and routine cylinder

maintenance. Maintain inactive facilities and acreage including sampling and monitoring of Kentucky Pollutant Discharge Elimination System Outfall 017 for acute toxicity; scheduled routine maintenance and annual inspections. Sample and analyze polychlorinated biphenyl spills and equipment and perform ambient air monitoring. Conduct routine collection trough system, open spill sites, and equipment inspections. Perform repair and maintenance, includes trough installation and spill site cleanup. Review and update the authorization basis documents including Plant Safety Operational Analysis; Fire, Accident and Hazard analysis documentation; and Upgraded Safety Analysis Reports (FY 2001).

- At Paducah, relocate 1,428 cylinders. Complete annual and quadrennial cylinder inspections; radiological survey of 9,564 cylinders; ultrasonic wall thickness measurements on 100 cylinders; and routine cylinder maintenance. Maintain inactive facilities and acreage including sampling and monitoring of Kentucky Pollutant Discharge Elimination System Outfall 017 for acute toxicity; scheduled routine maintenance and annual inspections. Sample and analyze polychlorinated biphenyl spills and equipment and perform ambient air monitoring. Conduct routine collection trough system, open spill sites, and equipment inspections. Perform repair and maintenance, includes trough installation and spill site cleanup. Review and update the authorization basis documents including Plant Safety Operational Analysis; Fire, Accident and Hazard analysis documentation; and Upgraded Safety Analysis Reports (FY 2002).

- Maintain Portsmouth Gaseous Diffusion Plant in cold-standby, including infrastructure maintenance, buffering of process cells, and revising operating procedures (FY 2002).

- At Portsmouth continue to plan for the conversion and down blending of highly enriched uranium material. The depleted uranium hexafluoride conversion project will begin. Safety Analysis Report "A" comments will be updated, required reviews/documentation will be supported. Continued management and relocation of cylinders from United States Enrichment Corporation to DOE yard, surveillance and maintenance and daily operations of uranium programs facilities, warehouses X-744G and X-345, and polychlorinated biphenyl systems (includes polychlorinated biphenyl systems upgrade to reduce annual operating and maintenance costs) (FY 2001).

- At Portsmouth continue to plan for and begin the conversion and down blending of highly enriched uranium material (including material at Nuclear Fuel Service). Safety Analysis Report "B" comment resolution will be obtained, required reviews/documentation will be supported. Continued management of cylinders, surveillance and maintenance and daily operations of uranium programs facilities, warehouses X-744G (including material containers previously received at Portsmouth from Fernald, Hanford and the universities) and X-345, and polychlorinated biphenyl systems. Also includes routine surveillance and maintenance of material containers previously received at Portsmouth from Fernald, Hanford and the universities (FY 2002).

- Placement of the Portsmouth Gaseous Diffusion Plant in cold-standby reflects a significant change in the program at Portsmouth. The transition from United States Enrichment Corporation operation to DOE winterization and cold-standby represents a major shift at the site.

Pre-Existing Liabilities

- At the Oak Ridge Reservation, activities and expenses associated with Post Retirement Life and Medical Benefits and Long Term Disability Benefits to transitioned Bechtel Jacobs Company employees supporting Enrichment Facilities programs while working as first or second tier subcontractors. Activities and expenses also cover pre April 1, 1998, retirees associated with Enrichment Facilities and employees on Long Term Disabilities prior to April 1, 1998, associated with Enrichment Facilities (FY 2000/2001/2002).
- At Paducah, activities and expenses that are associated with on-going, long-term obligations for post retirement life and medical benefits for retired contractor employees of the Paducah Gaseous Diffusion Plant prior to the lease agreement with United States Enrichment Corporation and DOE (includes pre-privatization, 1993-1998) (FY 2000/2001/2002).
- At Portsmouth, activities and expenses that are associated with on-going, long-term obligations for post retirement life and medical benefits for retired Ohio Valley Electric Corporation and contractor employees of the Portsmouth Gaseous Diffusion Plant prior to the lease agreement with United States Enrichment Corporation and DOE (includes pre-privatization, 1993-1998) (FY 2000/2001/2002).

Funding Schedule

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
Depleted Uranium Hexafluoride Conversion Project			
OR-9C3/Uranium Hexafluoride Conversion Facility	5,521	21,306	0
Maintenance of Facilities & Inventories			
OR-4M3/East Tennessee Technology Park Uranium Facilities Maintenance	9,425	10,195	12,000
OR-5M3/Paducah Uranium Facilities Maintenance	5,324	5,768	7,000
OR-6M3/Portsmouth Uranium Facilities Maintenance	7,486	8,099	80,000
Pre-Existing Liabilities			
OR-1P3/Oak Ridge Reservation Pre-Existing Liabilities	742	630	809
OR-5P3/Paducah Pre-Existing Liabilities	4,020	4,808	3,784
OR-6P3/Portsmouth Pre-Existing Liabilities	4,184	5,867	7,191
Total, Oak Ridge	36,702	56,673	110,784

Funding by Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
East Tennessee Technology Park	9,425	10,195	12,000	1,805	17.7%
Oak Ridge Operations Office	5,521	21,306	0	-21,306	<999.9%
Oak Ridge Reservation	742	630	809	179	28.0%

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
Paducah Gaseous Diffusion Plant	9,344	10,576	10,784	208	2.0%
Portsmouth Gaseous Diffusion Plant	11,670	13,966	87,191	73,225	524.3%
Total, Oak Ridge	36,702	56,673	110,784	54,111	95.0%
Total, Uranium Programs	36,702	56,673	110,784	54,111	95.0%

Site Description

Oak Ridge Operations

The Oak Ridge Operations is responsible for fulfilling DOE's contractual liability with respect to retired management and operating contractor employees of the Paducah and Portsmouth facilities as well as retired power supplier employees, and for representing DOE in litigation activities arising from Uranium Enrichment activities prior to July 1, 1993 and additional liabilities after the privatization in accordance with the memorandum of agreement dated April 6, 1998. Oak Ridge Operations will have procurement oversight of the execution of a contract(s) for the depleted uranium hexafluoride conversion facilities at both gaseous diffusion plants, which transfers to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002.

East Tennessee Technology Park

The activities at the East Tennessee Technology Park, located on approximately 1,500 acres in Oak Ridge, Tennessee, include nuclear safety activities required to meet Departmental obligations under the Energy Policy Act of 1992 by assisting the Nuclear Regulatory Commission in the preparation of an annual report to Congress on the status of health, safety, and environmental conditions at the gaseous diffusion plants; and depleted uranium hexafluoride cylinder maintenance activities including storage of the existing inventory of approximately 4,700 depleted uranium hexafluoride cylinders and 2,500 other surplus uranium cylinders in a safe manner.

Paducah Gaseous Diffusion Plant

The activities at the Paducah Gaseous Diffusion Plant, located on just over 3,500 acres near Paducah, Kentucky, include: (1) oversight activities associated with the execution of the depleted uranium hexafluoride cylinder maintenance operations; (2) review and update of Safety Analysis Reports as necessary, and assistance with the preparation of Nuclear Regulatory Commission's annual report to Congress; (3) the maintenance of non-leased facilities which includes efforts at both active and inactive facilities to protect the environment, protect the safety and health of workers and the public and to perform biological monitoring activities; (4) the polychlorinated biphenyls program which includes activities related to achieving and maintaining compliance with the Toxic Substance Control Act of 1976, the Uranium Enrichment Toxic Substances Control Act of 1976 Federal Facilities Compliance Agreement, and DOE Orders and other applicable requirements; and (5) oversight of the site-specific depleted uranium hexafluoride conversion project activities. Specific polychlorinated biphenyls activities include oversight of the collection and containment

system, management of Toxic Substance Control Act of 1976 regulated polychlorinated biphenyls spill sites, and management of waste generated from these activities.

Portsmouth Gaseous Diffusion Plant

The activities at the Portsmouth Gaseous Diffusion Plant, located on 3,714 acres near Portsmouth, Ohio, include: (1) oversight activities associated with the execution of the depleted uranium hexafluoride cylinder maintenance operations; (2) the highly enriched uranium Equipment Shutdown and Inventory Disposition Program which removes all highly enriched uranium materials (materials with assays greater than 20 percent) from the Portsmouth site, as well as buffering shut down production equipment for nuclear criticality safety purposes, program and business management, safety authorization basis management, and other technical support associated with highly enriched uranium material; (3) review and update Safety Analysis Reports as necessary, and assistance with the preparation of Nuclear Regulatory Commission's annual report to Congress; (4) the maintenance of non-leased facilities which includes effort in both active and inactive facilities to protect the environment and the safety and health of personnel; and (5) the polychlorinated biphenyls program which includes activities related to achieving and maintaining compliance with Toxic Substances Control Act of 1976, the Uranium Enrichment Toxic Substance Control Act of 1976 Federal Facilities Compliance Agreement, and DOE Orders and other applicable requirements; and (6) placing and maintaining facilities in cold-standby. Specific polychlorinated biphenyls activities include oversight of the collection and containment system, management of Toxic Substance Control Act of 1976 regulated polychlorinated biphenyls spill sites, and management of waste generated from these activities.

Detailed Program Justification

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
OR-9C3/Depleted Uranium Hexafluoride Conversion Project	**5,521**	**21,306**	**0**

DOE currently stores 680,000 metric tons of depleted uranium as solid depleted uranium hexafluoride. This inventory is maintained at the Paducah, Kentucky and Portsmouth, Ohio gaseous diffusion plants and the East Tennessee Technology Park in Oak Ridge, Tennessee. The objective of the conversion project is to convert the depleted uranium to a less hazardous form for reuse or disposal. Included in this project is sale or disposal of lessor natural and low enriched inventories of depleted uranium hexafluoride at these sites. The conversion project includes the design, build, and operation of depleted uranium hexafluoride conversion plants at Paducah and Portsmouth in accordance with Public Law 105-204. The project also includes shipment depleted of uranium hexafluoride inventories from East Tennessee Technology Park, the dispositioning of conversion products, and decontamination and decommissioning of conversion facilities within a 25-year period.

Beginning in FY 2002, this project will be funded under the Uranium Enrichment Decontamination and Decommissioning Fund.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

OR-4M3/East Tennessee Technology Park Uranium
Facilities Maintenance **9,425** **10,195** **12,000**

The uranium hexafluoride cylinder storage element includes execution of the uranium hexafluoride cylinder inspection program, maintaining the uranium hexafluoride cylinder yard environmental and radiological monitoring programs, and routine re-stacking and relocation of cylinders to place the cylinders in improved storage conditions. The PBS also includes required preventive and corrective maintenance associated with the cylinders, cylinder storage yards, and cylinder handling equipment. In addition the PBS provides for the disposition of legacy cylinder debris/waste and the disposal of empty cylinders.

- # Continue management of polychlorinated biphenyl activities to maintain compliance with the Toxic Substances Control Act, the Uranium Enrichment Toxic Substance Control Act Federal Facilities Compliance Agreement, DOE orders and other requirements.
- # Support for Annual Report to Congress on the status of environmental, safety, and health conditions at the Gaseous Diffusion Plants, as required by the Energy Policy Act of 1992, and the annual Safety Analysis Report update for the non-leased facilities as required by DOE Order 5480.23.
- # Relocate 1,025 cylinders to remove cylinders from substandard storage conditions including those inaccessible for inspection, unsafe stocking array and areas of poor drainage.
- # Personnel, equipment, and materials to recoat some worst case depleted uranium hexafluoride cylinders to provide a barrier between the cylinder wall and the moist environment that contributes to the deterioration of the cylinder.
- # Personnel and materials necessary to monitor approximately 2,200 cylinders and storage yards. Conduct annual inspections, quadrennial inspections, and wall thickness inspections at East Tennessee Technology Park.
- # Accelerate characterization, shipping and disposal activities for depleted uranium hexafluoride cylinders.
- # Management and general maintenance and repair of an estimated 7,200 cylinders which includes the 4,700 of depleted uranium hexafluoride cylinders and other uranium cylinders located on three cylinder yards at East Tennessee Technology Park.
- # Materials and personnel performing engineering development work necessary to sustain, optimize and enhance the cylinder storage and maintenance.
- # Initiate National Environmental Policy Act activities for shipping cylinders from East Tennessee Technology Park to Portsmouth for final disposition based on new Department of Transportation regulation.
- # Continue upgrading of safety analysis reports to bring into compliance with current requirements and provide support to on-site inspections by outside independent agencies.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

OR-5M3/Paducah Uranium Facilities Maintenance 5,324 5,768 7,000

This PBS scope includes the uranium hexafluoride cylinder project, which maintains safe long-term storage of the existing uranium hexafluoride cylinder inventory of 40,200 cylinders until its eventual disposition and provides surveillance and maintenance of DOE non-leased inactive facilities and land areas not addressed in PBS OR-523. There are a total of 15 inactive facilities and approximately 200 acres of land de-leased by the United States Enrichment Corporation. Also covered under this PBS is the polychlorinated biphenyl project to maintain compliance with the Toxic Substances Control Act and Uranium Enrichment Toxic Substances Control Act Federal Facility Compliance Agreement, and applicable DOE orders and the safety documentation project which reviews and updates, as necessary, the authorization-basis documents for the DOE facilities to ensure they are current and remain applicable.

- # Continue management of polychlorinated biphenyls activities associated with maintaining compliance with the Toxic Substances Control Act, the Uranium Enrichment Toxic Substance Control Act Federal Facilities Compliance Agreement, DOE orders and other requirements.
- # Continue corrective maintenance and inspection of 15 inactive facilities at the Paducah sites.
- # Support for the Annual Report to Congress on the status of environmental, safety, and health conditions at the gaseous diffusion plants, as required by the Energy Policy Act of 1992, and the annual Safety Analysis Report update for the non-leased facilities.
- # Relocation of DOE cylinders to improve storage conditions.
- # Personnel and materials necessary to monitor cylinder and storage yards. Conduct annual inspections, quadrennial inspections, and wall thickness inspections at Paducah.
- # Characterization, shipping and disposal activities for depleted uranium hexafluoride cylinders.
- # Management and general maintenance and repair of an estimated 40,200 cylinders which includes the 36,910 of depleted uranium hexafluoride cylinders and other uranium cylinders located on 12 cylinder yards at Paducah.
- # Materials and personnel performing engineering development work necessary to sustain, optimize and enhance the cylinder storage and maintenance.
- # Continue upgrading of safety analysis reports to bring into compliance with current requirements and provide support to on-site inspections by outside independent agencies.

OR-6M3/Portsmouth Uranium Facilities Maintenance 7,486 8,099 80,000

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The Portsmouth Gaseous Diffusion Plant currently operates under a lease agreement with the United States Enrichment Corporation, to produce enriched uranium for sale to commercial applications. The objective of the Uranium Programs is to maximize sales returns to DOE, minimize long-term storage costs, plan for disposal of remaining material, cylinder management and relocation, continued facility, warehouse, and polychlorinated biphenyls systems surveillance and maintenance, and support to authorization basis document(s) activities. Additional scope will be required in support of decontamination and decommissioning of the plant: however, this is beyond scope of this PBS.

- # Continue operations that place and maintain the facility in cold-standby.
- # Continue offsite storage and initiate processing of highly enriched uranium oxides at a commercial facility.
- # Continue surveillance and maintenance activities plus power and utilities costs associated with the 158 permanently shut down cells in the highly enriched uranium building X-326.
- # Continue oversight and management of the highly enriched uranium removal program.
- # Continue corrective maintenance and inspection of six active and 14 inactive facilities at the Portsmouth sites.
- # Maintain infrastructure and perform surveillances and maintenance of facilities in cold-standby.
- # Continue management of polychlorinated biphenyl activities associated with maintaining compliance with the Toxic Substance Control Act, the Uranium Enrichment Toxic Substance Control Act Federal Facilities Compliance Agreement, DOE orders and other requirements.
- # Support for the Annual Report to Congress on the status of environmental, safety, and health conditions at the Gaseous Diffusion Plants, as required by the Energy Policy Act of 1992, and the annual safety analysis report update for the non-leased facilities.
- # Relocation of DOE cylinders to improve storage conditions.
- # Personnel, equipment, and materials to recoat DOE cylinders to provide a barrier between the cylinder wall and the moist environment that contributes to the deterioration of the cylinder.
- # Personnel and materials necessary to monitor cylinder and storage yards. Conduct annual inspections, quadrennial inspections, and wall thickness inspections at Portsmouth.
- # Characterization, shipping and disposal activities for depleted uranium hexafluoride cylinders.
- # Management and general maintenance and repair of an estimated 18,000 cylinders which includes the 16,000 of depleted uranium hexafluoride cylinders and other uranium cylinders located on two cylinder yards at Portsmouth.
- # Materials and personnel performing engineering development work necessary to sustain, optimize and enhance the cylinder storage and maintenance.
- # Initiate National Environmental Policy Act activities for shipping cylinders from East Tennessee Technology Park to Portsmouth based on new Department of Transportation regulation.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Continue upgrading of safety analysis reports to bring into compliance with current requirements and provide support to on-site inspections by outside independent agencies.

OR-1P3/Oak Ridge Reservation Pre-Existing Liabilities . . . 742 630 809

Oak Ridge Reservation pre-existing liabilities, include activities and expenses associated with Post Retirement Life and Medical Benefits and Long-Term Disability Benefits to transitioned Bechtel Jacobs Company employees supporting enrichment facilities programs while working as first or second tier subcontractors. It also covers pre April 1, 1998, retirees associated with enrichment facilities and employees on long-term disabilities prior to April 1, 1998, associated with enrichment facilities.

Contractual liability for Lockheed Martin Energy Systems and Bechtel Jacobs, LLC, post-retirement life and medical expenses for employees with service prior to the privatization of United States Enrichment Corporation in 1993, as further defined by the memorandum of agreement between the Office of Management and Budget and United States Enrichment Corporation, dated April 6, 1998.

OR-5P3/Paducah Pre-Existing Liabilities 4,020 4,808 3,784

Paducah pre-existing liabilities, include activities and expenses associated with Post Retirement Life and Medical Benefits. These benefits are applicable to retirees and contractor employees with service at the Paducah Gaseous Diffusion Plant prior to the lease agreement with United States Enrichment Corporation and DOE in July 1993. This scope has been expanded to include retired employees working at the Gaseous Diffusion Plant prior to the date of the United States Enrichment Corporation privatization and as further defined by the memorandum of agreement between the Office of Management and Budget and United States Enrichment Corporation, dated April 6, 1998.

Contractual liability for Lockheed Martin Energy Systems post-retirement life and medical expenses for employees with service prior to the privatization of United States Enrichment Corporation in 1993, as further defined by the memorandum of agreement between the Office of Management and Budget and United States Enrichment Corporation, dated April 6, 1998.

OR-6P3/Portsmouth Pre-Existing Liabilities 4,184 5,867 7,191

Portsmouth pre-existing liabilities, include activities and expenses associated with Post Retirement Life and Medical Benefits. These benefits are applicable to retirees of the Ohio Valley Electric Company and contractor employees with service at the Portsmouth Gaseous Diffusion Plant prior to the lease agreement with United States Enrichment Corporation and DOE in July 1993. This scope has been expanded to include retired employees working at the Gaseous Diffusion Plant prior to the date of the United States Enrichment Corporation privatization as further defined by the memorandum of agreement between the Office of Management and Budget and United States Enrichment Corporation, dated April 6, 1998.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Contractual liability for Lockheed Martin Energy Systems and the Ohio Valley Electric Corporation post-retirement life and medical expenses for employees with service prior to the privatization of United States Enrichment Corporation in 1993, as further defined by the memorandum of agreement between the Office of Management and Budget and United States Enrichment Corporation, dated April 6, 1998.
- # Support United States Enrichment Corporation severance costs related to the shutdown of Portsmouth Gaseous Diffusion Plant.

Total, Other Uranium Activities	36,702	56,673	110,784

Explanation of Funding Changes From FY 2001 to FY 2002

	FY 2002 vs. FY 2001 ($000)
OR-9C3 /Uranium Hexafluoride Conversion Facility	
# Transferred to the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2002	-21,306
OR-4M3/East Tennessee Technology Park Uranium Facilities Maintenance	
# Increase due to additional requirements to upgrade safety reports and the authorization basis documents for nuclear facilities	1,805
OR-5M3/Paducah Uranium Facilities Maintenance	
# Increase due to additional requirements to upgrade safety reports and the authorization basis documents for nuclear facilities.	1,232
OR-6M3/Portsmouth Uranium Facilities Maintenance	
# Increase is primarily due to placing facility on cold-standby.	71,901
OR-1P3/Oak Ridge Reservation Pre-Existing Liabilities	
# Change is not significant.	179
OR-5P3/Paducah Pre-Existing Liabilities	
# Decrease due to changes in Lockheed Martin Energy Systems post-retirement and life and medical liabilities.	-1,024
OR-6P3/Portsmouth Pre-Existing Liabilities	
# Increase is to fund minimum amount required to maintain the Ohio Valley Electric Corporation post-retirement life and medical fund and additional DOE liabilities due to facility transition to cold-standby.	1,324
Total Funding Change, Other Uranium Activities	54,111

East Tennessee Technology Park Three-Building Decontamination and Decommissioning and Recycle Project Oak Ridge, Tennessee (OR-493) [a] [b]

Significant Changes

- The majority of the increase in project contingency is the result of the Departmental decision to pay BNFL Inc. (BNFL) for contractually decontaminated nickel, carbon steel, copper, and aluminum returned to the Department of Energy (DOE). This was necessary to carry out the Departmental decision to prohibit the free release into commerce of volumetrically contaminated nickel and suspension of the release of surface contaminated metals. This has transferred the cost that was anticipated being recovered by BNFL from commercial markets to DOE. This also increases the cost of independent verification and other project support cost. The cost is reflected as contingency because DOE has not finalized contract modifications on this issue and doesn't know the duration of the suspension and/or moratorium. In addition, the exact quantity of nickel and other metals to be returned to DOE is only an estimate at this time. Project duration will be extended from FY 2004 to 2005 to cover additional material quantities to be removed. The extension of the contract and the costs for the Department to purchase contractually decontaminated metals have limited the impact of these changes on the Department's fixed price contract with BNFL, but they have resulted in increases to the Department's Total Project Cost.
- The Total Project Cost has increased from $295,198,000 in our FY 2001 Budget to $348,085,000. This is reflected as an increase in contingency from 6.0 percent to 23.1 percent. This increase in contingency is intended to address project changes due to metal release policy changes and also includes provisions for additional miscellaneous scope increases, increased project material quantities, and other potential changes or claims. The contingency is expected to decrease as these issues are negotiated to resolution over the coming year.
- Renegotiation of the contract to incorporate a Departmental decision to prohibit free release of volumetrically-contaminated nickel, and miscellaneous other contract items is underway and should be completed by summer 2001.

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[a] This Project Baseline Summary includes funding for other activities which are not reflected in this datasheet.

[b] Project Baseline Summary OR-493 contains additional funding for the period FY 2004 through FY 2008 for decontamination and decommissioning of the K-25 and K-27 buildings. This project datasheet covers the ongoing decontamination and decommissioning of three of the process buildings (K-29, K-31, and K-33).

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Mobilization Start	Physical Construction Complete		
FY 1999 Budget Request	N/A	N/A	4Q 1997	1Q 2004	272,126	283,866
FY 2000 Budget Request *(Current Baseline Estimate)*	N/A	N/A	4Q 1997	1Q 2004	284,298	284,298
FY 2001 Budget Request	N/A	N/A	4Q 1997	4Q 2004	295,198	295,198
FY 2002 Budget Request	N/A	N/A	4Q 1997	1Q 2005	348,085	348,085 [a]

[a] Represents the original base amount of the BNFL contract of $263,351,887, plus approved baseline changes of $7,143,898 for a revised contract total of $270,495,785. To this amount a 23.1 percent contingency for potential fluctuations in the metals market, additional metal quantities, Departmental decisions on recycling, and other associated cost for a total BNFL contract and support cost of $348,085,000. This amount is net of the value of salvage material recovered by BNFL during decontamination and decommissioning activities, estimated at $16,920,415. In addition, this estimate includes project support costs of $15,172,000 for fencing, office moves and set up, contractor interface, independent verification team support, technical support, and miscellaneous documents.

2. Financial Schedule (Operating Expense Funded)

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Cost
1997	8,399	8,399	6,937
1998	19,599 [a]	19,599	16,789 [b]
1999	44,000 [c]	44,000	46,457
2000	62,500	62,500	25,105
2001	46,000 [d]	46,000	58,570
2002	32,000 [d e]	32,000	53,640
2003	57,100	57,100	56,100
2004	57,000	57,000	54,000
2005	21,487	21,487	30,487

3. Project Description, Justification and Scope

The East Tennessee Technology Park gaseous diffusion process buildings were permanently closed in 1987, and the uranium enrichment mission transferred to the United States Enrichment Corporation at Portsmouth, Ohio, and Paducah, Kentucky. The three buildings of the project are filled with diffusion equipment which is contaminated with uranium and contains barrier material representing a classified technology requiring provisions for security and protection. The three buildings are currently unusable and require continuous surveillance and maintenance activities estimated to cost approximately $80,700,000 for the ten-year period FY 1997 through FY 2006 (estimate taken from *Engineering Evaluation/Cost Analysis*, DOE/OR/02-1579&D1, April 1997).

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[a] The FY 1998 Congressional Budget Request, Volume 5, dated February 1997, pg. 880, cited the subject project, beginning in FY 1997, and was included in the $54,189,000 for the East Tennessee Technology Park (K-25) Decommissioning in FY 1998; includes $1,125,000 of program management support and all funding associated with PBS OR-493 (UE D&D Fund).

[b] Includes approved Baseline Change Proposals and Option-I, Switchyard Demolition.

[c] Termination liability of $3,500,000 was transferred to more critical environmental management compliance projects for FY 1999. Funding will be restored within FY 2003 appropriations.

[d] FY 2001 funding request was reduced from $60,200,000 to $46,000,000 and FY 2002 funding request was reduced from $47,000,000 to $32,000,000 due to BNFL not making enough progress to require the higher level of funding and to level fund the project over the remaining life of the project. Funding for FY 2003 through FY 2005 was increased to cover FY 2001 and FY 2002 deferrals and to increase funding for anticipated scope differences.

[e] The limited funding levels may result in a directed change to the contractors schedule of decommissioning activities. Any such change may result in a request for equitable adjustment and increase the total estimated cost of the contract.

The challenge for this project is to link the ability to remove equipment/material and to clean up the buildings with some economically viable salvage/recycle of the equipment/material in an effort to lower the overall cost to the Government. The cost recovery portion of the project (the equipment and material) requires unique contractor capabilities due to the contamination present, the classified nature of much of the recyclable material, and the limited market for previously-contaminated material.

The East Tennessee Technology Park Three Building Decontamination and Decommissioning and Recycling Project encompasses Buildings' K-29, K-31, and K-33. The three buildings contain approximately 45 percent of the five East Tennessee Technology Park Gaseous Diffusion Plant building materials.

The following table summarizes the quantity of contaminated or potentially contaminated metal planned to be removed from the facilities, decontaminated and processed as appropriate, and economically recycled.

East Tennessee Technology Park Three Building Decontamination and Decommissioning and Recycling Initiative Quantity Data

	(building)		
	K-29	K-31	K-33
Building Size (Gross Sq. Ft.) . . .	451,000	1,660,000	2,780,000
Metal Quantities for Processing [a]			
Fe Metals (Tons)	10,624	31,678	62,489
Nickel (Tons)	692	1,563	3,752
Copper (Tons)	1,165	2,810	7,036
Aluminum (Tons)	899	2,301	4,140

The scope of the East Tennessee Technology Park Three-Building Decontamination and Decommissioning and Recycle Project includes the following:

- perform decontamination and decommissioning and recycle under fixed-price contract;
- perform surveillance and maintenance services;
- remove all process equipment and materials from the three buildings;
- decontaminate vacant areas within the buildings to industrial reuse standards;
- decontaminate and recycle the majority of materials and equipment;
- disposal of all waste; and
- provide the buildings ready for industrial occupancy as they are completed.

[a] 10,557 tons of additional aluminum, carbon steel, and copper above the listed quantities in the three buildings. The schedule and cost impact has not been negotiated.

The three building concept is the beginning of full decontamination and decommissioning of the five East Tennessee Technology Park gaseous diffusion plant buildings. The concept directly supports reindustrialization of the East Tennessee Technology Park, which is targeted as a key mission by DOE resulting in accelerated cleanup, cost savings, and indirect benefits to the Oak Ridge work force and community. The Department has signed an agreement with the Community Reuse Organization of East Tennessee to encourage utilization of the East Tennessee Technology Park site. This agreement allows the Community Reuse Organization of East Tennessee to lease the East Tennessee Technology Park facilities from DOE and in turn sublease them to outside companies to use them for a variety of activities. The three buildings of the proposed concept will be leased to the Community Reuse Organization of East Tennessee, one by one, as soon as building decontamination is completed.

The intent of this project is to find the best economical match between the Government's desire to have the three buildings cleaned up and available for alternative use, and to minimize the overall cost of accomplishing the task. BNFL in fulfilling this charge, brings their expertise in cleaning up similar diffusion facilities at Capenhurst, Great Britain. The decontamination and recycle enterprises will be negotiated and established by BNFL. Recyclable materials will be recovered and delivered to these enterprises in forms that meet the acceptance and fulfill the specialized and focused needs of BNFL's business associates.

In this concept, BNFL and its subcontractors have expertise in each of the decontamination and decommissioning, recycle, and waste disposal areas needed to perform the scope of work described above. BNFL was selected through a competitive process, whereby, an announcement was published in the Commerce Business Daily requesting expressions of interest from all parties desiring to perform the decontamination and decommissioning of the three process buildings. Several responses were received, but only BNFL met all the terms set forth in the published announcement. Therefore, BNFL was awarded a fixed-price contract for delivering vacant and decontaminated buildings to DOE/Oak Ridge Operations Office. The work will be performed utilizing external licensing by the Tennessee Department of Environment and Conservation (which has Nuclear Regulatory Commission oversight responsibilities in Tennessee) and under the Office of Safety and Health Administration rules (off-site) and DOE oversight (on-site) utilizing Work Smart Standards.

In this approach, savings occur (estimated at approximately $450,000,000 over the traditional management and operating approach) due to a combination of efforts including: 1) reduced engineering and management overhead and fees; 2) reduced surveillance and maintenance cost; 3) efficiencies in the approach to recycle and building decontamination based on BNFL's successful experiences at Capenhurst; 4) reduced contingency due also to BNFL's experience and confidence based on Capenhurst decontamination and decommissioning; and 5) DOE's assignment of all materials in the three buildings to BNFL. [a] In return for these benefits, BNFL takes responsibility for recycle/salvage activities through whatever means BNFL selects, including waste containers or other products fabricated from recycled metal. BNFL is following an approach that disposes of more

[a] As of January 12, 2000, the Department will retain ownership of the nickel under this contract and as of July 13, 2000, the Department will buy back surface contaminated metal that meets contractual requirements for release by BNFL.

low-valued metal than in the previous approach; and BNFL is using the least-net-cost method for decontamination and recycle of other assets.

Additional benefits to the Department from the East Tennessee Technology Park Three Building Decontamination and Decommissioning and Recycle Project includes:

- Reduced risk to the public, workers, and the environment by accomplishing decontamination and decommissioning of the buildings sooner than planned. Risk is related to the deposited uranium products left in the gaseous diffusion plant systems at shutdown, coupled with the fact that neither the systems nor buildings are designed for long-term storage of nuclear materials.
- Risk is assumed by the contractor during cleanup, including risks of waste handling and disposal.
- Removal of process systems eliminates fissile material hold-ups as well as risk of potential criticality accidents. This is consistent with requirements within the Defense Nuclear Facilities Safety Board 94-1 Implementation Plan.
- The approach leaves buildings standing that will be used by DOE and the Community Reuse Organization of East Tennessee in efforts to reindustrialize the East Tennessee Technology Park.
- The approach results in the further establishment and verification of efficient decontamination and decommissioning methods that will be made available to DOE for use at other facilities.
- Further, incidental benefits include the establishment of equipment/metal decontamination and recycle capabilities in Oak Ridge which will maintain jobs in the region. BNFL's approach allows for management and operating worker transition to the private sector and will create approximately 600 replacement jobs.

4. Details of Cost Estimate

	(dollars in thousands) Current Estimate	Previous Estimate
Design Phase		
None	0	0
Total, Engineering, Design, Inspection, and Administration of Construction Costs	0	0
Construction Phase		
Removal cost less salvage (BNFL contract)	270,496 [a]	267,086
Project Support Costs (5.6% of the contract)	15,172	12,172
Total, Construction Costs	285,668	279,258
Contingencies		
Construction Phase (23.1% of the contract)	62,417 [b]	15,940
Total, Costs (TEC & TPC)	348,085 [c]	295,198

The National Academy of Sciences recommendation (*Affordable Cleanup?*, February 1996) included a least cost scenario to accomplish the East Tennessee Technology Park gaseous diffusion plant decontamination and decommissioning program. While the National Academy of Sciences did not intend for the *Affordable Cleanup?* document to represent a detailed cost estimate, a scaling exercise is included that bounds the 5-building cleanup in the range from $510,770,000 to $935,960,000. This bound can be pro-rated to a 3-building bound with the range from $204,308,000 to $374,484,000 with a mid-point of $289,396,000. These estimates are unescalated dollars, the mid-point amount escalated is $321,438,000.

5. Method of Performance

BNFL will finance the project, design the decontamination facilities, apply for and receive required permits and licenses, construct necessary facilities and bring them on-line, operate the facilities to decontaminate metals and equipment, salvage metal and equipment, and deactivate the decontamination facilities. BNFL will recover the resources it has invested both through recycle activities and through the delivery of vacated and decontaminated

[a] This direct project cost increase is result of approved baseline changes for repairing cranes, electrical system, storm damage, and miscellaneous small scope changes totaling $3,410,000.

[b] The $46,477,000 increase in contingency is directly related to the Departmental decision to prohibit the release into commerce of volumetrically contaminated nickel, surface contaminated metal, and increase in material quantities above contract baseline.

[c] This estimate for the contracting approach is expected to provide a cost savings/avoidance of approximately $450,000,000 compared to the traditional Management and operating approach.

building space 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 from the government to BNFL.

The Department will request sufficient annual appropriations to cover the anticipated scope of work to be performed by BNFL and the necessary support costs such as independent verification support, with an appropriate rate of return in the event the contractor defaults or DOE chooses to cancel for Government convenience. Provisions will be included in the contract to ensure that current year work scope is limited to the available funding within the contract. Additional liabilities for a Government termination for convenience would amount to approximately $3,500,000 for demobilization and cleanup of the decontamination and decommissioning workshop and relocation and severance pay for affected employees. Should termination occur, the additional funding would be identified within the then current funding at the Oak Ridge Operations Office.

The total cost of the decontamination and decommissioning, recycling, and waste disposal is larger than the value of the material and products that can be removed from the three buildings by approximately $280,000,000 to $290,000,000 which reflects the Government's contractual liability. The contractor will incur substantial up-front expenses such as design and construction of a disassembly and size reduction workshop to be located on-site, and design and construction of a nickel electro-refining facility (located either on-site or off-site). Payments to the contractor are to be consistent with services provided, e.g., areas of the buildings cleaned of equipment and material. The payments will be made from annual appropriations based on: 1) the original obligation for the contractor's start-up costs; 2) amortization of the contractor's capital costs; 3) removal and decontamination of equipment/material; 4) recycling of materials; 5) decontamination of the buildings; and 6) disposal of wastes.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2000	FY 2001	FY 2002	Outyears	Total
Project Cost						
Facility Cost						
Design	0	0	0	0	0	0
Construction	70,183	25,105	58,570	53,640	140,587	348,085
Total Facility Cost	70,183	25,105	58,570	53,640	140,587	348,085
Other Project Cost						
Conceptual design costs	0	0	0	0	0	0
NEPA documentation costs	0	0	0	0	0	0
Other project-related costs	0	0	0	0	0	0
Total other project costs	0	0	0	0	0	0
Total, Project Costs	70,183	25,105	58,570	53,640	140,587	348,085
LESS: Non-Federal contribution	0	0	0	0	0	0
Total Project Cost (TPC)	70,183	25,105	58,570	53,640	140,587	348,085

7. Related Annual Funding Requirements

(dollars in thousands)

	Current Estimate	Previous Estimate
Annual Facility operating costs	N/A	N/A
Annual Facility maintenance and repair costs	N/A	N/A
Total related annual funding [a]	N/A	N/A

8. Background Issue

This contract is a negotiated fixed-price contract with BNFL to cleanup three of the five gaseous diffusion buildings at the East Tennessee Technology Park. BNFL will provide sufficient financing until elements of performance are completed, i.e., portions of the buildings are cleaned up. Payments will be made to BNFL upon completion of equipment removal from individual portions of the buildings and other payments after each building is decontaminated. The offset from the recycling initiative, based on fair market value, is adjustable if prices as indexed on the American Metals Market fluctuate more than 5 percent from the prices negotiated as part of the contract. Changes above or below five percent shall be split between DOE and the contractor. This will occur 17 times in the course of the contract.

9. Contracting Authority

The authority for DOE to enter into this contract is found at 42 U.S.C. § 7256(c). Authority for DOE to offset against the contract price paid to BNFL the cost of proceeds that BNFL receives from the sale of property it acquires as partial consideration for the contract work is found in Subpart 37.3, "Dismantling, Demolition, or Removal of Improvements" of the Federal Acquisition Regulation and in 40 U.S.C. § 485(e) of the Federal Property and Administrative Services Act of 1949, as amended.

Authority for the Federal Acquisition Regulation Subpart 37.3 is found in 40 U.S.C. § 486(c). See 48 Federal Register 42365 (Sept. 19, 1983). The Federal Acquisition Regulation Subpart 37.3 provides that when the Government pays a contractor to dismantle or demolish structures, in further consideration of contract performance, title to property to be dismantled or demolished maybe transferred to the contractor, and the value of this property will be considered when determining payment to the contractor. See Federal Acquisition Regulation 37.303; Federal Acquisition Regulation 37.304(a); Federal Acquisition Regulation 52.237-4. Federal Acquisition Regulation Subpart 37.3 is applicable to this contract because the contract requires BNFL to dismantle, demolish and remove the interiors of the three process buildings at the East Tennessee Technology Park. In consideration for this work, BNFL will receive a fixed price and title to the property in the three process buildings. BNFL intends to recycle and sell a certain amount of this property. The fixed price paid by DOE will reflect credit of a dollar amount that the parties agree reflects the expected value of the recycled

[a] Because this is not a construction project, there are no related annual maintenance and repair costs.

property; i.e., the proceeds received by BNFL from the sale of the property it has received as partial consideration for its work under the contract.

40 U.S.C. § 485(a) provides that proceeds from any "disposition of surplus property" shall be sent to the Treasury as miscellaneous receipts unless one of the exceptions set forth in 40 U.S.C.§ § 485(b), (c), (d) or (e) is applicable. Section 485(e) is applicable to the use of proceeds from the disposition of property by BNFL under the contract. This section provides that "any contract" entered into by an executive agency such as DOE may authorize that "any sale of property in the custody of the contractor . . . be credited to the cost or price of the work covered by such contract . . ." DOE therefore may credit the proceeds from the sale of property provided to BNFL under this decontamination and decommissioning contract as partial consideration for the contract work against the total fixed price paid by DOE to BNFL.

The Department of Energy and BNFL anticipate that the property to be provided to BNFL as partial consideration for BNFL's work will contain metals that can be recycled and subsequently sold. However, since DOE and BNFL expect that most of these metals are contaminated with radionuclides and other substances (e.g., PCB's) and many are in a classified configuration, the metals must be decontaminated and declassified before they can be recycled. Most of the fixed contract price will reflect the considerable decontamination and associated work that must be performed by BNFL. This work therefore is deemed to be outside the intent of the language under the section entitled "Use of Receipts From Leasing or Selling Government Property or Assets" in Title III of both the Energy and Water Development Appropriations Bill, 1997 (H. R. Rep. 104-679) and the Conference Report entitled "Making Appropriations for Energy and Water Development for The Fiscal Year Ending September 30, 1997, And for Other Purposes" (H. R. Rep.104-782).

The DOE/Oak Ridge Operations Office Contracting Officer for the East Tennessee Technology Park Three-Building Decontamination and Decommissioning and Recycling Project has evaluated and deemed it to be in the "Best Interest" of the Government to utilize the property generated by the dismantling and demolition activities as part of the compensation to be provided the contractor for decontamination and decommissioning services. The reasons for utilizing this concept and subsequent determination are as follows:

- DOE has legal authority to enter into this contract.
- The intent of this project is to find the best economical match between the Government's desire to clean the three buildings up and to minimize the overall cost of the task.
- The cost recovery aspects of the equipment and material in the project are not readily available due to the contamination present, the classified nature of much of the material, and the limited market for previously contaminated material.
- The material has no value in the current state of contamination and the Government has no use for the material.
- The expertise of BNFL in cleaning up similar diffusion facilities in Great Britain, their financial backing, and their industrial contacts.

- BNFL will negotiate and establish decontamination and recycle enterprises. Recyclable materials will be recovered and delivered to these enterprises in forms that meet the acceptance and fulfill the specialized and focused needs of BNFL's business associates.
- The DOE/Oak Ridge Operations Office does not have the expertise in house to recycle and market this material at a comparable cost. Substantial investment would be required, either in-house or through a separate contract to accomplish the same task.

10. Project Status (as of September 30, 2000)

- BNFL assumed responsibility for Buildings K-31 and K-33 on January 5, 1998, and Building K-29 on July 1, 1998.
- BNFL started process equipment dismantlement and removal on July 1, 1998.
- BNFL awarded Option-I, Dismantlement and Removal of K-31 and K-33 Switchyards, for net DOE cost of $196,432, and completed September 28, 2000.
- Overall cleanup of K-33 is in excess of 42 percent complete versus 75 percent scheduled.
- Overall project is 21 percent complete versus 39 percent scheduled.
- Dismantled and dispositioned 19,500 tons of metal, either as low-level waste or recycled metal, from K-33.
- Dismantled 16,350 tons of additional metals that are waiting disposition through compactor, classified and/or UCNI disposal, or recycle in K-33.
- Dismantled and dispositioned 4,615 tons of metal from two switchyards.
- BNFL awarded Option II to package and transport 20,000 drums (13,210 tons) of stabilized pond and Portsmouth soils waste out of K-31 and K-33 to Envirocare. Completed on April 13, 2000.
- The Oak Ridge Operations Office has negotiated and approved fifteen baseline change proposals totaling $7,143,898.
- Line Item 1 completed on schedule.
- Line Item 2 four months behind schedule.
- Line Item 3 completed September 27, 1999, 6 months behind schedule.
- Line Item 4 completed on schedule, June 2, 1999.
- Line Item 5, complete unit-7 removal in K-33, (dismantlement only) September 30,1999, versus scheduled completion of dismantlement and removal by August 1, 1999. The Department withholding payment pending completion of large component removal.

02-U-101, Depleted Uranium Hexafluoride Conversion Project, Paducah, Kentucky, Portsmouth, Ohio (OR-9C3)

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Estimated Project Cost[1] ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2001 Budget Request (Preliminary Estimate)	1Q 2002	3Q 2003	2Q 2004	4Q 2005	365,000	461,800
FY 2002 Budget Request (Preliminary Estimate)	"	"	"	"	"	"

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations [a]	Obligations [b]	Cost
2000	5,521 [c]	5,521	0
2001	21,306 [d]	21,306	12,000
2002	10,000[d]	10,000	24,827
2003	43,000	43,000	43,000
2004	135,000	135,000	135,000
2005	125,000	125,000	125,000
2006	25,173	25,173	25,173
TOTAL	365,000	365,000	365,000

3. Project Description, Justification and Scope

Design, build, and operate for five years two depleted uranium hexafluoride (DUF6) conversion facilities, one located at the Paducah Gaseous Diffusion Plant (GDP) site, the other located at the Portsmouth GDP site. The conversion plants will convert the DUF_6 to a more stable chemical form which is suitable for either beneficial use or disposal. The contractor selected will design the conversion plants using its proposed technology; construct the plants; and operate the plants for a five-year period, which will include maintaining depleted uranium and product inventories, transporting depleted uranium from the East Tennessee Technology Park (ETTP) to the Portsmouth site for conversion, and transporting-converted product that is not needed for other uses to a disposal site. The selected contractor will be expected to arrange for the disposal of such excess material at an appropriate site.

The project follows directly from the decision presented in the *Record of Decision for Long-Term Management and Use of Depleted Uranium Hexafluoride* (issued in August 1999), namely to begin conversion of the DUF_6 inventory as soon as possible, and is consistent with the *Final Plan for the*

[a] For multiyear funded projects, appropriation is needed a year ahead of contract commitments to preclude Antideficiencies. 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.

[c] These funds were appropriated under the Office of Nuclear Energy and are shown comparably in the “Other Uranium Activities.”

[d] $24 million ($12M available each year FY 2001 and FY 2002) of USEC/DOE ($66M) MOA funds available for completion of these conversion facilities. This is dependent upon current needs assessment being conducted for cylinder maintenance and other requirements at Paducah and Portsmouth.

Conversion of Depleted Uranium Hexafluoride, which the Department submitted to Congress in July 1999 in response to Public Law 105-204. Scheduling is based on meeting a construction start date of January 31, 2004, per Public Law (PL) 105-204.

Over the last five decades, large quantities of uranium were processed using gaseous diffusion in order to produce enriched uranium for national defense and civilian purposes. These enrichment activities began as part of the Manhattan Project during World War II. DUF_6 was generated as a byproduct of the enrichment process.

A legacy of approximately 700,000 metric tons of DUF_6 is currently stored at the Paducah site in Kentucky, the Portsmouth site in Ohio, and the East Tennessee Technology Park (ETTP) in Tennessee (formerly known as the K-25 site). This inventory of DUF_6 is stored outdoors in about 57,700 large steel cylinders, typically 12 feet long by 4 feet in diameter. Approximately 37,000 cylinders are stored at the Paducah site, 16,000 at the Portsmouth site and 4,700 at the ETTP site.

The advanced age and storage conditions of some of the cylinders show evidence of external corrosion, which has created a potential environmental and safety hazard due to cylinder breaching. Because the DUF_6 is a solid at ambient temperatures and pressures, it is not readily released from a cylinder following a leak or breach. When a cylinder is breached, moist air reacts with the exposed DUF_6 solid and iron, resulting in the formation of a dense plug of solid uranium and iron compounds and a small amount of hydrogen fluoride (HF) gas. This plug limits the amount of material released from a breached cylinder. When a cylinder breach is identified, the cylinder is repaired or its contents are transferred to a new cylinder.

DOE has responsibility for continued management of the DUF_6 cylinders stored at the Paducah, Portsmouth, and ETTP sites. Since 1990, the Department has conducted a comprehensive cylinder management program in order to minimize risks to workers, the public, and the environment until the DUF_6 is dispositioned. The core features of the DUF_6 cylinder management program are conducting annual storage cylinder inspections; moving cylinders to properly spaced storage locations on upgraded, concrete storage yards; coating cylinders to inhibit corrosion; and developing and implementing options to repair cylinders exhibiting accelerated corrosion. This effort is consistent with the consent agreements between the Department and the States of Ohio and Tennessee, and Recommendation 95-1 of the Defense Nuclear Facility Safety Board.

In 1994, the Department began working on the draft *Programmatic Environmental Impact Statement for Alternative Strategies for the Long-Term Management and Use of Depleted Uranium Hexafluoride* (Draft PEIS). The Draft PEIS and supporting documents were published in December 1997. The preferred alternative presented centered on continued safe storage of the cylinders while investigations into alternative uses for the depleted uranium continued. Based on the comments received during the draft PEIS comment period, the preference of the public and involved industry was not to wait for uses to be developed, but rather to begin conversion of the DUF_6 promptly.

In addition, Congress stated its opinion with regard to DUF_6 in Public Law (P.L.) 105-204, signed by the President in July 1998. This law directed the Secretary of Energy to prepare, and the President shall include in the budget request for Fiscal Year 2000, a plan and proposed legislation to ensure that all amounts accrued on the books of the United States Enrichment Corporation (USEC) for the disposition of DUF_6 would be used to commence construction of, not later than January 31, 2004, and to operate, an onsite facility at each of the

gaseous diffusion plants at Paducah, Kentucky, and Portsmouth, Ohio, to treat and recycle depleted uranium hexafluoride consistent with the National Environmental Policy Act (NEPA). Approximately $373 million was accrued by USEC for this purpose, however, P. L. 105-204 did not make these funds available to the Department.

The Department's *Final Programmatic Environmental Impact Statement for Alternative Strategies for the Long-Term Management and Use of Depleted Uranium Hexafluoride*, (hereafter Final PEIS) was issued April 16, 1999. The Final PEIS defines the preferred alternative for managing the DUF_6 as follows: Begin conversion of the DUF_6 inventory as soon as possible, either to uranium oxide, uranium metal, or a combination of both, while allowing for use of as much of the inventory as possible. A Record of Decision (ROD) selecting the Final PEIS preferred alterative was issued in August 1999. The ROD clarified that DOE will take the necessary steps to promptly convert the DUF_6 inventory to depleted uranium oxide for use or storage, if necessary, in anticipation of future use or disposal. Conversion to depleted uranium metal would occur only when uses for the converted material are identified.

The Department has also responded to P. L. 105-204 by issuing the *Initial Plan for the Conversion of Depleted Uranium Hexafluoride*, on March 12, 1999, and the *Final Plan for the Conversion of Depleted Uranium Hexafluoride*, (referred to as the "Plan") in July 1999. The Plan incorporates information received from the private sector, ideas gained from members of the affected communities, Congress, and other interested stakeholders, as well as the results of the analyses for the Final PEIS.

The Plan describes the DUF_6 conversion project which will chemically process the DUF_6 to create products that would present both a lower long-term storage hazard and provide a material that would be suitable for use or disposal. A key element of the Plan is to fully integrate into a single contracting arrangement all elements of managing the Department's DUF_6 inventory: cylinder surveillance and maintenance; the design, construction, operation, and final decommissioning of conversion facilities; storage or use of conversion end products; and disposition of end products not used -- uranium and fluorine compounds and empty storage cylinders. The Plan estimated it would take 25 years of plant operations to convert all its depleted uranium. As a parallel effort, the Plan called for the Department to continue research and development (R&D) to identify potential uses for depleted uranium. Although the Plan was presented in as definitive a form as possible, it states that some aspects of the approach presented would evolve as the procurement process and interactions with the private sector and stakeholders continued.

The Department announced availability of a draft initial Request for Proposals (RFP) for DUF_6 conversion services on July 30, 1999. The RFP called for a contractor to design, construct, and operate DUF_6 conversion facilities at Paducah, KY, and Portsmouth, OH. The resulting conversion plants would chemically process the DUF_6 currently stored at Paducah, Portsmouth, and ETTP to create products that would present both a lower long-term storage hazard and provide a material that would be suitable for use or disposal.

As a consequence of comments received on the draft initial RFP concerning the levels of transuranic contamination, the Department revisited some of the assumptions about management of the DUF_6 inventory made previously in preparing the DUF_6 PEIS, ROD, and the Plan. Specifically, the Department delayed the issue of the final RFP while the presence of transuranic and technetium contamination in the DUF_6 cylinders was characterized using existing process knowledge and additional sampling of cylinders. The results of this

characterization indicated non-detectable or very low levels of transuranics dispersed in the DUF_6 stored in the cylinders. However, there are higher levels of transuranics associated with "heels" remaining in a small number of cylinders formerly used as recycled uranium feed cylinders. In addition, as documented in the May 2000 Oak Ridge National Laboratory study *Assessment of Preferred Depleted Uranium Disposal Forms*, the four potential conversion forms (triuranium octoxide (U_3O_8), uranium dioxide (UO_2), uranium tetrafluoride (UF_4), and uranium metal) were evaluated as acceptable for near-surface disposal at sites such as the Nevada Test Site (NTS) and Envirocare in Utah.

In FY 2001, the responsibility for the project was transferred from the Office of Nuclear Energy, Science and Technology to the Office of Environmental Management (EM). The Energy and Water Development Appropriation for Fiscal Year 2001, Public Law 106-377, transferred funding for uranium program activities to a new account, Uranium Facilities Maintenance and Remediation (UFM&R), which is managed by EM. In addition, several details associated with the procurement of the two facilities have been revised as the procurement strategy and solicitation have evolved. In particular, the schedule milestones originally provided to Congress in the *Final Plan for the Conversion of Depleted Uranium Hexafluoride* in July 1999 have been revised to reflect a construction start date of January 31, 2004.

On October 31, 2000, the Department, issued the final RFP to design, construct, and operate conversion facilities at Paducah and Portsmouth. Vendor proposals were received on March, 1, 2001, and the contract is expected to be awarded during the last quarter of FY 2001.

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase		
Preliminary and Final Design Costs (5.5% of TEC)	20,000	0
Design Management (.8% of TEC)	3,000	0
Project Management (.3% of TEC)	1,000	0
Total, Design Costs	24,000	0
Total, Construction Costs	341,000	0
	365,000	0

5. Method of Performance

The Oak Ridge Operations Office (ORO), will manage the award of a performance based cost plus contract to design, construct, and operate (for a five-year period) DUF_6 conversion facilities at the Department's Gaseous Diffusion Sites in Paducah, Kentucky and Portsmouth, Ohio.

The facilities will be Government-owned and contractor-operated. These facilities will convert the Department's inventory of DUF_6 now located at the Paducah Gaseous Diffusion Plant, the Portsmouth

Gaseous Diffusion Plant, and the East Tennessee Technology Park (ETTP) some other stable chemical form acceptable for transportation, beneficial use/reuse, and/or disposal. In addition, one year before the start of conversion plant operation the selected contractor will also assume cylinder surveillance and maintenance (S&M) of the DOE inventory of $DUF_{6,}$ low-enrichment uranium (LEU) hexafluoride (UF_6), natural assay UF_6, and empty and heel cylinders. These S&M activities will include the transfer of cylinders located at the ETTP to the Portsmouth site for conversion. Finally, the selected contractor will also be responsible for transportation and disposition of conversion products, all waste forms, and empty and heel cylinders. This contract will cover the first five years of conversion operations; it is estimated that it would take up to 20 years of additional plant operations to convert all of the Department's depleted uranium inventory.

The procurement allows for a wide range of potential product forms -- such as to triuranium octoxide (U_3O_8), uranium dioxide (UO_2), uranium tetrafluoride (UF_4), uranium metal -- and process technologies to enable the best technologies to compete on an equal basis. Any of the proposed conversion forms must have an assured, environmentally acceptable path for final disposition. The proposals will also provide a schedule of project milestones for key activities, including completing the conceptual, preliminary and final designs; the start and completion of construction; the start of operations; and completing the transportation of ETTP cylinders to Portsmouth, and arrange for disposal of excess material at an appropriate site.

The contract establishes performance requirements and incentives for the accomplishment of the Statement of Work. The design work will be performed on a fixed fee basis. An incentive fee for construction will be proposed by the selected contractor and will be paid based on the successful completion of construction and the attainment of cost and schedule targets. An award fee will also be proposed by the selected contractor for operation of the plants based on the quantity and cost of DUF_6 processed and other associated performance requirements.

In addition to activities included within the scope of the DUF_6 procurement, the Department will be performing the requisite activities to comply with the Department's directives associated with program and project management. For example, DOE Order 413.3, *Program and Project Management for the Acquisition of Capital Assets*, which prescribes a formal process for securing critical acquisition decisions and implementing various project management reform initiatives will be applied using the tailoring approach described in the Order.

The Department will also be conducting additional site specific Environmental Impact Statement (EIS) analysis to evaluate conversion project alternatives. This EIS represents the second level of a tiered environmental assessment process being used to evaluate and implement the DUF_6 management program. Tiering refers to the process of first addressing general (programmatic) matters in the PEIS followed by more narrowly focused (project level) environmental review that incorporates by reference the more general discussions. In addition, the Department will consider environmental factors in its decision to select a contractor for the conversion services through the procurement process, including preparation of an environmental critique and synopsis. The environmental critique will evaluate the environmental data and information submitted by each offeror and will be subject to the confidentiality requirements of the procurement process. However, the Department will prepare a publicly available environmental synopsis, based on the environmental critique, to document the consideration given to environmental factors in the contractor selection process and then in determining

reasonable alternatives. The environmental synopsis will be filed with the U.S. Environmental Protection Agency and will be incorporated into the EIS.

The Department will develop and refine an integrated project schedule to plan and track these activities. A life cycle baseline will then be developed to establish and control the technical scope, cost and schedule parameters of this project and to integrate these activities with other environmental management activities.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Facility Cost						
Design Costs	12,000	12,000	0	0	0	24,000
Construction	0	12,827 [a]	43,000 [b]	135,000	150,173	341,000
Total Facility Costs	12,000	24,827	43,000	135,000	150,173	365,000
Other Project Costs						
Conceptual Design	800	0	0	0	0	800
RFP Development and Proposal Evaluations	8,800	0	0	0	0	8,800
NEPA	3,000	2,000	1,000	0	0	6,000
Other Project-Related Costs	12,200	14,000	15,000	15,000	25,000	81,200
Total Other Project Costs	24,800	16,000	16,000	15,000	25,000	96,800
Total Design and Other Project Costs	36,800 [c]	40,827[c]	59,000	150,000	175,173	461,800

7. Related Annual Funding Requirements

dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs (staff, utilities, etc.)	TBD	0
Total related annual funding	TBD	0

[a] Funding for long lead items, such as cylinder overpacks and conversion kilns/reactors.

[b] Approximately $25,000,000 for site preparation. The remainder to be held for construction start or any additional long lead items.

[c] $12 million each year for FY 2001 and FY 2002 of USEC/DOE ($66M) MOA funds available for completion of these conversion facilities. This is dependent upon current needs assessment being conducted for cylinder maintenance and other requirements at Paducah and Portsmouth.

Total operating costs (5 years)	TBD	0

1.The “Estimated Project Cost” is a preliminary cost for the design, construction, and then five years of operation for two conversion plants. This estimate is based on an FY 1999 pre-conceptual design and the DUF_6 Conversion RFP Independent Government Estimate (which was based on the pre-conceptual design), and should not be construed as a project baseline.