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Environmental Management 1994

United States Department of Energy

Progress and Plans of the
Environmental Restoration and
Waste Management Program.

February 1994

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Reader's Guide to Environmental Management 1994

Environmental Management 1994 was prepared in response to the requirements of the National Defense Authorization Act for 1994.

The first section of the report describes the Department of Energy's national Environmental Management program. This is followed by a closer look at what the program is doing across the country, organized by region to help the reader identify and locate the sites of greatest interest. Within each region, detailed discussions of the largest sites are followed by site summaries reported by State, and a summary of activities under the Formerly Utilized Sites Remedial Action Program (FUSRAP) and Uranium Mill Tailings Remedial Action Project (UMTRA).

All of the sites where the Department of Energy has environmental management responsibilities under the Environmental Restoration and Waste Management (Environmental Management) program are discussed in this first report, including those sites cleaned up prior to 1993. In future reports, these sites will not be included. The sites at which Environmental Management is active are sometimes referred to collectively as the "weapons complex." The complex includes all sites that performed nuclear energy or weapons research, development, testing, or production for the Department of Energy or its predecessor agencies.

For the purposes of this report, a "site" is a Department of Energy installation; a "facility" is a building located on a Department of Energy site; and an "area" is a geographical area, operable unit, or waste area group of unspecified dimension within a site boundary. Throughout this report, "year" refers to the Federal Government's Fiscal Year, which begins on October 1. For example, Fiscal Year 1994 began on October 1, 1993, and will end on September 30, 1994.

Budget information for Hanford includes the Hanford site and the Richland Operations Office. Idaho National Engineering Laboratory includes the Laboratory, the Idaho Chemical Processing Plant, and the Idaho Operations Office. The Oak Ridge Reservation budget includes the Oak Ridge National Laboratory, the Y-12 Plant, the K-25 Site, Oak Ridge Associated Universities, the Oak Ridge Operations Office, and funding for the FUSRAP program.

For more detailed information about the sites, programs, or activities described in this report, please contact the Center for Environmental Management Information at 1-800-7-EM-DATA (1-800-736-3282), or P.O. Box 23769, Washington D.C. 20026-3769.

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The Environmental Restoration and Waste Management Vision

By the year 2000, the Department of Energy's Environmental Management program will serve as the model for public management of environmental protection activities.

- The program will be driven by a combination of customer expectations and the technical and scientific capabilities of the Department of Energy.*
- Regulatory compliance, safety and health, and environmental protection will not be compromised.*
- The Environmental Management program will be seen as leading the way toward new standards of excellence in restoring, protecting, and enhancing the environment.*
- Program objectives will be met in the most cost-effective manner possible.*

Contents

Letter From the Secretary	i
Map: Environmental Management Across the Nation	ii
Environmental Management: A National Challenge	1
Site Summaries	13
Overview	13
Northwestern Site Summaries	15
Southwestern Site Summaries	28
Central Site Summaries	43
Eastern Site Summaries	53
Performance and Funding Data	65
List of Reports	65
Overview	66
Performance Data	67
Milestone Data	73
Funding Data	77

The Six Strategic Goals of the Environmental Management Program

“Closing the Circle of the Splitting of the Atom”

- *Eliminate and manage the urgent risks in our system.*
- *Emphasize health and safety for our workers and the public.*
- *Establish a system that is managerially and financially in control.*
- *Demonstrate tangible results.*
- *Focus technology development efforts on identifying and overcoming obstacles to progress.*
- *Establish a stronger partnership between the Department of Energy and its stakeholders.*

A handwritten signature in dark ink, reading "Thomas P. Grumbly". The signature is fluid and cursive, with a large, stylized 'G'.

Thomas P. Grumbly
Assistant Secretary for Environmental Restoration and Waste Management

Letter From The Secretary

With the end of the Cold War, the vision, mission and priorities of the Department of Energy have dramatically changed. Perhaps the clearest evidence of this change is the growing importance of the Environmental Management program, which surpassed nuclear weapons activities for the first time in 1994 to become the largest program in the Department.

We are redirecting the national commitment that built the most powerful weapons the world has ever known, toward addressing the resulting widespread environmental and safety problems at thousands of contaminated sites across the country. We have a moral obligation to do no less, and we are committed to producing meaningful results. This is the honorable and challenging task of the Department's Environmental Management program.

*I am pleased to present to you **Environmental Management 1994**—the first of a series of yearly reports on the program's progress and plans. Under the strong leadership of Tom Grumbly, this program is delivering on our promises. We are treating waste, stabilizing dangerous facilities, and developing new environmental technologies with great commercial prospects at home and abroad. All of this is aimed at the principal objective of reducing risks to human health and the environment.*

In less than a year, Tom Grumbly and his dedicated staff across the country have made substantial improvements in the Environmental Management program to produce more cleanup and less paper, protect workers, reduce costs, and build partnerships with stakeholders. I am very proud of the program's achievements, and look forward to reporting even greater progress in 1995.

A handwritten signature in black ink, reading "Hazel R. O'Leary". The signature is fluid and cursive, with a long, sweeping underline.

Hazel R. O'Leary
Secretary of Energy

Environmental Management Across the Nation

#	Location	Installation Site	Page Number
2	Albany, OR	Albany Metallurgical Research Center	28
4	Davis, CA	Laboratory for Energy-Related Health Research	25
6	Berkeley, CA	University of California	26
8	Livermore, CA	Lawrence Livermore National Laboratory	21
10	Vallecitos, CA	General Electric Vallecitos Nuclear Center	23
	Santa Susana, CA	Santa Susana Field Laboratory	24
12	Canoga Park (LA), CA	Rockwell International (Aerionics International)	24
14	Valencia County	Pagano Salvage Yard	25
16	Amchitka Island, AK	Amchitka Island Test Site	21
18	Fallon, NV	Project Shoal Site	38
	Nellis AFB, NV	Tonopah Test Range	38
20	Loveman, ID	Loveman	26
22	Idaho Falls, ID	Argonne National Laboratory-West	26
24	Green River, UT	Green River	42
	Monticello, UT	Monticello	41
27	Monument City, AZ	Monument Valley	42
29	Riverton, WY	Riverton	27
31	Maybell, CO	Maybell	42
	Rifle, CO	Old Rifle	42
	Rifle, CO	Project Rio Blanco	37
34	Naturita, CO	Naturita	42
	Slick Rock, CO	Old North Continent	42
37	Gunnison, CO	Gunnison	42
39	Farmington, NM	Project Gasbuggy Site	40
41	Ambrosia Lake, NM	Ambrosia Lake	42
43	Los Alamos, NM	Bayon Canyon	42
44	Albuquerque, NM	South Valley Plant	38
	Albuquerque, NM	Inhalation Toxicology Research Institute	40
46	White Sands, NM	Chupadera Mesa	42
	Carlsbad, NM	Waste Isolation Pilot Plant	35
48	Bellevue, ND	Bellevue	27
50	Lincoln, NE	Hallam Nuclear Power Facility	49
52	Falls City, TX	Falls City	42

#	Location	Installation/Site	Page Number
24	Ames, IA	Ames Laboratory	47
26	Hazelwood, MO	Latty Avenue Properties	51
	St. Louis, MO	St. Louis Airport Vicinity Property	51
	St. Louis, MO	St. Louis Downtown Site	51
	Chicago, IL	National Guard Armory	51
	Batavia, IL	Fermi Laboratory	46
28	Granite City, IL	Granite City Steel	52
31	Hattiesburg, MS	Salmon Test Site (Tatum Dome)	58
33	Hillboro, KY	Mexay Flats	56
	Oak Ridge, TN	Oak Ridge K-25	54
36	Oak Ridge, TN	Elsa Gate	52
37	Luckey, OH	Luckey	52
38	Piquette, OH	Piquette Nuclear Power Facility	50
70	Oxford, OH	Albacraft (Oxford)	52
72	Fernside, OH	Fernside Environmental Management Project	43
74	Ashland, OH	RMI Titanium/Fields Brook Site	58
	Columbus, OH	B&T Metals	52
77	Niagara Falls, NY	Niagara Falls Storage Site	62
	Tonawanda, NY	Ashland OH 1	63
	Tonawanda, NY	Linde Air Products	63
80	West Valley, NY	West Valley Demonstration Project	60
82	Colonie, NY	Colonie	63
83	Manhattan, NY	Baker and Williams Warehouse	63
86	Altoona, PA	Altoona Forge	63
87	Canonsburg, PA	Canonsburg	62
	West Mifflin, PA	Bethle Atomic Power Laboratory	62
89	Alcoa, SC	Savannah River Site	58
92	Long, FL	Peak Oil Petroleum Refining Plant	58
94	Holliston, MA	Chapman Valve	65
95	Ward, MA	Schpack Landfill	69
98	Jersey City, NJ	Kellogg/Pierpont	62
100	Woodmont, NJ	Middlesex Sampling Plant	69
101	Princeton, NJ	Princeton Plasma Physics Laboratory	69
102	Maywood, NJ	Maywood Chemical Works	63

Note: Some numbered locations represent more than one site.

Environmental Management: A National Challenge

Overview

The Department of Energy currently faces one of the largest environmental challenges in the world. The Department's Environmental Restoration and Waste Management program, commonly referred to as the Environmental Management program, is responsible for identifying and reducing risks and managing waste at 137 sites in 34 States and territories where nuclear energy or weapons research and production resulted in radioactive, hazardous, and mixed waste contamination. Portions of the more than 3,300 square miles of land managed by the Department contain contaminated surface or ground water, soil, and structures. The number of sites in the program continues to grow as facilities are transferred to be cleaned up and closed down. Figure 1 shows the 1995 Environmental Management funding requests for 17 States with Department of Energy sites.

FIGURE 1. Environmental Management funding by State for Fiscal Year 1995.

Funding is concentrated among the States having the largest or most complex sites. The Formerly Utilized Sites Remedial Action Program (FUSRAP) sites are funded out of the Oak Ridge office in Tennessee, and Uranium Mill Tailings Remedial Action Project (UMTRA) sites are funded out of the Albuquerque office in New Mexico. The FUSRAP and UMTRA programs are discussed on page 8. Washington State has more than twice the funding of any other State because of the size and nature of the problems at the Hanford Site.

Operations Office	Contractor	Federal
Albuquerque	3,025	134
Idaho	364	36
Richland	11,784	425
Savannah River	7,007	104
Rocky Flats	7,510	33

FIGURE 2. Environmental Management Federal and contractor employees at Headquarters and nine operations offices at the end of 1993.

FIGURE 3. The Environmental Management Congressional request for 1995 by program and percent.

The program's main challenge is to balance technical and financial realities with the public's expectations and develop a strategy that enables the Department to meet its commitments to the American people. Environmental Management must meet legal requirements of applicable laws and regulations, as well as the requirements of its compliance agreements, and these requirements continue to grow. While the budget has grown from \$1.3 billion in 1989 to \$6.2 billion for 1994, future funding cannot be expected to increase as it has in the past. Regulators may be asked to approve modifications to enforceable agreements if warranted by technical changes at the sites. However, the Environmental Management program will continue to make progress by maximizing the use of its available financial resources. Substantial savings can be achieved by improving project management techniques. By making fundamental changes to the program, productivity can be improved by as much as 20 percent over the next 2 years.

The President's 1995 budget request has been developed to meet the Environmental Management program's six goals. To improve worker safety and health, the program plans to upgrade safety and health plans and safety analysis reports at many sites by 1995. Draft requirements will be issued for the program's management control system and contract procedures to improve efficiency and effectiveness. The program will demonstrate tangible progress in protecting public safety and health, developing innovative technologies for environmental management activities, and becoming a better steward of financial and environmental resources. Sites will implement procedures to meet the standards of the Occupational Safety and Health Act. All of these measures, in conjunction with effective public participation, will allow the Department of Energy to focus on performance and result in a more efficient use of its funding. Figure 2 illustrates the number of Environmental Management employees across the Nation.

The Department is requesting \$6.3 billion in 1995 to meet these responsibilities, as illustrated in Figure 3. About 46 percent of the 1995 requested budget is needed for waste management and approximately 28 percent to perform cleanup work under the environmental restoration program. Almost seven percent of the budget will be used to develop technologies and 13 percent to manage facilities the Department no longer needs for weapons production or research. Approximately five percent of the Environmental Management budget comes from the Uranium Enrichment Decontamination and Decommissioning fund that is supported through taxes paid by utilities using enrichment facilities in Portsmouth, Ohio; Paducah, Kentucky; and Oak Ridge, Tennessee, to refine uranium used for nuclear powerplants.

The major responsibilities of the Environmental Management program are waste management, environmental restoration, technology development, facility transition and management, and public participation.

Seven categories of waste at Department of Energy facilities

High-Level: Material that remains following the reprocessing of spent nuclear fuel and irradiated targets from reactors. This waste is highly radioactive and generates heat on its own. Some of its elements will remain radioactive for thousands of years. High-level waste must be managed very carefully and handled from behind heavy protective shielding.

Transuranic: Material produced during reactor fuel assembly, nuclear weapons production, and fuel reprocessing. It contains manmade elements containing atomic numbers greater than that of uranium, which is 92. Thus, the name trans (or beyond) uranic. These elements generally decay slowly, requiring long-term isolation. This waste is not as intensely radioactive as high-level waste.

Low-Level: Waste that typically has small amounts of radioactivity in large amounts of material. Low-level waste is generated in every process involving radioactive materials in the Department, including cleanup projects. Most of the radioactivity in low-level waste will decay to harmless levels in a few years.

Hazardous: Waste that might pose a potential hazard to human health or the environment if it is improperly treated, stored, transported, or disposed. Hazardous waste is regulated by two Federal laws, or by the State.

Mixed: Waste that contains both radioactive and hazardous materials.

Uranium Mill Tailings: Naturally radioactive rock and soil that are products of uranium mining and milling operations. The rock and soil have low levels of radiation from the small amount of radium that decays and emits radon, a radioactive gas.

Sanitary: This waste is solid waste that does not contain radioactive, hazardous, or any specific contamination that is regulated.

Improved Program Management

The Department of Energy and the Environmental Management program are committed to meeting the objectives of the Vice President's National Performance Review to make the Federal Government more effective. We continue to identify areas where changes will cut our costs and improve efficiency.

Improved contract management is critical to achieving better cost control. In May 1993, the Secretary announced a sweeping set of contract reform initiatives to increase accountability in order to achieve cost savings and increase competition. One of these initiatives, the Contract Reform Team, is reviewing practices to improve the existing contracting system.

One example of improved cost-saving efforts, the Project Performance Study requested by Assistant Secretary Thomas P. Grumbly, was published in November 1993. The study compared 65 Department of Energy Environmental Management projects with others in the private and Federal sectors and found that the Department of Energy's costs were higher. Assistant Secretary Grumbly has charged employees to improve cost and schedule performance by 20 percent over the next 2 years.

The 1993 Department of Energy reorganization gave Federal personnel at operations offices increased accountability for activities in the field. Senior operations office managers have more responsibility for demonstrating progress at their sites and have specific measures integrated into their annual performance reviews. The budget formulation process for the Environmental Management program was revised in 1993 to integrate the program's planning and budget activities based on input from field managers, headquarters managers, and the public.

Waste Management

Waste management means treating, storing, and disposing of the waste and spent nuclear fuel generated during weapons processing and manufacturing, research activities, and site cleanup activities. Since 1989, waste management activities have accounted for 54 percent of the total program budget. A total of \$3 billion is requested for 1995. The primary emphasis of the 1995 waste management program will be to eliminate risks and threats at Environmental Management sites and demonstrate tangible results. One of the largest challenges facing the Department is significantly reducing risks at the

underground storage tanks in Hanford, Washington. More than \$600 million of the 1995 budget request is marked for this project. Additional information on Hanford and its storage tanks can be found on page 15.

The waste management mission includes developing capabilities to treat, store, and dispose of the different types of waste at Department sites and minimizing the amount of waste sites generate. There are currently more than 1 million cubic meters of radioactive waste in inventory at Department of Energy facilities. As illustrated in Figure 4, these different types of waste are located at many sites nationwide.

FIGURE 4. Locations of different types of waste.

In 1994, the Department is working to safely store 396,000 cubic meters of previously generated high-level waste and 65,000 cubic meters of transuranic waste. Over 68,000 cubic meters of low-level waste will be disposed of as well. The Department is constructing treatment facilities for high-level waste in Washington, South Carolina, and New York.

The amount of waste generated will increase as weapons are dismantled, facilities are disassembled and remediated, and contaminated sites are restored. The Department is spending \$17 million in 1994 to reduce the total amount of waste generated, reducing the amount that must be treated and disposed of or stored. Waste minimization programs and activities were initiated at many sites in 1991. In 1993, a more comprehensive plan was initiated in the Waste Minimization Crosscut Plan. The Environmental Management program is responsible for coordinating information and providing guidance to the other Department of Energy offices who are responsible for ensuring that waste minimization goals are implemented at their sites. If the sites meet Secretary O'Leary's goal to reduce by 50 percent the amount of toxic waste they routinely produce by 1999, millions of dollars can be saved.

The Department must overcome technical challenges to build facilities needed for safely managing and disposing of waste generated at its facilities. The Department's plans must balance the relative costs with the risks of transporting waste from one site to another, storing waste onsite, building facilities, and ensuring worker safety while handling the waste.

The Department is working closely with States, Indian Nations, local governments, the Environmental Protection Agency, and concerned citizens to develop effective site treatment plans for mixed waste. These plans will outline how the Department intends to provide centralized, regional, or onsite treatment of mixed waste. They must meet the requirements of the Federal Facility Compliance Act of 1992. The plans must be reviewed by the public and approved by the States whose sites generate or store mixed waste, or the Environmental Protection Agency, by October 1995.

The Department is also working with concerned citizens and regulators to develop, by June 1995, a policy for the storage of spent nuclear fuel currently accumulating in storage facilities. This spent fuel comes from the Department's test and materials production reactors, the U.S. Navy's propulsion reactors, university research reactors, and several research reactors abroad. Over the next year, the Department will solicit public comments on proposed plans to renew expired policies to accept spent nuclear fuel from foreign countries if that fuel contains enriched uranium exported by the United States, for nonproliferation reasons. The Department will also ask the public to discuss options for receiving, transporting, and temporarily storing this fuel.

Comparison of the volumes of different types of radioactive waste generated in 1992. High-level and transuranic waste are more toxic and require specialized handling.

Programmatic Environmental Impact Statement

The Environmental Management program is examining how the environment would be affected by different alternatives for restoring Department of Energy sites and transporting waste from these sites to treatment, storage, or disposal facilities in the Environmental Management Programmatic Environmental Impact Statement. In 1991, the program held meetings in 23 cities to receive public comments on what issues should be studied in the document. From these comments, the Environmental Management program prepared a draft Implementation Plan to administer the Impact Statement and held six regional workshops with the public to revise and improve the Plan. Public comments and recommendations from the Environmental Management Advisory Committee significantly changed the draft Implementation Plan. The Final Implementation Plan was published in January 1994. Now, the Environmental Management program will assess and compare the risks associated with the alternatives identified by the public in the Implementation Plan. Because of the scope of the Programmatic Environmental Impact Statement and the Department's interest in continuing public involvement, the Department plans to conduct public workshops in May 1994 to discuss preliminary results of the analysis before completing the Draft Programmatic Environmental Impact Statement, which is planned for release in August 1994. After release of the Draft Programmatic Environmental Impact Statement, the Department will hold public hearings around the country in September 1994 as part of the public review and comment process. The final Environmental Impact Statement is planned for release in February 1995.

The Waste Isolation Pilot Plant, located near Carlsbad, New Mexico, was specifically designed and constructed for long-term disposal of transuranic waste from weapons production. Tests are now underway or planned to determine whether it meets all requirements, including guidelines established by the Environmental Protection Agency. The decision to choose the Waste Isolation Pilot Plant as a permanent disposal facility or abandon the project and seek other alternatives for disposing of transuranic waste will be based on a thorough evaluation of test results, informed public participation, and regulatory compliance. The Department will have spent \$746 million between 1990 and the end of 1994 to complete construction and conduct nonradioactive tests. The Waste Isolation Pilot Plant is described in more detail on page 35.

Identifying Risks

One of the most crucial elements to the success of the Environmental Management program is the development of a method to assess, calculate, and communicate risk. The Federal Government and State and Federal regulators do not have an established framework to answer basic questions such as: How clean is clean? What is public risk? Should risk be defined only as a set of numbers, or are there qualitative values that need to be factored in? An accurate set of standards concerning risk will help the Department and its regulators determine the most urgent cleanup actions. In addition to protecting public health and safety and the environment, these standards will enable the Department to spend cleanup dollars more effectively.

In November 1993, Assistant Secretary Thomas P. Grumbly began efforts to identify an institution or contractor to conduct a credible, scientifically based risk assessment process over a two-year period. This project will identify major risks at Department of Energy sites and determine whether existing compliance agreements appropriately address existing problems. The preliminary results of these assessments will be included in a report to Congress in June 1995, and the final report will be sent with the Department of Energy's Fiscal Year 1997 budget package to Congress in January 1996.

Environmental Restoration

The environmental restoration part of the Environmental Management program reduces or eliminates risks to human health and the environment. Before actual cleanup work occurs, engineers and scientists must conduct extensive site evaluations to determine the extent of contamination and risk.

FIGURE 5. Environmental Management met or was on schedule to meet 74.4 percent of its enforceable agreement milestones at the end of 1993.

To properly evaluate cleanup alternatives, these site characterization activities involve analyzing samples, assessing potential risks, and reviewing historical records of plant operations. From 1989 to 1993, the Environmental Management program spent \$2.7 billion to complete site characterization at 44 percent of the Department's sites. In 1994 and 1995, \$1.3 million will be spent each year on site characterization nationwide. As new sites are transferred to the Environmental Management program, they will undergo characterization as well. Generally, when characterization of the site is completed, remediation begins. The Department intends to identify and complete 10 cleanup projects ahead of schedule each year between 1995 and 1997 in addition to planned remediation projects.

Almost 80 percent of the environmental restoration budget request for 1995 is needed to meet requirements of compliance agreement milestones or environmental regulations. Since 1979, the Department of Energy has entered into 93 site-specific enforceable agreements with the Environmental Protection Agency and States in which Department facilities are located. Environmental Management shares responsibility with other Department of Energy programs in meeting the requirements of these agreements. Twenty-two are inactive, either because the compliance issues have been corrected or the agreements have been superseded by more recent agreements. Enforceable milestones dictate schedules of activities that are required in an agreement. In 1993, the Environmental Management program was responsible for meeting 451 compliance agreement milestones. As illustrated in Figure 5, it met 331, or 73.4 percent. Milestones were missed because of additional regulatory issues, the discovery of new problems, lack of technology, or inadequate knowledge of the problem when establishing milestones. When a milestone is missed, regulators can take a variety of actions, including assessing fines and penalties or seeking injunctions. More specific information on milestones can be found in the site descriptions and performance reports. In 1994, an estimated 328 milestones are to be met under these agreements and, in 1995, there are 268. Between 1994 and 2019, the total number of milestones is expected to reach 1,344.

The Environmental Management program is reviewing its compliance agreements internally to determine whether milestones can be accelerated, delayed, or modified based on the categories established by the program. These categories include milestones that might be unnecessarily protracted, unrealistic milestones, milestones that do not address a significant health risk, milestones that are not technically feasible, milestones that do not have a strong technical justification, milestones that could be better coordinated with other projects, and milestones that are no longer required or should be modified because of the changed mission or operation of a facility.

About 9 percent of the \$1.9 billion for the 1995 environmental restoration budget request is marked to restore sites where work was carried out by the Department of Energy's predecessor agencies in the early days of the Nation's atomic energy program. These sites are owned by private firms, universities, or the Federal Government. Twenty-four former uranium ore processing sites are contaminated with naturally radioactive rock, soil, and byproducts of uranium mining and milling operations. Thousands of vicinity properties were contaminated by windblown debris or contain contaminated debris that was used in construction or landscaping. The Uranium Mill Tailings Remedial Action Project (UMTRA) manages cleanup actions at these sites. By September 1993, cleanup at 10 of the 24 sites and 95 percent of the vicinity properties was completed at a cost of \$1.1 billion. All surface contamination within the 10 States and 2 Indian Tribal lands should be cleaned up by September 1998. Descriptions of activities at these sites can be found in the site summary section of this report.

The Formerly Utilized Sites Remedial Action Project (FUSRAP) currently manages cleanup actions at 44 sites in 14 States across the country where the Federal Government contracted with private firms to process or perform research on radioactive materials. Descriptions of activities at these sites can be found in the site summary section of this report. In the past year, several new sites were identified and added to the program. Remediation was completed at 14 of the 44 sites by the end of 1993, and the balance is scheduled to be completed by 2016. In 1995, \$74 million is requested to conduct assessment and cleanup activities at 16 sites.

Technology Development

In many cases, the Federal Government does not yet possess the solutions to environmental risks facing the Nation. Innovative solutions must be developed that are safer and more time- and cost-effective than those currently available to expedite compliance with applicable environmental laws and regulations. For example, information about uncontained hazardous and radioactive contaminants in soil is not sufficient at most sites, and most of the current containment and characterization technologies are ineffective or too costly. The Environmental Management technology development program is working with other programs within the Department, national laboratories, universities, other Federal agencies, and the commercial sector to coordinate research efforts and maximize results from limited research budgets and demanding schedules.

In 1993, technology development activities involved more than 200 private companies and 120 colleges and universities. In the last year, the Environmental Management program entered into 18 Cooperative Research

An engineer at Sandia National Laboratory demonstrates a new technology to produce circuit boards without using solvents or other hazardous materials.

and Development Agreements, bringing the total to 31. Through these agreements, national laboratories are working closely with industrial partners to transform discoveries into products. Internationally, the Environmental Management program joined forces with Ogden Environmental Energy Services to develop technology to remove uranium, arsenic, and other heavy metals from waste streams. The technology is being developed by Ogden on contaminated water in a uranium mill tailings pond in eastern Germany. Ogden's German subsidiary will help manage the project.

DOIT

A joint Federal and State partnership among the Departments of Energy, Defense, and Interior; the Environmental Protection Agency; and 20 western States was created in 1992 through a Memorandum of Understanding signed with the Western Governors' Association. The Federal Advisory Committee to Develop On-Site Innovative Technologies, or DOIT Committee, has been established to help implement a five-year cooperative agreement to address technical, training, financial, regulatory, and institutional barriers to innovative technology development in Environmental Management.

The Department of Energy has interagency research agreements with other Federal agencies to develop and test several new technologies. For example, in 1993, under an agreement with the Department of Defense, a prototype ground-penetrating radar was developed that can generate recognizable three-dimensional images of buried objects. The source of contamination can be identified and the correct cleanup method can be selected before excavation begins. At the Idaho National Engineering Laboratory, researchers successfully demonstrated a new process of waste freezing and remote retrieval. Freezing both the soil and waste and then retrieving them using remote-retrieval technology can reduce risks to workers and protect the environment from airborne and liquid contaminants during waste cleanup. The Department continued demonstrating the Direct Sampling Ion Trap Mass Spectrometer, a portable system for rapidly identifying specific contaminants in the field, avoiding the need to send samples to a remote laboratory. This technology could result in a 50 percent cost savings per sample. In 1994, the technology development program will complete many of these demonstration projects and continue to fully develop the 880 technology projects underway. In addition, demonstrations of processes to contain every potential source of waste from migrating, and to treat contaminated soil and ground water at the sites, are planned for 1995.

The technology development budget request for 1995 is \$426 million, or about 7 percent of the total Environmental Management budget request. The Department expects to make significant advances in dealing with mixed waste, soils and ground water, high-level waste tanks, buried waste, and decontamination and decommissioning. Technology development will continue to support the construction of up to three mixed waste pilot plants that will reduce the cost and time necessary to characterize waste.

Facility Transition and Management

The Department of Energy is shifting its focus from production to environmental management and, therefore, is consolidating production programs and closing facilities that are no longer needed. These facilities will be transferred to the Environmental Management program from elsewhere in

the Department to be prepared for future use. Approximately 13 percent of the total Environmental Management budget request for 1995 is marked to address the technical, socioeconomic, institutional, and administrative issues involved in transferring, cleaning up, closing, and deciding the final role of a facility.

Once a facility is transferred to Environmental Management from another program in the Department, initial actions are planned with regulators, the State in which the facility is located, and stakeholder groups based on site characterization, risk assessment, the probable future use of the facility, and the available financial and technical resources. Hazards that need to be eliminated so the facility can be maintained in a safe, cost-effective manner are identified and evaluated. Plans to retrain workers from production to cleanup jobs are also developed to manage the impacts of workforce reduction on both workers and local communities.

The Idaho Chemical Processing Plant, which was transferred to Environmental Management in 1993.

Forty-one percent of the \$871 million facility transition budget request for 1995 is needed to manage the Rocky Flats Plant, which was transferred to the Environmental Management program in September 1993. Headquarters and site officials worked with regulators and the State of Colorado to develop plans for cleanup, worker retraining and human resources, and plans to communicate information to the public. The Environmental Management program also supports a Department of Energy Task Force on Worker and Community Transition. In 1994, the Task Force is focusing on the economic development mission of the Department as it applies to converting surplus resources at former defense nuclear facilities to commercial or other alternative uses. The goal of the economic development program is to make the Department's resources available to community partnerships for local business development and support the President's broader objective to stimulate economic growth nationwide. In this manner, the public will play an integral role in transition planning, including setting priorities for deactivation and promoting economic development and facility reuse.

In addition to Rocky Flats, the chemical processing plant at the Idaho National Engineering Laboratory was transferred to Environmental Management to be shut down. In the coming year, defense programs studies regarding the consolidation and closing of other Department of Energy facilities should be complete, revealing a more accurate assessment of the total number that will be transferred to the Environmental Management program. A three-phase process to better define the magnitude of the Department's contaminated surplus facility inventory and associated environmental, safety, and health issues, and provide a process for managing these facilities began in 1993. By 1995, this process will develop a more accurate inventory of all facilities; assess the physical and systems conditions and contamination status; and identify any immediate and serious worker, public, and environmental

Members of National Advisory Groups

The Environmental Management Advisory Committee

Al Alm, Science Applications International Corporation
 Dr. Lynn Anspaugh, Lawrence Livermore National Laboratory
 Kenneth Ayers, Willis Carroon Health Care
 Richard Bangart, U.S. Nuclear Regulatory Commission
 Dennis Bechtel, Clark County (NV) Department of Ecology
 Jeff Breckel, Washington Department of Ecology
 Gerald Christean, Laborers International Union of North America
 Tim Connor, Energy Research Foundation
 Douglas Costle
 Vickie Dastillung, Fernald Residents for Environment, Safety, and Health
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 Bill Burke, Umatilla Indian Nation
 Marsden Chen, State of New York
 Judith Espinosa, State of New Mexico
 Michael Grainey, State of Oregon
 Richard Hunter, State of Florida
 Valerie Hudson, State of Kentucky
 David Humphrey, State of Idaho
 Russell Jim, Yakima Indian Nation
 Robert W. King, Jr., State of South Carolina
 Jack McGurk, State of California
 Dan Miller, National Association of Attorneys General
 Marshall Plummer, Navajo Nation
 Donna Powauke, Nez Perce Tribe
 Susan Rieff, State of Texas
 Cheryl Runyon, National Conference of State Legislators
 Gilbert Sanchez, Pueblo de San Ildefonso
 Jim Setser, State of Georgia
 Ben Smith, State of Tennessee
 David Thomas, State of Illinois
 Jack Van Kley, National Association of Attorneys General
 John Walker, State of Nevada
 Tom Winston, State of Ohio
 Jeanette Wolfley, Shoshone-Bannock Indian Nation
 Doug Young, State of Colorado

risks. Then, the process will rank these facilities based on risk to provide a prioritized rationale for their acceptance into the Environmental Management cleanup and conversion program.

Land Use

Much of the land that the Department of Energy acquired over the last 50 years may now be considered for new or future Departmental missions or released for private sector development. Defining probable future uses, in conjunction with risks, will provide the basis for decisions about the Department's restoration of environmentally degraded lands and establish priorities for allocating funds. These decisions will determine what level of cleanup is suitable for the future use, siting necessary waste treatment and disposal facilities, and accelerating the reuse of inactive and surplus property and buildings.

The Environmental Management program recently established a Future Use Working Group to guide Department sites in developing future use plans for each facility. All sites must prepare these plans by 1995. This future use policy will help the program achieve its mission while promoting opportunities for economic development and employing workers displaced by the restructuring of the weapons complex. Future use planning can only be successful with the active participation of the public and regulators.

Strengthening the Department's Relationships with Its Partners

To make the elements of the Environmental Management program work better, the program has made substantial efforts to increase the public's participation in and understanding of the program. This means more communication and consultation with the public in developing Environmental Management plans, priorities, and spending levels.

In 1993, the program prepared a draft Report to Congress evaluating citizen advisory groups' effectiveness and the Environmental Management program's public participation efforts. Due to the success of these groups, the Department expanded the number and responsibilities of advisory groups at the local and national level. At sites across the country, the Department is working with local communities and citizen review groups to study and provide recommendations on important issues for sites in their areas, including allocating funding and setting priorities within the site budget.

This student is sampling water in Oak Ridge, Tennessee, for one of the several education programs established by the Environmental Management program.

National advisory groups such as the State and Tribal Government Working Group and the Environmental Management Advisory Committee are working with the Environmental Management program in planning and are providing recommendations on a wide range of issues affecting the program.

The Center for Environmental Management Information opened in Washington, D.C., in January 1994. The Center has a toll-free information number, a library of both general and technical documents, informative videos, and an interactive database network to make it easier to obtain information about all aspects of the program. The Center also houses an Educational Outreach Center that will provide programs and displays targeted for students in grades K-12. To obtain information about the program or to order the products mentioned above, please call **1-800-7-EM-DATA**.

Environmental Management Activities Across the Nation

The Environmental Management program works at all of its sites across the United States toward the Department of Energy's goals to clean up the weapons complex, safely manage waste, and protect human health and safety and the environment. In the following pages of this report, you will find summaries of work done at the sites to date, what is currently being done, and what is planned for 1995.

These activities are organized by region: northwestern, southwestern, central, and eastern. The regional groupings used for this report do not reflect any official Federal Government structure and are only intended to help the reader easily locate sites of interest. Within each regional report, activities at the largest sites are discussed first, followed by site activities reported by State and a summary of activities under the FUSRAP and UMTRA programs. The third part of the report provides detailed performance and funding data, beginning on page 65.

Site Summaries

Overview

This section of the report presents a closer look at what the Department of Energy's Environmental Management program is doing around the country. Included are detailed discussions of the largest sites in the region, followed by site activities organized by State, and a summary of activities at FUSRAP and UMTRA sites in the region.

FIGURE 6. Map of Environmental Management sites broken down by region.

*The Department of Energy must comply with many regulations and Federal laws which are referenced in the following section. The **Comprehensive Environmental Response, Compensation, and Liabilities Act (CERCLA)** imposes cleanup and reporting requirements for remediating hazardous waste sites. Under this act, the Department conducts Remedial Investigations and Feasibility Studies, which are usually performed together. The Remedial Investigation characterizes conditions at the site to identify the sources and extent of contamination. The Feasibility Study evaluates specific alternatives for cleaning up the site. The selected remedial alternative is documented in a Record of Decision.*

The Resource Conservation and Recovery Act (RCRA) provides requirements for the management of hazardous waste. These guidelines regulate waste at all stages, from before its generation until after its disposal. The act also establishes a permit program for hazardous waste storage, treatment, and disposal facilities. Permits identify the administrative and technical standards to which facilities must adhere.

The National Environmental Policy Act (NEPA) provides a process for Federal agencies to identify and assess the alternatives to proposed actions to avoid or minimize the effect of these actions on the environment. Under this act, the Department of Energy must prepare an Environmental Impact Statement for all major actions which may significantly affect the environment. The act mandates that the Department make information available to Federal officials and citizens before decisions are made. The selected cleanup alternative is

Approximately 92 percent of the 1995 budget request will go directly to the field to perform environmental management activities. Detailed funding information on all site activities can be found in the Performance and Funding Data, beginning on page 65. For the purpose of this report, all references to years indicate a Federal Government fiscal year, which runs from October 1 to September 30. For example, Fiscal Year 1994 began on October 1, 1993, and ends on September 30, 1994.

Most of the smaller sites were previously used by the Department of Energy's predecessor agencies for research and production, or to mine and mill uranium. They are managed by the Formerly Utilized Sites Remedial Action Program (FUSRAP) and the Uranium Mill Tailings Remedial Action Project (UMTRA), respectively. The FUSRAP program is based at the Department's Oak Ridge office in Tennessee, and program activities across the country are funded through that office. The UMTRA program is funded through the Albuquerque office in New Mexico.

As stated previously, regional groupings used for this report do not reflect any official Federal Government regional structure. These regional characterizations are only intended to help the reader identify and locate the sites of greatest interest.

State	Site Name
	Lawrence Livermore National Laboratory (Main Site) Lawrence Livermore National Laboratory (Site 300)
	Rocky Flats Plant
	Idaho National Engineering Laboratory
	Weldon Spring Quarry, Feed Materials Plant, and Raffinate Pits St. Louis Site
	Maywood Site Wayne Site
	Brookhaven National Laboratory
	Fernald Environmental Management Project Mound Plant
	Monticello Vicinity Properties Monticello Millsite
	Oak Ridge Reservation
	Savannah River Site
	Hanford Site

FIGURE 7. Department of Energy sites on the Environmental Protection Agency's National Priorities List, organized by State.

Northwestern Site Summaries

For this report, the Northwestern region includes Alaska, California, Hawaii, Idaho, Montana, North Dakota, Oregon, South Dakota, Washington, and Wyoming. The major sites are Hanford in Washington and the Idaho National Engineering Laboratory in Idaho. The FUSRAP and UMTRA programs have several sites in the region that are discussed on page 26. This section includes general budget information for each of the sites. More detailed funding data is provided in the Performance and Funding Data beginning on page 65.

Hanford, Washington

The Hanford Site is a 560-square-mile tract of semi-arid land located within the Columbia River Basin in southeastern Washington, about 50 miles north of the Oregon border. The Columbia River flows through the Hanford Site boundary. In early 1943, the U.S. Army Corps of Engineers selected the Hanford Site as the location for nuclear reactor and chemical processing facilities for the production, separation, and purification of plutonium. Most of the waste generated by the site is from nuclear reactors and chemical processing plants.

Today, the primary mission at Hanford is the cleanup of the site. On May 15, 1989 (amended May 1991 and January 1994), the U.S. Department of Energy, the Washington State Department of Ecology, and the U.S. Environmental Protection Agency signed an agreement that contains a plan for cleanup. This Tri-Party Agreement established enforceable milestones to keep the program on schedule to the year 2019.

FIGURE 8. The Hanford Site.

The safety issues surrounding the nuclear waste storage tanks at Hanford are among the Department's highest priorities. In 1993, utilizing a portion of the Environmental Management budget of \$1.5 billion, a mixing pump was installed in Tank 101-SY. The mixing action of the pump allows a gradual release of the hydrogen gas that is generated by the tank contents, preventing the buildup of this potentially explosive and flammable gas. Work also began on a wastewater control system that will greatly reduce discharges into the soil. Other achievements at Hanford include removing and distilling 35,000 gallons of radioactively contaminated solvents from two underground storage tanks and excavating and removing 120 waste drums containing hexone and kerosene to help prevent further contamination of ground water. The site removed 9,504 pounds of carbon tetrachloride from underlying soil using a

vapor extraction system that reduced threats to human health and the environment, and worked to prevent the further spread of ground-water contamination.

As part of Hanford's transition plan for the site's facilities for future use or cleanup, several activities were conducted in 1993. At the plutonium and uranium extraction facility, deactivation began after the final run was completed. As of September 1993, 528 instrument panels were deactivated, and approximately 4,300 gallons of aluminum nitrate were shipped offsite. A 4,000-ton extrusion press was sold to the City of Richland as a part of the Department's asset conversion program. It is hoped that this sale will attract private industry to Richland and minimize the impact of defense downsizing on the local economy.

The underground storage tanks are one of the top priorities at Hanford.

With its 1993 technology development budget of \$16 million, Hanford demonstrated a new drilling technology that uses a sonic drill head for drilling ground-water wells for characterization, monitoring, and treatment. Sonic drilling does not use drilling fluids and potentially contaminated drilling materials are not brought to the surface, which eliminates worker exposure to radioactive or chemically hazardous waste. Characterization technologies were also demonstrated on Hanford underground storage tanks to demonstrate the feasibility of in situ chemical characterization. This method shows promise in eliminating worker handling of the waste during characterization and in decreasing the cost and time required for characterization. Improved systems for dislodging and conveying tank waste have also been demonstrated to facilitate the safe and efficient removal of tank waste for treatment. Development of a compact portable processing unit for separation of cesium and strontium during treatment operations is continuing.

Hanford held a two-day conference on the environment, technology, and the economy on September 14-15, 1993, in Kennewick, Washington. At that conference, Secretary Hazel O'Leary announced a new set of initiatives to streamline tank waste cleanup and designated the project as a model for the Department's cleanup activities.

Activities for 1994, with an Environmental Management budget of \$1.5 billion, are focused on continued tank safety, including the completion of testing of the mixing pump installed in Tank 101-SY last year. Significant modifications were made in 1993 to the Tri-Party Agreement with respect to treatment of high-level and low-level waste. Low-level waste will be vitrified, or made into a solid glass, instead of being mixed with grout. Testing of technology to refine the vitrification process will be carried out this year. Remediation of nearly half (46 percent) of the entire Hanford Site is scheduled for completion by October 1994. Following regulatory approval of the final condition of the remediated areas, the land in the Arid Land Ecology Reserve and North Slope areas will be ready for potential transfer for other uses. Accelerated ground-water treatment and control projects will be initiated in 1994. Remediation of contaminated sites near the Columbia River will also be accelerated, including sites slated for decontamination and decommissioning. Encapsulation of spent fuel at the 105-K east reactor basin

▼ **1995 Highlights:**

- Begin remedial design activities at nine high-priority areas within the 100 Area.
- Complete remediation at the North Slope and Arid Lands Ecology Reserve Areas.
- Reduce safety risks throughout the site.

Idaho National Engineering Laboratory, Idaho

The Federal Facility Agreement and Consent Order, signed by the Department, the State of Idaho, and the Environmental Protection Agency on December 9, 1991, integrates the Laboratory's cleanup responsibilities under all applicable State and Federal regulations. The Agreement and Order defines a 10-year program for obtaining final decisions on cleanup plans and schedules for the Lab. Idaho is on schedule to complete or meet 65 percent of its compliance agreement milestones.

will be initiated. This will greatly enhance worker safety and health. Also, in 1994 and 1995, planning and implementation of the stabilization and deactivation of former defense and non-defense facilities will continue. Once deactivated, these facilities will be maintained in a low-cost surveillance and maintenance mode to await final decontamination and dismantlement.

In 1995, \$1.6 billion has been requested for Hanford to, among other things, implement the new strategy for remediation of the high-level waste tanks as defined in the January 1994 revision to the Tri-Party Agreement. Tank safety issues will continue to be a priority. Construction of additional double-shell tanks will begin to resolve safety issues and provide essential new storage capacity. Hanford will also develop and publish its future land use plan to assist in establishing parameters for site cleanup efforts.

The Idaho National Engineering Laboratory is situated in southern Idaho along the western edge of the Eastern Snake River Plain and encompasses a desert area of approximately 890 square miles. The Laboratory is a multi-purpose Department of Energy national laboratory supporting the engineering and operations efforts of the Department and other Federal agencies in areas of nuclear safety, reactor development, reactor operations and training, waste management, technology development, and technology transfer programs. Many of these activities have resulted in the generation of radioactive, hazardous, and mixed waste. Past treatment, storage, and disposal of this waste has resulted in contamination of structures, ground and surface water, and surrounding properties.

Spent Naval reactor fuel is being received, handled, and stored at the Idaho Chemical Processing Plant. This fuel is prepared for interim storage until it can be disposed of in a high-level waste repository. Spent fuel is being transferred from an older fuel storage facility to a modern storage facility so the older one can be retired.

During 1993, with an Environmental Management budget of \$373 million, the site completed significant decontamination and decommissioning, remedial action, and waste management activities. Included were the decommissioning and decontamination of heavy equipment, reactors, and an obsolete laundry facility. Soil contaminated with low levels of radioactivity was removed from over 300 locations, thereby reducing the risk of inhalation and contact by workers at the chemical processing plant. Over 295,000 gallons of liquid high-level waste were treated to become a more stable, dry, granular solid called calcine. The calcination process reduces waste volume by about one-sixth. Three interim Records of Decision were signed in early 1993 for the Central Facility Area Motor Pool Pond, the Auxiliary Reactor

FIGURE 9. Map of the Idaho National Engineering Laboratory Site.

Area Chemical Evaporation Pond, and Test Reactor Area Perched Water. During 1993, the site initiated a comprehensive complex-wide Environmental Impact Statement review of spent nuclear fuel storage. This action will result in recommendations for storage of the Department's spent fuel well into the next century.

About 6 percent of the site's Environmental Management budget for 1993 went to developing new technology. The site demonstrated seven sophisticated technologies that can be used to clean up contaminated buried waste that cannot be handled directly by workers. In addition to the seven onsite demonstrations, nine demonstrations, including five demonstrations for other sites, were performed at the Laboratory. Proof of concept tests for a fixed hearth plasma thermal treatment unit were also completed on surrogate compacted waste drums and buried waste. The results successfully demonstrated the ability of this process to turn this waste into a glass form that will meet requirements of Federal and State laws for disposal.

In 1993, the Idaho National Engineering Laboratory demonstrated seven sophisticated technologies that can be used to clean up contaminated buried waste that cannot be handled directly by workers.

Interim Storage in the Central Facilities Area of the Idaho National Engineering Laboratory.

▼ **1995 Highlights:**

- Continue development of technology to treat, store, and prepare spent nuclear fuel for final disposal.
- Begin work using large-scale innovative cleanup technology at the Radioactive Waste Management Complex.
- Demonstrate retrieval and characterization systems for buried waste.

Storage modules are being built to ensure that transuranic waste is properly stored until it can be shipped to the Waste Isolation Pilot Plant. Storage facilities are being built for mixed waste, and dry casks have been designed to provide improved storage of spent nuclear fuel. Disposal facilities for low-level waste are being designed to provide final disposition in safe enclosures.

With a budget of \$408 million, activities underway in 1994 include finalizing the design of the waste characterization facility, expedited remediation of waste pond sediments and injection wells, and decontamination and decommissioning of several facilities. The site also plans to submit a draft Record of Decision for a waste area contaminated by organic compounds. Idaho National Engineering Laboratory will submit the draft Record of Decision for the remedial investigation/feasibility study of a landfill and complete waste characterization research and development, transuranic pretreatment tests, demonstration of buried waste retrieval technologies, and "cold" thermal pilot tests.

The 1995 Environmental Management budget request for the Idaho National Engineering Laboratory is \$392 million. The site plans to select and continue the development of treatment technologies for calcined high-level waste as well as sodium-bearing liquid high-level waste. Technology development will also focus on treatment, storage, and preparation of spent nuclear fuel for final disposal. Priority will be given to the consolidation of spent fuel into safe storage while evaluating methods of preparing the fuel for disposal. The site will also continue research and demonstration of technologies concentrating on buried waste retrieval and characterization and mixed waste treatment activities. The Buried Waste Integrated Demonstration will conduct a major field demonstration at the Cold Test Pit. This test will simulate a complete site remediation using the Buried Waste Integrated Demonstration developed technologies. The plasma arc project and the Super Critical Water Oxidation Project will conduct bench scale tests in 1995. Both projects are testing mixed waste treatment technologies. The robotics program is also planning to moderately increase activities in 1995.

The environmental restoration program will complete remedial actions at two sites and begin remedial design and remedial action activities at four additional sites. In addition, facility assembly will begin for the Pit 9 project. Characterization activities will continue throughout the site. Decontamination and decommissioning activities will commence on three facilities located at the Idaho Chemical Processing Plant.

Alaska

Alaska has two inactive sites currently undergoing remedial activities.

Amchitka Island was used for explosive tests and experiments from 1961 through 1973. Completion of site assessment activities for Amchitka Island is scheduled for 1995.

At **Project Chariot** at Cape Thompson, there are small amounts of radioactively contaminated soil resulting from experiments were buried in 1962.

Remedial activities began in July 1993 and were completed in September 1993. The final reports on the cleanup will be submitted to the State of Alaska in 1994. Local village and borough representatives provided oversight along with the Alaska Department of Environmental Conservation.

California

California has 11 sites at which environmental management activities are occurring. The **University of California at Berkeley** is the only FUSRAP site in the State and is discussed on page 26.

Lawrence Livermore National Laboratory consists of two sites. The Main Site encompasses approximately 800 acres 40 miles southeast of San Francisco. Site 300, about 7,000 acres, is located 15 miles southeast of the Main Site.

Field test of innovative technologies at Lawrence Livermore National Laboratory.

At the Main Site, U.S. Navy operations in the 1940's and subsequent Lawrence Livermore National Laboratory activities involving the handling and storage of hazardous materials have resulted in the release and subsequent migration of contaminants into the soil and ground water. Past operations at Site 300 involving processing, testing, and deactivating explosive materials have resulted in soil and ground-water contamination at the site. In addition, both sites have wastewater and petroleum tank systems, and transformers that must be upgraded to meet local, State, and Federal regulations.

During 1993, with an appropriated Environmental Management budget of \$107.6 million, Lawrence Livermore treated over 73 million gallons of ground water to remove organic solvents and recovered almost 10,000 gallons of gasoline in six months using a new process that combines steam injection, electrical heating, and a specialized field testing procedure. This new process can significantly accelerate cleanup schedules. To reduce or eliminate health risks, Livermore completed various facility evaluations for the potential emission of toxins and radionuclides. The facility also performed its first successful solidification of mixed waste filtration residue.

During 1994, with an Environmental Management budget of \$89.5 million, the laboratory plans to install a new liquid-waste treatment system to improve treatment efficiency and reduce quantities of treatment residues. Livermore also plans to initiate a machine waste filtration study and install a gravel washing system at Site 300. It expects to receive contract approval for

The Department of Energy signed cleanup agreements with the State of California and Environmental Protection Agency for cleanup at Lawrence Livermore National Laboratory. These agreements are under the Toxic Substances Control Act, the California State Hazardous Waste Law, the Clean Air Act, and the Comprehensive Environmental Response, Compensation, and Liability Act.

uranium and thorium processing and to complete the preliminary design of a portable treatment system. Livermore will begin operating three new treatment facilities and plans to complete five hazardous waste treatment, storage, and disposal site audits. Livermore will prepare a Safety Analysis Report for waste management facilities that establishes and evaluates the adequacy of the safety bases of the facilities. In addition, Livermore will be preparing and updating a hazardous waste report, and waste minimization and pollution control plans.

In 1995, Livermore plans to submit three final Records of Decision and two draft Records of Decision for areas throughout Site 300. These Records of Decision will address the most significant threats to ground water from Site 300. In addition, the final Main Site ground-water treatment system will be installed. Lawrence Livermore's Environmental Management budget request for 1995 totals \$80.2 million.

Lawrence Berkeley Laboratory, owned by and located adjacent to the University of California at Berkeley, conducts a wide variety of energy-related research activities for the Department, including the operation of particle accelerators and chemical and biomedical research. Past practices resulted in radioactive and hazardous soil and ground-water contamination. In 1993, with a budget of \$10.4 million, Lawrence Berkeley treated over 300,000 gallons of contaminated ground water and disposed of 95,000 pounds of hazardous waste. Lawrence Berkeley also obtained a new RCRA Part B permit and successfully completed an operational readiness review for the operation of a radioactive waste compactor. Lawrence Berkeley completed its community relations plan and distributed stakeholder documents, including factsheets on tritium and environmental restoration. In addition, approval for the construction of a new hazardous waste handling facility was obtained. Actual site construction work began in 1994.

Lawrence Berkeley's Environmental Management budget for 1994 is \$20.5 million. Work planned for 1994 includes upgrading, closing, and installing several wells; completing the tritium risk assessment; and continuing community relations activities. Lawrence Berkeley also plans to dispose of 66,000 pounds of hazardous waste and approximately 12,000 pounds of low-level radioactive waste.

Goals for 1995 include bringing the facility into full compliance with Federal and State laws on air emissions, meeting requirements of its sanitary sewer permit, and removing inadequate underground storage tanks. The budget request for 1995 is approximately \$14.7 million.

The Department bought the **Oxnard** facility, located in Oxnard, in 1984 from a private company. The facility has manufactured forging equipment for the Government since 1958. The facility is managed by the Rocky Flats, Colorado Plant.

The **Sandia National Laboratory/California**, located about 40 miles east of San Francisco, is dedicated to conducting research and development in the interest of national security, with principal emphasis on nuclear weapon development and engineering, excluding nuclear components. The highest priority of its restoration program is remediation of an area contaminated with about 59,000 gallons of diesel fuel oil from a 1975 spill. Bioremediation has been chosen as the preferred remediation alternative, and pilot plant field studies have begun. Pilot phase activities will continue through 1994. Waste management activities include handling, packaging, storing, and disposing of hazardous, low-level radioactive, and mixed waste. Approval to ship low-level radioactive waste to the Nevada Test Site has been received, and two shipments have been made. Sandia will complete the draft Site Treatment Plan and submit it to the State of California. The budget for 1994 is \$5.7 million.

Activities planned with the site's 1995 budget request of \$6.6 million include completing the pilot study and beginning remediation for the oil spill. A second priority is the closure of the old Navy landfill. Also in 1995, the final Site Treatment Plan will be completed.

On September 6, 1990, the State of California and Department of Energy signed an Agreement-in-Principle. This agreement covers activities at:

- Lawrence Livermore National Laboratory
- Lawrence Berkeley Laboratory
- Stanford Linear Accelerator Center
- Energy Technology Engineering Center
- Laboratory for Energy-Related Health Research
- Sandia National Laboratory/California

The **General Electric Vallecitos Nuclear Center** is a commercially owned research site near San Francisco which is no longer active. From 1962 through 1979, the site was used for mixed oxide fuel fabrication and development for the Department. Activities at the site will involve the decontamination of an alpha high-level hot cell and the decontamination and disposal of a glove box. The hot cell was used to examine uranium fuel and reactor components and was later converted to study mixed oxide fuel cell rods. Decontamination is scheduled to begin in 1997. The budget is \$491,000 for 1994 and \$400,000 for 1995 for surveillance and maintenance activities.

General Atomics is a commercially owned research site near San Diego. The Department awarded a contract to General Atomics in 1991 to provide target component fabrication and technology development support to the Department for laboratories engaged in inertial confinement fusion experimentation. During 1993, with a budget of \$1.5 million, decontamination and decommissioning activities began for the hot cell facilities at this site. During 1994, using the budget of \$3.0 million, General Atomics is continuing characterization and environmental documentation required to begin decontamination of the hot cell facility. Decommissioning of the hot cell is scheduled to begin in 1994 and be completed in 1997. The 1995 budget request is also \$3.0 million.

The **Stanford Linear Accelerator Center**, managed under a contract between the Department and Stanford University, conducts theoretical research in high energy particle physics. The Center operates storage facilities for waste oils,

waste solvents, PCB-contaminated oils, aqueous metals, and wastewater treatment sludge. The Center also stores radioactive waste. During 1993, with a budget of \$3.0 million, the Center shipped 330 tons of hazardous waste to offsite facilities, characterized a contaminated drainage ditch, and upgraded a computerized waste tracking system. Stanford prepared waste minimization guidance for reducing waste generation and increasing recycling, and prepared a draft work plan for eight "high priority" contaminated sites. During 1994 and 1995, with budget requests of \$5.7 million and \$6.6 million, respectively, the Center will continue its waste minimization efforts and activities to properly dispose of hazardous and radioactive waste, and will complete the remedial investigation report for contaminated soil and ground water.

The **Santa Susana Field Laboratory** is a 3,600-acre site owned and operated by Rockwell International. The **Energy Technology Engineering Center**, operated by the Department of Energy, occupies 90 acres of the Laboratory. The Center has provided management, engineering, testing consultation, and project oversight for a wide range of nuclear energy programs that were essentially terminated at the end of 1993. Environmental restoration and decontamination and decommissioning activities began at this site in the early 1970's. In 1990, the Department began a systematic decontamination of remaining facilities formerly utilized for reactor development activities. By the end of 1993, 99 percent of the remaining radioactive contamination had been removed from the site. This included final decontamination of the last Space Nuclear Auxiliary Power reactor facility and the remediation of a former sodium disposal facility. Ground-water remediation for the volatile organic contamination will commence in 1994, utilizing a budget of \$6.5 million. During 1994 and 1995, the Department will conduct a site-wide survey to ensure that no remaining areas of contamination exist. In 1995, with a budget request of \$9.2 million, the nonnuclear sodium test facilities will begin transition to the Environmental Management program.

Rockwell International (formerly Atomics International) built and operated the Sodium Reactor Experiment at Santa Susana Field Laboratory from 1955 through 1964 as part of the first civilian nuclear power reactor program. In addition, Rockwell operated a hot cell facility for development testing of reactor cores and fuel decladding and examination. Decontamination and decommissioning of the reactor facility was completed in 1983. The hot cell facility ceased operation in 1989, and decontamination activities began in 1990. The decontamination is approximately 75 percent complete to date, with 90 percent of the residual radioactivity removed. It is expected to be completed in 1998.

Removal of a waste tank is part of the Waste Management program.

The **Laboratory for Energy-Related Health Research**, located at the University of California at Davis, is no longer active and is scheduled to be returned to the University following cleanup. Research on the health effects of exposure to low levels of radiation resulted in the contamination of five buildings, outdoor pens, and a tank trailer. During 1993, with a budget of \$6.2 million, the Laboratory removed, treated, and disposed of 36,000 gallons of low-level waste; removed and disposed of radioactive biowaste; and removed the cobalt-66 irradiator, which was used to investigate the effects of low-level exposure. Contamination from the cobalt-66 irradiator, although safely contained, represented a substantial perceived threat to the surrounding community. These actions reduced the remaining radioactivity at this site. Decontamination and decommissioning activities will continue through 1995 for the buildings, the pens, and the tank trailer. A site-wide remedial investigation for soil and ground water is scheduled for 1995, with a 1995 budget request of \$7.8 million.

The **Pagano Salvage Yard**, located in Valencia County, is proposed to be placed on the National Priorities List. The Sandia National Laboratory has been named a Potentially Responsible Party, making it partially responsible for cleanup. The Environmental Protection Agency Region VI completed a removal action, and there was an enforceable agreement between Sandia and the Environmental Protection Agency for cost reimbursement for the removal action. The Department reimbursed the Environmental Protection Agency completely for cleanup costs in early 1994.

The **Salton Sea Test Base** in Imperial County was formerly used by Sandia National Laboratories and currently is owned and operated by the U.S. Navy. Previous Sandia operations may have contributed to the environmental problems at the site. Also, in 1972, the Energy Research and Development Administration, the Department's predecessor, agreed to jointly fund, with New Albion Resources Company, an experimental geothermal power test plant on 20 miles of land in the Salton Sea area. Sandia must monitor the Navy's assessment activities and negotiate any cleanup credit exchanges for those assessment activities. Sandia may eventually have to reimburse the Navy for remediation activities, although this issue has not been formally addressed.

Hawaii

The **Kauai Test Facility** covers 182 acres of the Kauai Island within the U.S. Navy's Pacific Missile Range Facility. The site is a satellite facility for Sandia National Laboratory-New Mexico and supports the Department's research and development activities, including launching rockets carrying experimental nonnuclear payloads. Contamination of the site consists of three potential release sites. These include a photography laboratory, a drum storage area, and the rocket launcher pads. A reconnaissance sampling effort

to determine if these sites are contaminated and a single-stage remedial investigation will establish the extent of contamination and recommend a preferred remedial alternative.

Idaho

In addition to the Idaho National Engineering Laboratory, there are two other sites in Idaho. The **Lowman** site, an UMTRA site, is discussed below. The second site, **Argonne National Laboratory-West**, is located on the southeastern portion of the Idaho National Engineering Laboratory. Its primary mission is research and development. Three experimental nuclear test reactors are located on the site. Major activities include the ongoing management of mixed waste, construction to upgrade waste management facilities, and the assessment and remediation of waste areas. During 1993, with its budget appropriation of \$6.2 million, Argonne installed leak detection systems on underground storage tanks and completed assessment of five solid waste management units. During 1994, with a budget of \$4.4 million, the site expects to transfer mixed waste from single-lined containers to double-lined containers and complete documentation required by the National Environmental Policy Act for sampling and continued surveillance of the central liquid processing area. Argonne National Laboratory-West has a 1995 request of \$4.6 million. Activities planned with this budget request include disposal of hazardous waste at approved facilities offsite, updating the Waste Characterization and Certification Plan, implementing the RCRA Part B Permit requirements at the Radioactive Sodium Waste Facility, and completing land application permits. Environmental restoration activities include beginning field data gathering, installing a ground-water monitoring well, and beginning data validation and evaluation of the potential risks at areas onsite.

Montana

The **Component Development and Integration** site, located near Butte, is a research and development facility for developing and testing new technologies for cleanup of toxic heavy metals in water, plasma thermal treatment of hazardous waste, and pollution prevention technology. There is no radioactive material or contamination onsite.

FUSRAP AND UMTRA Sites

There are two FUSRAP sites in the Northwestern region, the **Albany Research Center** near Albany, Oregon, and the **University of California at Berkeley**. Environmental management activities at these sites were completed in 1991 and 1992, respectively.

There are seven sites in the Northwestern region that are managed by the UMTRA program. The **Vicinity Properties** near Edgemont, South Dakota; the **Spook** site in Spook, Wyoming; and the **Lowman** site in Idaho completed surface remediation prior to 1993. The Nuclear Regulatory Commission

NORTHWESTERN SITE SUMMARIES

issued the General License for Spook in 1993, and the site will be transferred to the Grand Junction Project Office in 1994 for long-term surveillance and monitoring.

The **Riverton**, Wyoming, and **Lakeview**, Oregon, sites completed surface cleanup prior to 1993. The General License for the Lakeview site is expected to be issued by the Nuclear Regulatory Commission in 1994 with transfer to the Grand Junction Projects Office scheduled in 1995 for long-term surveillance and monitoring.

The **Bowman** and **Belfield** sites in southwest North Dakota are undergoing baseline risk assessments for the ground-water project in 1994. Surface remedial action activities are scheduled to begin in 1996.

Southwestern Site Summaries

For the purposes of this report, the Southwestern region includes six States: Arizona, Colorado, Nevada, New Mexico, Texas, and Utah. The major sites in the region are the Rocky Flats Plant in Colorado, the Nevada Test Site in Nevada, and the Los Alamos National Laboratory and the Waste Isolation Pilot Plant in New Mexico. The FUSRAP program has ongoing activities at three sites in the region. The UMTRA program is responsible for 18 sites in this region.

Rocky Flats, Colorado

The Rocky Flats Plant has Facility Compliance Agreements in place with the Environmental Protection Agency and the State of Colorado. Rocky Flats has also completed negotiation for an Agreement-in-Principle with the State of Colorado.

The Rocky Flats Plant is located in northern Jefferson County, approximately 16 miles northwest of Denver, Colorado. The plant site is 11 square miles including the "buffer zone" between the site and its boundaries. With the discontinuation of nuclear components production at Rocky Flats and the consolidation of the production of nonnuclear weapon components at the Kansas City Plant in Missouri, Rocky Flats Plant's mission now focuses on environmental cleanup to prepare the site for alternative uses.

In 1993, Rocky Flats progressed toward the deactivation of buildings, began onsite consolidation of special nuclear materials, and completed shipments of certain nuclear materials to other sites. In addition, Rocky Flats made strides in the development of improved planning tools, initiating the conversion process that will guide economic development of the site, and providing the public and other stakeholders with opportunities to be involved in the transition decisions that will affect the surrounding community.

In 1993, with an Environmental Management budget of \$291.2 million, waste treatment, packaging, storage, and transportation activities continued, and inactive sites were characterized and remediated. In addition, 88 of the 266 cleanup milestones included in the January 1991 Interagency Agreement between the Department, the Environmental Protection Agency, and the State of Colorado were completed or on schedule. Among the major

SOUTHWESTERN SITE SUMMARIES

FIGURE 10. Rocky Flats is located approximately 16 miles northwest of Denver, Colorado.

milestones completed were construction and operation of two interim remedial action facilities. One of these facilities has collected and treated over 1.5 million gallons of potentially contaminated ground water that could migrate into a drinking water reservoir. The other facility has collected and treated over 18 million gallons of surface water from seeps in a drainage pipe that leads to a drinking water reservoir. A new evaporation treatment facility for the solar ponds started treating contaminated water from below the ponds.

In 1993, investigation began on the potential for a revised, accelerated approach to the Rocky Flats environmental restoration program. The approach would build on and integrate a number of past and current actions to improve the execution of the cleanup program, such as implementing partial cleanup solutions sooner, deferring work linked to the decontamination and decommissioning of deactivated contaminated buildings, and reducing or eliminating treatment of surface water that, during

The Rocky Flats Pondcrete Tents, used for interim storage of waste from the solar ponds.

During 1994, the Rocky Flats Plant's workforce will be restructured. A workforce restructuring plan has been prepared that incorporates the review and comment of affected stakeholders. Voluntary separation incentives, opportunities for retraining, extended health care benefits, and outplacement services are all proposed to reduce the impacts on displaced workers and the community.

▼ **1995 Highlights:**

- Increase sample analyses of backlog waste in order to properly classify and transport waste from site.
- Demonstrate innovative treatment of mixed waste.
- Complete field work at most areas outside the industrial area.

the past several years, has exhibited little or no contamination. The net impact could be a considerably faster and potentially cheaper cleanup of Rocky Flats. The revised approach has been presented to the Environmental Protection Agency and the Colorado Department of Health, and the Department will seek broad public involvement and regulatory approval before going forward.

This year, with an Environmental Management budget of \$477.1 million, revisions were made to plans that will close the solar ponds and accelerate the cleanup schedule by two years. The contaminated sludge that is present in two of the five ponds will be removed and stored in tanks until a process for solidification has been perfected. These solar evaporation ponds received low-level radioactive and hazardous liquid waste effluents from the sewage disposal plant and contaminated ground water for many years. The Department is renegotiating the Interagency Agreement with the Environmental Protection Agency and the State of Colorado.

Rocky Flats is currently involved in a collaborative effort with scientists and engineers from the academic arena and industry to develop thermal treatment technologies for use at Rocky Flats and elsewhere. Mixed waste would be heated, destroying the hazardous component and leaving behind water, carbon dioxide, and an ash residue that could be solidified and disposed of offsite. In addition, Rocky Flats is developing other non-incineration technologies for treating mixed waste. These technologies include microwave melting, polymer solidification, low temperature thermal desorption, and nonthermal oxidations technologies. The microwave and polymer solidification processes have successfully demonstrated the ability to meet required treatment standards for regulatory compliance in surrogate waste tests. These efforts are being conducted with the \$9.1 million budget for 1994 technology development activities.

In 1995, using its Environmental Management budget request of \$639.7 million, Rocky Flats will continue assessment and remedial activities. The final Site Treatment Plan for mixed waste will be completed, which will establish a specific program for treating the significant mixed waste inventory at the plant. Rocky Flats will also begin construction of the new onsite sanitary landfill. As the site completes its transition from weapons production to cleanup, this facility is essential for receipt of the growing volume of non-contaminated industrial waste generated onsite. In addition, the Rocky Flats Local Impact Initiative, a group of affected local governments, residents, regulators, and business owners, and other interested organizations, will be working with the Department during 1995 to develop a Future Land Use Plan. This is of particular importance for establishing commercial uses for

onsite facilities to mitigate the impact of the loss of jobs due to the shift from weapons production. Additional Environmental Management sites located in Colorado are discussed on page 37.

Nevada Test Site, Nevada

The Nevada Test Site is located about 65 miles northwest of the City of Las Vegas. The Test Site encompasses 1,350 square miles of desert and mountainous terrain. The site is surrounded on three sides by the 4,120-square-mile Nellis Air Force Range, which provides a substantial buffer between the site and surrounding communities. Prior to the signing of the Limited Test Ban Treaty on August 5, 1963, which effectively banned atmospheric testing of nuclear weapons, the Department's predecessor agencies conducted more than 1,100 nuclear tests at the Nevada Test Site. One hundred twenty-six tests were conducted at other locations in and outside of Nevada.

The Sedan crater at the Nevada Test Site. This crater was formed when an explosive was fired 635 feet under ground, displacing 12 million tons of earth.

The Nevada Operations Office is working with the State to develop a compliance agreement under RCRA and the Atomic Energy Act that addresses projected cleanup activities. Negotiations on a consent agreement under the Federal Facility Compliance Act should result in regulatory compliance for mixed waste. By the end of 1997, all the major areas of concern will have been addressed, cleanup will be underway, and monitoring programs will have begun.

The Nevada Test Site disposes of low-level radioactive waste onsite from the Site and from other Department installations. In addition, the Site stores mixed transuranic waste from Lawrence Livermore National Laboratory pending shipment to the Waste Isolation Pilot Plant. Pure transuranic waste may also be accepted for storage on a case-by-case basis. Limited mixed waste disposal will be available to the Nevada Test Site pending approval of the environmental assessment and waste analysis plan. An expanded mixed waste disposal facility will be constructed when the State of Nevada issues the RCRA Part B permit.

During 1993, with a budget of \$70.7 million, Nevada initiated soil and vegetation removal demonstrations to determine the applicability of a cleanup technology for plutonium contaminated soils, removed abandoned septic tanks, and surveyed offsite locations in Colorado, Nevada, and New Mexico to determine the presence of biological species, cultural resources, wetlands, and flood plains.

Some waste disposed of at the Nevada Test Site does not meet requirements for shallow burial and must be disposed of in a geologic repository. The Preliminary Performance Assessment for this type of disposal was submitted in 1993. Title II design was also completed for one of the new proposed mixed

FIGURE 11. Map of the Nevada Test Site.

waste disposal units. A RCRA Part B permit application for five waste management units (including mixed waste disposal, hazardous waste storage, and explosives disposal) was submitted to the State in 1993. A plutonium pathway/risk analysis on safety shot sites at the Nevada Test Site and adjoining lands was completed. This analysis provides an assessment of risk associated with the existing land condition and current site usage, and will be used as a basis for comparison when remediation is conducted. Closure of a hazardous waste landfill was completed in September 1993.

The Department of Energy and State of Nevada signed an agreement for mixed transuranic waste under the Resource Conservation and Recovery Act on June 23, 1992.

▼ 1995 Highlights:

- Begin construction of a liquid waste treatment system.
- Continue remediation of the ordnance disposal area and underground storage tanks.

Los Alamos National Laboratory, New Mexico

With a 1994 budget of \$60.6 million, several activities are underway. The Waste Minimization and Pollution Prevention Awareness Plan is being prepared. The site is also revising the Safety Analysis Report for several unclassified and classified waste disposal areas. A Realtime Radiography building, which uses x-rays to help determine contents of waste drums without opening them, and a Breaching and Sampling building, which can puncture a waste container and safely remove samples for analysis, are planned to be constructed for use in verifying waste types from offsite generators. The RCRA permit application is being revised and modified to address the State of Nevada's comments.

In 1995, with a budget request of \$65.3 million, planned activities include continuing assessment activities for the underground nuclear testing sites, abandoned septic tanks, RCRA closure plan development, and environmental restoration sites inventory. Report preparation on the abandoned septic tanks, survey support, cultural resource surveys, and work plan implementation will also continue. Development of the closure plans on the Streamlined Approach for Environmental Restoration Implementation will begin. Field work will continue on cultural resource surveys and on field investigations at various locations throughout the site.

Remediation of the Explosive Ordnance Disposal area and the underground storage tank will continue. Construction will begin for the landfill remediation activities. Also scheduled in 1995 is the completion of the Environmental Impact Statement, construction of the liquid waste treatment system, and development of the Greater Confinement Disposal Technical Alternatives Document. This document will analyze and discuss technical alternatives for potential waste storage and disposal at the Nevada Test Site. Modifications to the RCRA permit application will continue to be made to include new units for storage and treatment.

Los Alamos National Laboratory occupies about 43 square miles in Los Alamos County, New Mexico. Major programs include applied research in nuclear and conventional weapons development, nuclear fission and fusion, nuclear safeguards and security, and environmental and energy research.

In 1993, the Department of Energy, with support from Los Alamos National Laboratory, and the Environmental Protection Agency Region IX Office negotiated a Federal Facilities Compliance Agreement addressing the Laboratory's compliance with RCRA land disposal restrictions, primarily those regarding mixed waste. The draft agreement has been distributed for public comment and Environmental Protection Agency review and is

FIGURE 12. Map of the Los Alamos National Laboratory.

expected to be finalized and signed in 1994. About 2,250 potential release areas are scheduled for investigation in the environmental restoration program.

The Department and the Laboratory have also negotiated a compliance agreement with the New Mexico Environment Department that outlines and schedules activities for remediation of storage pads used to store transuranic waste. In 1993, with an Environmental Management budget of \$172.9 million, the Laboratory processed 21,900 pounds of lead and 20 drums of scintillation vials, and shipped 371 empty gas cylinders offsite for treatment and disposal. All of these activities reduced the volume of hazardous and radioactive waste stored onsite. The Laboratory also completed the first design phase of the Hazardous Waste Treatment Facility and draft Preliminary Safety Analysis Report and submitted the Environmental Assessment and RCRA permit. All of this documentation is necessary to construct and operate the facility. Los Alamos completed nondestructive characterization of

The Laboratory initiated field investigations at 14 areas onsite and removed six underground storage tanks, thereby reducing the spread of further contamination.

all remote-handled transuranic waste in a wing of the chemical research facility, 10 remote-handled transuranic waste shipments, and remediation activities at 7 waste areas.

During 1994, with an Environmental Management budget of \$185.1 million, the Laboratory plans to conduct a number of remedial activities, including developing the Decontamination and Decommissioning Master Plan, starting design of a wastewater treatment facility, and continuing characterization of the legacy waste and remediation in an area targeted for low-level waste disposal. The Laboratory will begin decontamination and decommissioning of former reactor facilities and prepare and submit four remedial investigation/feasibility study work plans to the Environmental Protection Agency. Los Alamos continues to develop the certification program and waste acceptance criteria for transuranic waste generators and a consolidated transportation program for transuranic waste. In 1994, the Laboratory will complete the conceptual design plan and operational requirements for a radioactive liquid waste treatment facility. If justified, it will be proposed as a new construction project. The treatment facility is designed to operate effectively for 40 years and meet many program requirements.

For 1995, with a requested budget of \$180 million, Los Alamos is scheduled to complete Title II design and submit a RCRA mixed waste permit application for the Hazardous Waste Treatment Facility, and complete decontamination and decommissioning of the former plutonium processing facilities. The Laboratory will submit the final Site Treatment Plan for mixed waste in 1995. Los Alamos also plans to submit the final remedial investigation/feasibility study work plan and conduct field work at various contaminated sites.

Waste Isolation Pilot Plant, New Mexico

The Waste Isolation Pilot Plant is located 26 miles east of Carlsbad in Eddy County, New Mexico. The site covers 10,240 acres of Federal land. The repository is located 2,150 feet below the surface in a 2,000-foot-thick salt bed with tunnels that extend over 10 linear miles.

The mission of the Waste Isolation Pilot Plant is to provide a research and development facility to demonstrate the safe disposal of defense-related transuranic radioactive waste. The transuranic waste destined for the Waste Isolation Pilot Plant is currently in temporary storage at waste generator sites located in California, Colorado, Idaho, Illinois, Nevada, New Mexico, Ohio, South Carolina, Tennessee, and Washington.

FIGURE 13. Cross section of the Waste Isolation Pilot Plant.

The Waste Isolation Pilot Plant must comply with RCRA and Environmental Protection Agency regulations for storing, managing, and disposing of transuranic waste. Certification from the Environmental Protection Agency and permits from New Mexico will be required before disposal operations begin. Additionally, the Department must comply with the provisions of the Waste Isolation Pilot Plant Land Withdrawal Act of 1992. This Act established a new regulatory framework and statutory process for demonstrating compliance with environmental regulations.

With a budget of \$150.7 million in 1993, the project completed key programmatic and Land Withdrawal Act milestones such as the submission of the Summary Transportation Emergency Response Training Report to Congress, States, and Indian Nations. In addition, the program also issued a strategic plan to stakeholders to gather input on program direction. This

Boreholes such as this have been drilled 2,150 feet underground for testing at the Waste Isolation Pilot Plant.

▼ 1995 Highlights:

- Support offsite waste testing for compliance determination.
- Continue Safety and Health and Quality Assurance activities.
- Increase research and development activities.

budget was also utilized to maintain the site and continue ongoing non-radioactive testing at the site and national laboratories. The program also supported institutional review groups, including: the Environmental Evaluation Group, the New Mexico Environment Department, National Academy of Sciences, the Western Governors' Association, the Southern States Energy Board, and the State of New Mexico.

The project is now in the predisposal phase, during which experimental program activities to gather information needed to support the compliance application and performance assessment calculations will be completed. This phase also includes the preparation of compliance documents, establishment of the administrative record, submission of these documents to the Environmental Protection Agency and appropriate rulemaking by the Environmental Protection Agency. Other activities include the preparation of the Supplemental Environmental Impact Statement, the disposal phase Final Safety Analysis Report, the RCRA part B permit, and the Waste Isolation Pilot Plant facility Operational Readiness Review. The predisposal phase will end when the Secretary of Energy decides to operate the site as a permanent disposal facility or to abandon the project if compliance with Federal and State regulations cannot be demonstrated. These activities and others are being accomplished with a budget of \$185.3 million in 1994.

A major program redirection occurred late in 1993 with the decision to redirect planned underground radioactive waste tests at the Waste Isolation Pilot Plant and instead focus project efforts on a strategy for accelerated regulatory compliance. Under the new strategy, the project will conduct simulated and radioactive waste tests at the laboratory sites to gather the information needed to demonstrate compliance. The Department plans to submit a draft Compliance Certification Package to the Environmental Protection Agency in 1995 and a final in 1996. Non-radioactive testing and support for institutional groups, as well as testing at laboratory sites, will continue in 1995. The requested budget for 1995 is \$184.6 million.

Arizona

Arizona has two sites, **Monument Valley** and **Tuba City**. Both sites are located in northern Arizona, are part of the UMTRA program, and are discussed on page 42.

Colorado

In addition to the Rocky Flats Plant, Colorado has 11 sites, 2 of which were used for underground nuclear tests. The test sites, **Project Rulison**, near Grand Valley, and **Project Rio Blanco**, near Rifle, are each a few acres in size. The Department developed forecast baselines and is initiating the site assessments for both sites in 1994, and will continue through 1995. The other sites are

part of the UMTRA program. These include **Gunnison, Durango, Grand Junction, Maybell, Naturita, Old Rifle, New Rifle, Union Carbide, and Old North Continent**. Information about these sites appears on page 41.

Nevada

The State of Nevada and the Department of Energy signed an Agreement-in-Principle for cleanup of the Nevada Test Site on October 4, 1990.

In the State of Nevada, there are four sites that require remediation. The sites are the Nevada Test Site (see page 31), the **Project Shoal Site**, the **Central Nevada Site**, and the **Tonopah Test Range**. From 1961 through 1973, the Project Shoal Site and the Central Nevada Site were among the offsite locations used by the Department to conduct underground nuclear tests and experiments. Before the sites can be remediated, an assessment of each site must be conducted to determine the extent of contamination. The assessments are scheduled to begin in 1994. Annual ground-water monitoring will continue.

The **Tonopah Test Range** was established in 1957 for testing ballistics of nuclear weapons, parachutes, and other nonnuclear functions for Sandia National Laboratories. A site assessment began in late 1993 and will continue through 1994. Current activities include an environmental restoration site inventory, surface and aerial surveys, and a risk assessment. These surveys will help determine the extent of contamination. Fourteen potential release areas in need of characterization have been identified to date.

New Mexico

In addition to the Los Alamos National Laboratory and the Waste Isolation Pilot Plant, New Mexico has 11 sites. The sites include research laboratories, test sites, UMTRA sites, and FUSRAP sites that require remediation. The FUSRAP sites include **Chupadera Mesa, Bayo Canyon, Acid/Pueblo Canyon**. The UMTRA sites are **Ambrosia Lake** and **Shiprock**. Information about these sites begins on page 42.

From 1957 to 1967, the **South Valley Plant**, near Albuquerque, conducted electroplating, machining, painting, adhesive, and degreasing operations related to weapons, reactors, and space programs. As a Potentially Responsible Party under a tri-party agreement with the Air Force and General Electric, the site is conducting environmental restoration activities that include remediation of the soils and ground water contaminated during the facility's operation. In 1993, stabilization of contaminated soils was completed. During 1994, the site will continue to conduct monitoring at various wells, and will construct a shallow zone remediation system to determine the extent and nature of the ground-water contamination, and will construct a shallow zone remediation system. Activities planned for 1995 include operating a pump and treat system for shallow ground water and constructing a separate pump and treat system for contaminated deep ground water.

Tests being conducted at Sandia National Laboratory on shipping casks that may be used to transport waste to the Waste Isolation Pilot Plant.

The Los Alamos and Sandia National Laboratories have signed Facility Compliance Agreements with the State of New Mexico and the Environmental Protection Agency. Sandia, Los Alamos, the Waste Isolation Pilot Plant, and the Inhalation Toxicology Research Institute completed negotiation for an Agreement-in-Principle with the State of New Mexico on October 22, 1990.

The **Sandia National Laboratory/New Mexico** is a research and development facility with a primary mission of developing, engineering, and testing nonnuclear components of nuclear weapons. Sandia's environmental restoration mission is to identify, assess, and remediate inactive sites potentially contaminated with hazardous, radioactive, or mixed waste. In an effort to characterize the hydrogeologic framework within which ground-water contamination may exist, the Sitewide Hydrogeologic Characterization Project Annual Report was completed in 1993. The Laboratory also completed the Report of Air Emission Impact Baseline Study and Title II design of the Liquid Effluent Control System, which is intended to ensure that effluent released to the environment is below regulatory levels. In 1993, the Laboratory also completed the closure/contingency plans for Sandia's RCRA mixed waste Part B permit application. This application, when approved by the Environmental Protection Agency, will allow Sandia to legally store hazardous waste. Sandia also completed the Conceptual Site Treatment Plan for mixed waste as required by the Federal Facilities Compliance Act of 1992. Radioactive Materials Management Area procedures prepared by Sandia were approved by the Environmental Management program, enabling Sandia to ship hazardous waste from radiological control areas. Associated mixed waste procedures for work that generated mixed waste allowed the moratorium to be lifted. An in situ landfill characterization system to rapidly evaluate mixed waste contamination while minimizing the likelihood of contamination release from sampling and monitoring boreholes was developed and tested. Finally, Sandia completed four RCRA facility investigation work plans that describe proposed characterization activities and received final approval of the chemical waste landfill closure plan to the New Mexico Environment Department. All of these activities were conducted with a budget of \$73.7 million for 1993.

In 1994, with a budget of \$73 million, the Laboratory plans to complete construction of the Liquid Effluent Controls System, conduct characterization activities at various locations, complete the report for the Liquid Waste Disposal System investigation, and submit a preliminary assessment of the Kauai test facility to the Environmental Protection Agency. During 1995, the Laboratory plans to complete the RCRA Part B application and begin the second phase of characterizations for four areas. Sandia may conduct any additional sampling and analysis needed to fully characterize these areas. For 1995, Sandia's budget request totals \$51.9 million.

Sandia National Laboratory-New Mexico has generated chemical, radioactive, and mixed waste at a number of off-base locations including one building at the **Holloman Air Force Base** near Albuquerque.

The Department of Energy has Agreements with the Environmental Protection Agency and the State of Texas. The agreement with the Environmental Protection Agency governs waste disposed under the Resource Conservation and Recovery Act.

The **Inhalation Toxicology Research Institute** conducts studies on the health effects of inhaling potentially hazardous airborne materials that might be found in industry, the environment, or the home. The major concerns at the site are the assessment and cleanup of four areas contaminated with hazardous substances and proper management of all hazardous, radioactive, and sanitary waste generated onsite. During 1993, using a budget appropriation of \$3.0 million, the Institute submitted a waste generator application that will allow the Institute to dispose of radioactive waste at the Nevada Test Site. The Institute also completed assessment and remediation of locations where spilled diesel oil may have caused soil contamination. To determine the extent of ground-water contamination, the Institute installed monitoring wells at various locations throughout the site. For 1994, with a budget of \$3.5 million, work is underway to complete the assessment of the ponds where radioactive waste was formerly held. The assessment determines the extent of contamination and the best means for remediation. In 1995, plans for using the budget request of \$2.7 million include completing remediation of the ponds, the sanitary lagoons, and ground water.

The **Project Gnome-Coach** site and the **Project Gasbuggy** site are offsite testing locations previously used to conduct underground explosive nuclear tests and experiments from 1961 through 1973. The sites are currently inactive. Before any of the sites can be remediated, the Department will conduct an assessment to determine the extent of contamination. The assessment is scheduled to begin in 1994. Ground-water monitoring is conducted annually at both sites.

Texas

Texas has two sites requiring remediation. The **Falls City** site is part of the UMTRA program and is discussed on page 42.

The **Pantex Plant** is responsible for assembly, dismantlement, maintenance, and quality assurance of the Nation's nuclear weapons stockpile. In addition, the site conducts research and development on various explosives in support of weapons design, development, and production engineering for the Department of Energy.

Environmental restoration activities at the site include the assessment of 144 solid waste management units. The assessment activity involves field investigations; sampling and testing of surface waters, sediments, and soils; and drilling of monitoring wells to determine the extent of contamination. In 1993, with a budget of \$41 million, regulatory approval was received on 12 of 14 RCRA Facility Investigation work plans submitted. Initial phases of fieldwork have been completed for 7 of the 14 investigations. Pantex developed and initiated one RCRA closure plan in 1993. This plan identifies

Cleanup at the Monticello Mill Tailings site.

Utah

The Monticello Mill Site/Vicinities Properties has a Facility Compliance Agreement in place with the State of Utah and the Environmental Protection Agency.

how the unit will be cleaned up and to what level. In 1994, with a budget of \$35.7 million, the Plant expects to complete the characterization of mixed waste from past operations and the review of waste generation operations for waste minimization and pollution prevention opportunities. The site will continue its weapon component characterization program to facilitate the national stockpile dismantlement strategy. In 1995, with a requested budget of \$45.6 million, Pantex expects to complete the final Site Treatment Plan as required by the Federal Facility Compliance Act. Pantex also expects to complete construction of the new waste staging and storage facilities, as well as the design of a hazardous waste treatment and processing facility. The facilities will provide for continued safe management of all Pantex waste. Pantex also will be completing cleanup plans for several areas throughout the site.

The **Monticello Mill Tailings** site covers remediation of the mill site and peripheral properties, and surface and ground-water contamination. During 1993, site preparation was completed and pre-excavation was initiated at the mill site, three peripheral properties were cleaned up, and the first phase of the remedial investigation for surface and ground water was completed. The Monticello vicinity properties remedial action activities include completion of inclusion surveys on over 1,000 private properties and remediation of uranium mill tailings contamination on an estimated 400 private residences and businesses. Inclusion surveys are complete for 94 percent of the properties, and remediation is complete at 64 percent of the properties. In 1994, all inclusion surveys will be completed and remediation will be completed in 1996.

FUSRAP AND UMTRA Sites

Grand Junction is the largest UMTRA site. Over 4 million yards of tailings have been remediated, including the site and "vicinity properties." There are over 4,000 vicinity properties in the City of Grand Junction and Mesa County in Colorado where contaminated debris was used for landscaping and construction. By the end of 1993, using its appropriated budget for vicinity properties of \$32 million, UMTRA completed remedial action on 123 properties bringing the total to 4,049 of the 4,318 scheduled for cleanup. The UMTRA project also transported vicinity property mill tailings to an interim repository. Tailings at remaining properties will be hauled to the Cheney cell. These activities greatly reduced the risk to the public from radon gas emanating from uranium mill tailings in residences and businesses. The site surface remedial action was about 99 percent complete at the end of 1993. The baseline risk assessment for the ground-water project is being conducted in 1994. Grand Junction's Environmental Management budget for 1994 is \$31.7 million and for 1995, its request is \$36.6 million.

UMTRA Installations/Sites

Arizona

Monument Valley
*Tuba City**

Colorado

*Durango**
Grand Junction Vicinity Properties
Gunnison
Maybell
Naturita
New Rifle
Old North Continent
Old Rifle
Union Carbide

Idaho

*Lowman**

New Mexico

Ambrosia Lake
*Shiprock**

North Dakota

Belfield
Bowman

Oregon

*Lakeview**

Texas

Falls City

Utah

*Green River**
Mexican Hat
*Salt Lake City**

Wyoming

*Riverton**
*Spook**

* Completed

The **Grand Junction Projects Office** includes 35 buildings that house specialized chemical, electronics, instrumentation and radon laboratories. The Grand Junction Projects Office Remedial Action Project involves the remediation of contaminated materials associated with past uranium ore processing activities at the Grand Junction Projects Office and co-disposal of 247,000 cubic yards of contaminated materials with tailings from the Grand Junction UMTRA millsite cleanup. The project is 82 percent complete with only 44,000 cubic yards remaining to be stored. The Environmental Management budget for 1994 is \$31.7 million, and the budget request for 1995 is \$36.6 million.

In addition to Grand Junction, the UMTRA program manages 16 sites in the Southwestern region. The **Durango** site in Colorado and the **Salt Lake City** and **Green River** sites in Utah completed surface remediation activities prior to 1993. Baseline risk assessments for the ground-water project will be conducted in 1994 for these sites. The Department also completed surface remediation activities at **Tuba City**, Arizona, and **Shiprock**, New Mexico, prior to 1993. The Nuclear Regulatory Commission is scheduled to issue a General License to these two sites in 1994 and 1995, respectively. The sites will be transferred to the Grand Junction Projects Office in 1995 and 1996 for long-term surveillance and monitoring.

Surface remediation activities, which began in August 1992 at the **Monument Valley** site in Arizona, are scheduled for completion in late 1994. The baseline risk assessment for the ground-water project was performed in 1993.

At sites in **Falls City**, Texas; **Mexican Hat**, Utah; and **Ambrosia Lake**, New Mexico; surface remedial activities are ongoing with completion scheduled in 1995. In addition, surface remedial activities are ongoing at the **Gunnison**, **Old Rifle**, and **New Rifle** sites in Colorado with completion scheduled for 1996. Surface remediation activities are scheduled to begin at the **Naturita** site in Colorado in 1994. During 1995, surface remediation is scheduled to begin at the **Maybell**, **Union Carbide**, and **Old North Continent** sites in Colorado.

All three FUSRAP sites in the Southwestern region are in New Mexico. These include **Chupadera Mesa**, part of the fallout area from the first nuclear weapons test conducted on July 16, 1945, at the White Sands Missile Range; **Bayo Canyon**, a firing site for the Manhattan Project from 1943 to 1944 and for the Atomic Energy Commission until 1961; and **Acid/Pueblo Canyon**, a former wastewater treatment plant that treated discharges from Los Alamos National Laboratory.

Central Site Summaries

Environmental Management is conducting activities at sites in Illinois, Iowa, Michigan, Missouri, Nebraska, and Ohio. Of the 27 sites in the region, 15 of them are in various stages of cleanup under the FUSRAP program and 4 are research laboratories.

Fernald, Ohio

Sampling of Waste Pit 5 at the Fernald site.

The Fernald Environmental Management Project is located on 1,050 acres approximately 18 miles northwest of Cincinnati, Ohio. The site produced uranium metals and compounds for nuclear reactor fuel as part of the Nation's defense program from 1953 until 1989, when all production operations stopped. In 1991, production was permanently halted, and the Fernald Environmental Management Project began. The project has one major mission: cleanup of the site and any offsite contamination as soon as possible in a manner that is safe and cost-effective. The site will perform waste management and base services activities, complying with applicable orders, agreements, and other regulatory requirements. To complete this mission, the Department awarded an environmental restoration management contract to the Fernald Environmental Restoration Management Corporation, a division of Fluor Daniel, Inc. All intermediate removal actions are planned to be completed and decisions made on what cleanup method is best for each of the five main areas at the site by 1998.

The Fernald budget in 1993 was \$294 million, with 99 percent spent on environmental restoration activities and 1 percent on technology development. These activities include shipping approximately 6 million pounds of depleted uranium metal product to the Defense Consolidated Facility in Barnwell County, South Carolina. Fernald completed all scheduled milestones in its consent decree with the State of Ohio, including

FIGURE 14. The Fernald Environmental Management Project is located 18 miles northwest of Cincinnati.

submitting a revision to the RCRA Part A and B applications; issuing quarterly technical reports; submitting a Hazardous Waste Management Unit review for one of the waste pits; inspecting drums, as required; moving stored materials from open pads to covered areas; completing process knowledge evaluations; submitting a report on thorium materials; and completing a waste disposal plan.

Fernald's budget for 1994 is \$304.4 million, with \$302 million designated for environmental restoration activities. Approximately \$2.4 million will be used to examine possible technologies to use in cleaning up the site, such as the Minimum Additive Waste Stabilization project. The new technology can

CENTRAL SITE SUMMARIES

process low-level waste into glass utilizing a treated soil waste stream as an additive. Preliminary estimates of cost savings through use of this technology at the site indicate that at least \$100 million could be saved compared to grouting. Robot technology is also being used to patrol drum storage facilities. The robot has the capability to detect minute concentrations of radioactive materials on floors and can also read bar codes on the drums to produce ongoing inventory.

Fernald is also investigating the possibility that two types of waste found at the site can be effectively mixed together to form cement, instead of using cement as an additive to stabilize waste. The principal ingredients of cement are ash and lime, both of which are considered waste requiring treatment and safe disposal. A solid can be formed from these two types of waste by adding a small amount of cement. Thus, treatment can be achieved using available resources without purchasing additives. A pump and treat project is underway in an attempt to stop uranium-contaminated ground water from further migration offsite. A wastewater treatment plant currently under construction will significantly reduce uranium contamination. Construction completion is scheduled for August 1994. The Record of Decision on cleanup of the silos will also be signed in 1994.

▼ 1995 Highlights:

- Complete five removal actions.
- Process and dispose of 45,000 drum equivalents of low-level waste, ship 2,000 drum equivalents of mixed waste.
- Issue three final Records of Decision.

Fernald plans to submit two draft Records of Decision, or cleanup plans, for waste pits in 1995. Remedial activities for these projects can then begin. Agreements on three of the five major projects at Fernald will then be signed. Concurrently, Fernald's future land use plan will be prepared and submitted to Headquarters by September 1995. This document will be integrated with cleanup decisions and the negotiation of cleanup standards with the State and Environmental Protection Agency. In 1995, constructing the vitrification treatment facility for the processing of waste from the K-65 silos is planned, as is completing demonstration of the soils decontamination system. The site is requesting a budget of \$294 million to complete these and other environmental management activities. For more information on other sites in Ohio, please see page 49.

Illinois

Illinois has four FUSRAP sites: the **University of Chicago**, the **National Guard Armory** site, **Granite City Steel**, and the **Madison** site. Information on these sites can be found on page 51.

The remedial activities for **Palos Forest Preserve Site A/Plot M** in Cook County, the former Manhattan District site near Chicago, continued in 1993. Plot M was the radioactive waste disposal area located close to Site A. Currently, there is a surveillance and monitoring program in place at the site which analyzes samples for radioactive and hazardous materials and publishes an annual report on these results. As a result of recent findings of spots of

A technician uses a bailer to sample storm water that has collected at three areas containing active and inactive waste management facilities at Argonne National Laboratory.

View of Ames Laboratory's thin film disposition method, one of the many research projects to solve energy-related problems.

radioactivity, a detailed site characterization and some removal actions have been initiated and a fence was installed around Site A in 1993. In 1994, the site will be cleared of heavy undergrowth, and the characterization will begin in the third quarter after extensive planning and preparation has been completed. In 1995, characterization will be completed and removal actions will begin. Cleanup studies and risk assessments will be done concurrently with the removal actions.

The **Fermi National Accelerator Laboratory** explores the fundamental structure of matter using high energy particle accelerators. Major concerns include cleanup of PCB spills; cleanup of possible chromate contamination; and ongoing management of hazardous, radioactive, and toxic waste. There are 15 identified solid waste management units that may require cleanup under the facility's RCRA permit. With an environmental management budget of \$3.0 million in 1993, the Laboratory conducted onsite treatment of 15 transformers containing PCBs at the Laboratory, and submitted a preliminary risk assessment on the spills to the Environmental Protection Agency. It also completed a conceptual design for a new radioactive waste handling facility. In the next two years, the Laboratory will continue PCB spill cleanup activities and will complete the first phase of a Facility Investigation report. It will also complete construction of a new radioactive waste handling facility for the laboratory. The budget request for 1995 is \$5.1 million.

Argonne National Laboratory-East conducts research to support the development of energy-related technologies. These activities generate hazardous and radioactive waste. One major concern is a closed landfill that was formerly used to dispose of solid and hazardous laboratory waste. Several buildings at the laboratory are contaminated with low levels of radiation and are scheduled for decontamination and decommissioning. During 1993, Argonne completed capping of the landfill at the laboratory, began the process for RCRA closure in a low-level radioactive storage area, and continued characterization of several other inactive solid waste management areas with an Environmental Management budget of \$50.4 million. Argonne replaced eight leaking underground storage tanks and upgraded nine others, preventing or reducing the spread of contamination to the ground water. They also removed 16 transformers containing PCBs and about 3,500 dry tons of lime sludge from the water treatment facility.

During 1994, with a budget of \$42.8 million, Argonne plans to complete rehabilitation of the Laboratory's sewer system and complete the removal of the lime sludge from the wastewater treatment plant. Argonne also plans to complete decontamination and decommissioning of part of one of the Laboratory's buildings. In 1995, the Laboratory plans to complete the preliminary risk assessment for the area, and complete removal of control rods and core shroud in an old experimental boiling water reactor. The budget request for 1995 is \$27.6 million.

CENTRAL SITE SUMMARIES

Iowa

Iowa has one site, the **Ames Laboratory**, which occupies several buildings on the Iowa State University campus in Ames. The laboratory conducts research in materials and chemical sciences, and related research in material reliability and nondestructive evaluation. The major environmental concerns are remediation of an inactive chemical waste disposal site at the facility and nine areas that may be contaminated from past activities. Characterization of the nine areas has been completed, and a recommendation was prepared requesting that eight of the nine be released for unrestricted use. During 1993, with an environmental management budget of \$5.7 million, a remedial investigation/feasibility study work plan and risk assessment were completed for the chemical disposal site. Ames has an Environmental Management budget of \$6.1 million for 1994 to conduct several activities including remediation of the inactive chemical disposal site. This site contains about 26,000 cubic feet of contaminated soil. The majority of the contamination is mixed waste; however, low-level waste and hazardous waste are also present. In addition, an underground storage tank is scheduled for removal along with associated soils that were contaminated by the previous tank that had leaked an undetermined amount of diesel fuel. The budget also includes funds for waste management and technology development activities.

Michigan

The **General Motors** site in Michigan is a FUSRAP site. Information on FUSRAP sites is found on page 52.

Missouri

Missouri has four sites managed under the Formerly Utilized Sites Remedial Action Program: the **St. Louis Downtown Site**, **St. Louis Airport Site**, **Vicinity Properties**, and the **Latty Avenue Properties**. Information on these sites is found on page 51.

The **Kansas City Plant** manufactures nonnuclear weapons components involving machining, plastic fabrication, and electrical and mechanical assembly. In 1993, production of nonnuclear components was consolidated from several sites across the Nation to the Kansas City Plant. There are 27 areas at the Plant currently undergoing assessment or remediation. Principal waste management operations at the Kansas City Plant include hazardous and toxic waste storage in preparation for offsite treatment or disposal. There is no onsite disposal at the Plant. During 1993, with an appropriated budget of \$16.9 million, the Plant removed 24,000 tons of soil contaminated with PCBs from the plant site and initiated the second construction phase of a flood protection system. The site completed a solvent elimination project, initiated an environmental assessment for remedial actions, and upgraded the hazardous waste tank farm to prevent releases. The Kansas City Plant completed its Conceptual Site Treatment Plan for mixed waste and reduced its generation of hazardous waste by 60 percent in 1993. Remediation of the

abandoned Indian Creek outfall will be complete in 1994. The Kansas City Plant plans to complete its final site treatment plan in 1995 with part of its \$13.2 million Environmental Management budget.

The Army used the **Weldon Spring** site for a military supply area in the 1940's. In the 1950's and 1960's, the Atomic Energy Commission used the site for processing uranium and thorium, and abandoned the site in 1966. Primary environmental concerns are a 9-acre quarry with 126,600 cubic yards of contaminated soil and rubble and 3 million gallons of radiologically and chemically contaminated water, and contaminated ground water on and offsite. The other primary area is a 217-acre chemical plant site with contaminated waste pits, processing buildings, and contaminated soil and water at offsite vicinity properties.

Weldon Springs before, during, and after cleanup.

CENTRAL SITE SUMMARIES

During 1993, with a budget of \$69.8 million, Weldon Spring completed construction of the quarry water treatment plant, successfully treated 3.2 million gallons of contaminated water, and began the removal of quarry bulk waste. At the chemical plant site, the site water treatment plant was constructed, 4 million gallons of contaminated water were treated, and 13 plant buildings and a water tower were dismantled. An important environmental milestone was reached with the successful completion of the site Remedial Investigation/Feasibility Study-Environmental Impact Statement, which led to the approval of the final Record of Decision in September 1993 for onsite waste disposal. Remedial efforts and studies will continue through 1994, with a budget of \$52.5 million. By 1995, waste quarry bulk waste removal is expected to be completed, the chemical plant building will be dismantled, and construction of the onsite disposal facility will begin. The budget request for 1995 is \$55 million.

Nebraska

The **Hallam Nuclear Power Facility** in Lincoln, Nebraska, was built and operated as a demonstration project by the Atomic Energy Commission between 1962 and 1966. The facility contains entombed components from a thermal sodium-cooled graphite-moderated nuclear reactor. Between 1967 and 1969, the facility was dismantled and placed in a safe storage condition. Hallam's current environmental activities consist of continued surveillance and maintenance to assure that no radioactivity is being released from the facility. Assessment reports detailing the sampling and analysis at the site are published annually.

Ohio

In addition to the Fernald Environmental Management Project, Ohio has 12 sites in various stages of remediation. Six of the sites are under the FUSRAP program. These sites include **B&T Metals, Albacraft, Painesville, Luckey, Baker Brothers**, and **Associated Aircraft**. Information about these sites is found on page 52.

On April 16, 1943, **Battelle Memorial Institute** entered into a contract with the Manhattan Engineering District to perform nuclear research and development activities. Since that time, Battelle Memorial Institute has continuously performed research and development work at its facilities for the Manhattan Engineering District and its successor agencies. The facilities became radioactively contaminated as a result of performance of work. The buildings are privately owned by Battelle, and the facility retains an active Nuclear Regulatory Commission license for radioactive materials. The Battelle Columbus Laboratories Decommissioning Project has been established to decontaminate and decommission Battelle Memorial facilities that became radioactively contaminated as a result of nuclear research. The facilities within the Battelle Columbus project are comprised of 15 buildings

or portions thereof and are located at Battelle Memorial Institute's Battelle Columbus Laboratories King Avenue site in Columbus and the West Jefferson site near West Jefferson, Ohio. To date, four buildings and a portion of another have been decontaminated. The site's 1994 Environmental Management budget is \$22 million. Decontamination activities are currently being conducted in three additional buildings with all buildings scheduled for completion by the year 2000. These buildings will be released for use without radiological restrictions.

Between 1961 and 1988, the Department of Energy contracted with the **RMI Titanium** in Ashtabula to extrude uranium for use in various nuclear applications. The environmental restoration mission at the site is to decontaminate and decommission the site for unrestricted use. Activities for 1994 include disposal of existing contaminated soil piles, equipment decontamination, and site characterization activities. The budget to conduct these activities and others in 1994 is \$10.9 million. RMI Titanium is a Potentially Responsible Party to the **Fields Brook Superfund Site**, which is adjacent to the extrusion plant. The Department of Justice is currently negotiating on behalf of the Department of Energy with the Environmental Protection Agency and RMI Titanium to reach final settlement on the Fields Brook liability.

The **Piqua Nuclear Power Facility** contains entombed nuclear reactor components from a reactor that was built and operated for a demonstration project by the Atomic Energy Commission, a predecessor to the Department of Energy, between 1963 and 1966. The facility was decommissioned and dismantled between 1967 and 1969. Current site activities consist of an environmental monitoring program to ensure that radioisotopes are not migrating from the entombment structure into the surrounding environment. This monitoring is documented in an annual report.

Environmental restoration at the Mound Plant in Miamisburg, Ohio.

The **Mound Plant** is an integrated research, development, and production facility supporting Department of Energy weapons and energy programs. It is located within the city limits of Miamisburg in southwestern Ohio and occupies 306 acres of land. With the consolidation of nonnuclear components production at the Kansas City Plant, production of these components was discontinued at Mound in 1993. Mound's mission changed to focus on environmental cleanup to prepare the site for potential alternative uses. During 1993, with an Environmental Management budget of \$44.5 million, Mound submitted an application to ship contaminated soil generated during decontamination and decommissioning activities to the Nevada Test Site. This approval must be received before Mound can send soil to the Nevada Test Site. In October 1993, Mound submitted its Conceptual Site Treatment Plan for its mixed waste. For 1994, Mound has a budget of \$47.4

CENTRAL SITE SUMMARIES

Cooling towers at the Portsmouth Gaseous Diffusion Plant.

million to conduct several activities including completing a remedial investigation/feasibility study for ground water contaminated with volatile organic compounds resulting from past waste disposal practices. This study is a comprehensive evaluation of the area and identifies the extent of contamination so that the appropriate method of remediation can be determined. Mound also plans to initiate removal of plutonium-contaminated sediments resulting from a break in a waste transfer line. In 1994, two interim cleanup actions are planned. In addition, Mound expects to reorder priorities to transition and economic development efforts. During 1995, the site plans conduct many activities including completing the Record of Decision and commencing cleanup activities for contaminated ground water with its budget request of \$45.0 million.

The **Portsmouth Gaseous Diffusion Plant** separates uranium isotopes to produce enriched uranium used as fuel in commercial nuclear powerplants. Like the Paducah Gaseous Diffusion Plant in Kentucky, Portsmouth was leased in July 1993 to a private enterprise known as the United States Enrichment Corporation, but the Environmental Management program is still responsible for its remediation. Environmental problems at Portsmouth include solvent contamination of the non-potable aquifer beneath the site. The Portsmouth Plant is divided into four quadrants for investigational purposes. During 1993, Portsmouth completed five RCRA closures that returned selected areas to operational service and completed the drainage system and base stabilization for the Classified Materials Disposal Facility RCRA closure project. These and other activities were completed with a budget of \$26.3 million. The initial RCRA Facility Investigation for Quadrant IV was completed. The budget for 1994 increases to \$62.7 million to complete old RCRA closures, complete the RCRA Facility Investigations for Quadrants I and II, begin soil treatment at two sites, and complete characterization studies for accumulated waste. During 1995, Portsmouth plans to complete the corrective measures studies for Quadrants I, III and IV; remove tanks and contaminated soil, as part of the new RCRA closures; and complete the RCRA Facility Investigation. These activities and others will be completed with a budget request of \$62.3 million.

FUSRAP Sites

There are 15 FUSRAP sites and no UMTRA sites in the Central region. The **University of Chicago** and the **National Guard Armory**, both in Illinois, completed environmental management activities prior to 1993.

The Record of Decision is expected to be issued in 1994 for the **St. Louis Site** in Missouri. This site consists of 4 sites: the **St. Louis Downtown Site**, the **St. Louis Airport Sites**, the **St. Louis Airport Vicinity Properties** site, and the **Latty Avenue Properties**.

The **General Motors** site in Adrian, Michigan, plans to begin remediation activities in 1994.

Limited characterization has been conducted at seven sites to determine whether the FUSRAP program will have responsibility for cleanup. These include the **Granite City Steel** and **Madison** sites in Illinois, and the **B&T Metals**, **Albacraft** (formerly Oxford), **Painesville**, **Bakers Brothers**, **Luckey**, and **Associated Aircraft** sites in Ohio. Remedial action planning is underway for the Albacraft site.

Eastern Site Summaries

Environmental management activities are currently taking place in Connecticut, Florida, Kentucky, Maryland, Massachusetts, Mississippi, New Jersey, New York, Pennsylvania, Puerto Rico, South Carolina, and Tennessee. These States make up the Eastern region for the purposes of this report. The major sites in the region are the Oak Ridge Reservation in Tennessee and the Savannah River Site in South Carolina.

Oak Ridge Reservation, Tennessee

The Oak Ridge Reservation consists of three separate sites (see Figure 15), a national laboratory, a manufacturing and developmental engineering plant, and a former gaseous diffusion plant. While each site has distinct missions for the Department, environmental management at the three sites is managed as one program. The Oak Ridge Reservation's total budget, including management of Formerly Utilized Sites Remedial Action Program (FUSRAP) sites nationwide, for 1993 was \$593.9 million. Oak Ridge completed or was on schedule for 79 percent of its compliance agreement milestones in 1993.

The **Oak Ridge National Laboratory** covers approximately 2,900 acres in Melton and Bethel Valleys, 10 miles southwest of the City of Oak Ridge. The Laboratory's mission is to conduct applied research and development in support of the Department's programs in energy technologies and to perform basic research in selected areas of the physical and life sciences. Past research, development, and waste management activities at the Laboratory have produced a number of areas contaminated with low-level and/or hazardous chemical waste that will require remediation.

FIGURE 15. The Oak Ridge Reservation.

In May 1993, the Centers for Environmental Technology and Waste Management officially opened at the K-25 Site. The centers will accelerate the development, demonstration, and commercialization of restoration and waste management technologies for the Department, other Federal agencies, and the commercial sector to help solve the Nation's waste management problems. The centers provide private firms and other partners quick and easy access to the site and many of its unique facilities and laboratories.

The manufacturing and developmental engineering plant, the **Y-12 Plant**, occupies an 811-acre site in the Bear Creek Valley about 2 miles from downtown Oak Ridge. The plant was built in 1943 as part of the Manhattan Project to separate uranium isotopes by an electromagnetic process. When the project was discontinued after World War II, the plant's role changed to manufacturing and developmental engineering. With the end of the Cold War and the manufacture of weapons components, the mission of the plant is being reviewed and revised.

The **K-25 Site** occupies a 1,700-acre area adjacent to the Clinch River, approximately 13 miles west of Oak Ridge. Originally built to enrich uranium, a majority of the 92 buildings on the site are now inactive since production activities ceased in 1987. The site's mission has changed primarily to environmental management. As the focus for waste storage on the Oak Ridge Reservation, the K-25 Site houses the Toxic Substance Control Act Incinerator and the Centers for Environmental Technology and Waste Management.

▼ 1995 Highlights:

- Demonstrate a ceramic waste form for nitrate salts.
- Initiate design and procurement for the Mixed Waste Treatment Facility.
- Conduct well plugging and abandonment at Oak Ridge National Laboratory

Workers at Oak Ridge using the scabbling process to remove contamination from concrete surfaces.

As a result of extensive waste minimization activities, the Oak Ridge Reservation avoided generating significant quantities of waste and saved \$8 million in waste handling costs in 1993. Ninety treatment, storage, and disposal facilities were operated in compliance with State and Federal regulations and 275,000 gallons of wastewater were treated, a waste inventory of 2.1 million cubic feet was maintained, and 1.1 million cubic feet of sanitary waste were disposed. At the incinerator, 3.6 million pounds of mixed waste were incinerated, exceeding the treatment goals under the Land Disposal Restrictions of the Federal Facilities Compliance Agreement. Using private sector resources, 2.2 million pounds of scrap metal were smelted and 1.3 million pounds of low-level waste were treated. Three storage facilities for low-level, mixed, and hazardous waste, and a facility for disposal of low-level waste were constructed.

Oak Ridge completed the removal of 19,000 potentially reactive items from Kerr Hollow Quarry and moved approximately 5,000 cubic feet of debris into pits, at a cost savings of approximately \$16 million. Kerr Hollow Quarry was used for approximately 20-25 years for disposal of reactive waste. Soil removal was started from two plots contaminated with cesium. Eleven site remedial investigation reports were completed and three Record of Decisions were approved.

With a 1994 Environmental Management budget of \$645.9 million, the Oak Ridge Reservation continues to move forward with site characterization and remedial activities, disposition of characterized waste, and technology development. The remedial action at the CSX Railroad Site will be completed and material removal will start at the White Wing Scrap Yard. Construction will be completed on the sanitary/industrial landfill and initiated on the Central Neutralization Facility pipeline extension. Also, 50,000 gallons of liquid low-level waste will be solidified from the Melton Valley Storage Tank Facility and 4 million pounds of mixed waste will be treated at the incinerator. With the help of the private sector, treatment will be initiated on mixed waste sludges from the West End Treatment Facility.

In 1995, the Record of Decision for the cleanup of the East Fork Poplar Creek remedial site will be issued. Construction will be completed on various treatment and storage facilities. Microwave scabbling of contaminated concrete surfaces, an innovative technology that removes surface contamination without the use of hazardous chemicals and with very little dust generation, is also planned for completion in 1995. The 1995 budget request is \$670.9 million.

Savannah River Site, South Carolina

The Defense Waste Processing Facility at the Savannah River Site.

The Savannah River Site, in southcentral South Carolina, produced nuclear materials for national defense on its 325-square mile site. It is one of the Department's biggest environmental management challenges. A total of 657 contaminated buildings have been identified as possible candidates for decontamination and decommissioning. The Environmental Management program is aggressively expanding its role from waste storage and evaporation to waste processing, or vitrification, which is necessary for stabilization of liquid high-level radioactive waste throughout the Savannah River Site in preparation for ultimate disposal in a high-level waste repository. In 1993, 89 percent of the site's \$779 million Environmental Management budget was spent on waste management activities and 8 percent on environmental restoration activities.

Savannah River Site made significant progress in using and developing new technologies for environmental management activities. The site began construction of the Consolidated Incineration Facility, which will burn hazardous and radioactive oils, paints, solids, solvents, rags, clothing, and floor cleaning equipment, as well as benzene-contaminated liquid waste.

During 1993, more than 20,000 pounds of chlorinated organic solvents were removed from soil and ground water using new horizontal well technologies. In addition, Savannah River Site demonstrated the injection of nutrients into the ground to stimulate microorganisms that break down volatile organic compounds and demonstrated real-time characterization technologies, that were jointly developed with the Department of Defense. These technologies greatly reduce the number of wells needed to clean up an area, reduce worker exposure, and improve performance over former methods by a factor of five to one. Savannah River Site has demonstrated high-energy radio-frequency heating at the site to supplement conventional pump and treat technologies through the enhanced removal of contaminants underground. This technology increases the efficiency of removal, greatly reduces exposure to workers, and saves energy.

Savannah River Site signed a cleanup agreement on January 15, 1993, after three years of negotiations with the Environmental Protection Agency's Region IV in Atlanta and the South Carolina Department of Health and Environmental Control. The agreement became effective August 16, 1993, with the establishment of enforceable milestones.

In 1994, Savannah River Site will continue ground-water remediation and site characterization activities at contaminated sites. Immobilization technology and processes have been developed for low-activity fraction of high-level radioactive waste (saltstone) and high-activity fraction of this waste (vitrification). Construction is essentially complete for saltstone and

▼ 1995 Highlights:

- Complete final preparations for starting of the Defense Waste Processing Facility.
- Demonstrate an innovative treatment of mixed waste in a mobile facility.
- Complete construction and initiate operation of vacuum extraction system to remove volatile organic compounds from the vadose zone.

EASTERN SITE SUMMARIES

FIGURE 16. The Savannah River Site is located on the South Carolina and Georgia border.

vitrification facilities. The saltstone facility is operating intermittently to immobilize slightly contaminated liquid effluents. The vitrification facility is undergoing start-up testings and will start radioactive operation in December 1995. A Programmatic Environmental Impact Statement on waste management activities at the site is currently being prepared. The impact statement will provide a site-wide approach to managing all waste generated from ongoing operations, environmental restoration, and decontamination and decommissioning. These activities and others will be completed with a budget request of \$757.4 million in 1994.

Future activities at the Savannah River Site include focusing on the startup of the Defense Waste Processing Facility, which is scheduled to begin operation in December 1995. The site also plans to submit a future land use plan in 1995. Determining options for future use of the site will help establish parameters for the level of cleanup required at contaminated buildings and land areas. The public will be involved in developing the future land use plan. Savannah River Site requests a 1995 budget of \$743.6 million.

Connecticut

The **Seymour Specialty Wire** site is a part of the FUSRAP program. Discussion of the site can be found on page 62.

Florida

Ground-water testing system at the Pinellas Plant in Florida.

The **Pinellas Plant**, located near St. Petersburg, designs, develops, and produces special electronic and mechanical equipment for nuclear weapons. With the consolidation of nonnuclear component production at the Kansas City Plant, production ceased at Pinellas. The site is now focusing on environmental management to prepare the site for alternative uses. Four solid waste management areas require corrective action as a result of past plant activities. During 1993, with a budget of \$9.2 million, Pinellas implemented a comprehensive program to reduce the waste generated at the plant, submitted two corrective measures studies reports, completed one interim corrective measure, and continued action on another. The site completed clean closure of a hazardous waste storage tank. Corrective measures studies will continue in 1994 and 1995 for other identified areas. The budget request for 1995 is \$9.0 million.

The **4.5 Acre Site** is a parcel of property adjacent to the Pinellas Plant. Remediation of the site began in 1990 and is expected to be complete in 1998.

The Pinellas Plant sold 3,605 gallons of waste oil to the **Peak Oil Petroleum Refining Plant** in Largo, Florida, in 1978 and 1979 for recycling beneficial fuel. Peak Oil used a re-refining process to purify used oils and lubrication fluids. Mismanagement of waste oil and hazardous waste resulted in extensive soil and ground-water contamination. Pinellas was consequently identified as a Potentially Responsible Party, thereby making the plant partially responsible for cleanup.

Kentucky

Maxey Flats was a commercial low-level waste burial site used by the Department and other waste generators. It was closed in 1977 because of water management problems. The Department is one of several responsible parties funding ongoing remediation of the site, but is not responsible for management of remedial activities.

EASTERN SITE SUMMARIES

At the **Paducah Gaseous Diffusion Plant** uranium isotopes were separated to produce enriched uranium for fuel in commercial nuclear powerplants. In July 1993, the plant was leased to a private enterprise known as the United States Enrichment Corporation. The Environmental Management program is still responsible for cleaning up the onsite and offsite soil and ground-water contamination, including uranium, PCBs, technetium, and trichloroethylene.

Paducah spent \$25.7 million in 1993 on various environmental restoration activities, including the removal of two 10,000-gallon leaking underground storage tanks, significantly reducing the risk of ground-water contamination. The Department also submitted a draft RCRA Facility Investigation Plan for a contaminated area, completed construction for ground-water monitoring to provide additional characterization of site hydrogeology, and submitted a post-closure plan for the low-level waste landfill. As cleanup activities escalate in 1994, the budget increases to \$53.8 million to begin construction of a storage facility for mixed waste, complete the next phase of the ground-water monitoring system, and submit RCRA Facility Investigation plans for additional contaminated units. The budget request for 1995 is \$65.1 million and includes construction of the mixed waste storage facility and solid waste landfill, and submittal of the draft RCRA Facility Investigation Plan to the Environmental Protection Agency for various sections of the plant.

Maryland

The **W. R. Grace & Company** is the only site in Maryland and is part of the FUSRAP program. Discussion of the site can be found on page 63.

Massachusetts

Massachusetts has three sites managed under the FUSRAP program: **Schpack Landfill**, **Ventron**, and **Chapman Valve**. Discussions of these sites can be found on page 63.

Mississippi

The **Salmon Site** (formerly Tatum Dome) near Hattiesburg was used for underground explosive nuclear experiments. It is privately owned and actively used for timber production and hunting. An Agreement-in-Principle with the State of Mississippi was signed in January 1991. In 1992, a remedial investigation/feasibility study work plan was developed for the site, and in 1993, a health effects study was initiated. Activities were delayed when the landowner refused to sign a lease with the Department in 1993, requesting that the Department purchase the property. Activities will continue through 1995 and beyond.

New Jersey

New Jersey has seven sites. These include **Kellex/Piermont, Maywood Chemical Works, Middlesex Municipal Landfill, New Brunswick Laboratory, Wayne, and Du Pont & Company**, which are managed by the FUSRAP program discussed on page 62.

The **Princeton Plasma Physics Laboratory**, leased to the Department of Energy by Princeton University, conducts magnetic confinement plasma physics research and investigates the practical application of fusion power as an energy source. The principal environmental concerns are the ongoing management of hazardous and radioactive waste, underground storage tank remediation, characterization and remediation of ground water, and planning for the disposal of low-level and mixed waste from dismantling the Tokamak Fusion Test Reactor. In 1993, with a budget of \$3.2 million, the Laboratory installed and sampled ground-water monitoring wells to assess the extent of contamination at the Laboratory and disposed of radioactive and hazardous waste generated by day-to-day operations of the Laboratory.

During 1994, the Laboratory will continue preparing remedial action and alternative analysis work plans for soil and ground water at two areas onsite. Princeton plans to complete modifications to improve the existing hazardous materials storage facility, install a basin liner and oil sensors to prevent releases to the environment, and dispose of radioactive waste generated by operation of the Tokamak Fusion Test Reactor. The Laboratory's Environmental Management budget for 1994 is \$6.6 million for these activities. During 1995, with a requested budget of \$8.1 million, Princeton plans to transport and dispose of hazardous and mixed waste generated from dismantling the Tokamak Fusion Test Reactor.

New York

New York has 13 sites, the majority of which are under the FUSRAP program. These include **Seaway Industrial Park, Ashland 1, Ashland 2, Linde Air Products, Niagara Falls and Vicinity Properties, Bliss and Laughlin Steel, Baker and Williams Warehouse, and Colonie**. These sites are discussed on page 62.

The **West Valley Demonstration Project** is carried out at the former Western New York Nuclear Service Center located in Cattaraugus County. The project is working to demonstrate safe immobilization of liquid high-level radioactive waste using a process called vitrification. The 1993 budget was \$134.9 million. With part of the site's 1994 budget of \$124 million, the vitrification facility building and much of the associated equipment will be completed. The facility will be completed and inspected in 1995, and vitrification will begin in 1996. West Valley is currently reducing the volume of liquid high-level waste by treatment in the integrated radioactive waste treatment system. As a result of this treatment, over 15,000 drums of low-

Fuel receiving and storage area at the West Valley Demonstration Project in New York.

Research at Brookhaven National Laboratory.

level waste solidified in cement have been produced and are being safely stored onsite. The project is also preparing a Draft Environmental Impact Statement for the decontamination and decommissioning of the high-level waste tanks, the facilities used to solidify the waste, materials, and hardware used in the project. The goal is to issue a Final Environmental Impact Statement in 1995 and publish a Record of Decision in 1996. The 1995 President's budget request for West Valley is \$127.2 million.

Brookhaven National Laboratory is a multi-purpose research and development laboratory that directs scientific and technical efforts including low- and high-energy physics, life sciences, and nuclear medicine research. The laboratory is located on Long Island, about 60 miles east of New York City, and occupies about 8.3 square miles of mostly wooded area. Environmental management activities at the site include remediation of an underlying aquifer. During 1993, with a budget of \$15.1 million, the Laboratory submitted appropriate documentation to meet the requirements of the National Environmental Policy Act for the new Waste Management Facility. Design activities are in progress for the new facility. To prevent continued contamination from leaking underground storage tanks, leaking tanks will be removed and other storage tanks upgraded in 1994. The site also plans to analyze data gathered last year and begin field investigation of a landfill to determine the extent of contamination. The Laboratory has requested a 1994 budget of \$26.4 million to complete these projects and will complete upgrades to its waste concentration facility. Once the landfill field investigation is complete, a report will be prepared to evaluate the results of the investigation. This draft report is scheduled to be released in 1995. In addition, a contaminated cesspool at Brookhaven has been characterized and is scheduled to be cleaned up in 1995. The budget request for 1995 is \$23.6 million.

The **Knolls Atomic Power Laboratory** is devoted exclusively to the Naval Nuclear Propulsion Program. Knolls includes three sites. The primary site is in Niskayuna, where the mission is the design and development of improved naval propulsion plants and reactor cores. Knolls also operates four land-based prototypes of shipboard pressurized-water reactor plants at the Kenneth A Kesselring Site in nearby West Milton and one prototype plant at the Windsor Site in Windsor, Connecticut. Knolls also trains officers and enlisted personnel as reactor operators for the nuclear fleet at the prototype sites. The Department used the **Separations Process Research Unit**, a part of Knolls Atomic Power Laboratory, to develop a process for extracting plutonium and uranium from irradiated fuel. Once the process was developed, the operation was transferred to Hanford, Washington. The buildings that make up the research unit must be decontaminated, decommissioned, and eventually removed so that the land can be restored to a condition of unrestricted use. In 1993, activities included preparing an Action Description Memorandum, which recommended conducting an environmental assessment to meet

requirements of the National Environmental Policy Act, and completing a conceptual Decontamination and Decommissioning Plan and associated cost estimates. There is no funding allocated for continued work in 1994 or 1995.

Pennsylvania

Pennsylvania has five sites. Two of these, **Alliquippa Forge** and **Springdale**, are part of the FUSRAP program, and the **Canonsburg** site is managed as part of the UMTRA program. Discussion of these sites can be found on page 62.

At the **Shippingport Atomic Power Station**, the first large-scale powerplant in the world, environmental restoration work is complete, and an annual baseline risk assessment will begin in 1994.

The **Bettis Atomic Power Laboratory** is devoted exclusively to the Naval Nuclear Propulsion Program and includes two sites. Bettis, the primary site, performs research and development on naval nuclear propulsion plants. The Naval Reactors Facility, located within the Idaho National Engineering Laboratory site, operates three prototype naval reactor plants and a facility for examining expended naval reactor cores.

Puerto Rico

The **Center for Energy and Environmental Research** was operated by the University of Puerto Rico under contract to the Department and its predecessors. The Department conducted chemical removal work of unknown substances in 1993. Preliminary site assessments and inspections revealed that the site had minimal contamination and would not be placed on the National Priorities List. In 1994, a newly discovered underground storage tank will be removed. In addition, asbestos and other chemicals, PCB-contaminated transformers, and soils will be removed.

Tennessee

In addition to the **Oak Ridge Reservation**, Tennessee has one FUSRAP site, **Elza Gate**, which is discussed below.

FUSRAP and UMTRA Sites

The UMTRA program manages one site in the Eastern region. Surface remediation activities at the **Canonsburg** site in Pennsylvania were completed prior to 1993. The Nuclear Regulatory Commission is expected to issue the General License in 1994, and the site will be transferred to the Grand Junction Projects Office for long-term surveillance and monitoring.

There are 23 sites in the Eastern Region which the FUSRAP program manages. Environmental management activities have been completed at the **Elza Gate** site in Tennessee, the **Springdale** site in Pennsylvania, the **Niagara Falls Storage and Vicinity Properties** in New York, the **Kellex/Pierpont** and **Middlesex Municipal Landfill** sites in New Jersey, and the **Seymour Specialty Wire** site in Connecticut.

FUSRAP Installations/Sites
California

*University of California**
Connecticut
*Seymour Speciality Wire**

Illinois

*Granite City Steel**
Madison
*National Guard Armory**
*University of Chicago**

Maryland

W. R. Grace & Co

Massachusetts

Chapman Valve
Schpack Landfill
Ventron

Michigan

General Motors

Missouri

Latty Avenue Properties
St. Louis Airport Storage Site
St. Louis Airport Vicinity Properties
St. Louis Downtown Site

New Jersey

Du Pont & Company
*Kellex/Pierpont**
Maywood Chemical Works
*Middlesex Municipal Landfill**
Middlesex Sampling Plant
New Brunswick Laboratory
Wayne/Pequannock

New Mexico

*Acid/Pueblo Canyon**
*Bayo Canyon**
*Chupadera Mesa**

New York

Ashland Oil #1
Ashland Oil #2
B & L Steel
*Baker & Williams Warehouse**
Colonie
Linde Air Products
*Niagara Falls Storage Site**
*Niagara Falls Storage Site Vicinity Property**
Seaway Industrial Park

Ohio

Associated Aircraft Tool & Manufacturing
B & T Metals
Baker Brothers
Luckey
Oxford
Painesville

Oregon

*Albany Metallurgical Research Center**

Pennsylvania

Aliquippa Forge
Springdale

Tennessee

*Elza Gate**

* Completed

The **Bakers and Williams Warehouse** in New York completed environmental management activities in 1993 and plans to complete site verification activities in 1994. Also in 1994, the **Aliquippa Forge** site in Pennsylvania plans to complete remedial activities and conduct site verification activities.

Remediation activities are scheduled to begin in 1995 at the **Seaway Industrial Park, Ashland 1 and 2**, and **Linde Air Products** sites in New York. The Environmental Management program expects to issue the Record of Decision in 1994 and begin construction of the Tonawanda Waste Containment Structure to contain the waste generated during remediation from these sites in 1995.

Limited remedial investigation and characterization has been conducted at the **Du Pont & Company** site in New Jersey, the **W. R. Grace & Company** in Curtis Bay, Maryland, the **Ventron** and **Chapman Valve** sites in Massachusetts, and **Bliss and Laughlin Steel** in New York.

The Environmental Management program is working with other Potentially Responsible Parties at the **Schpack Landfill** near Norton, Massachusetts, to conduct the remedial investigation/feasibility study of the 5-acre site.

In 1993, the Environmental Management program completed chemical characterization studies at the **Middlesex Sampling Plant**, near Middlesex, New Jersey, and replaced a cover on a waste pile to prevent the release of contaminants to the air. Site characterization studies were completed and a public information center was established in 1993 at the **Wayne** site in New Jersey. The Environmental Management program also completed draft plans to implement work and clean up plans, a baseline risk assessment, and remedial investigation. A draft Environmental Impact Statement and Feasibility Study were also submitted to the Environmental Protection Agency. At the **Maywood Chemical Works** site in New Jersey, the implementation plan, remedial investigation report, and the baseline risk assessment were completed in 1993. The site also established a public information center.

The **Colonie** site in New York completed the draft engineering evaluation and cost analysis and the environmental assessment, and disposed of solid waste from the site in 1993. The site plans to publish the engineering evaluation and cost analysis and the environmental assessment in 1994. Activities scheduled for 1995 include completing building decontamination and decommissioning.

In 1997, the Department plans to conduct the engineering evaluation and cost analysis for the **New Brunswick Laboratory** in New Jersey.

Performance and Funding Data

List of Reports

Performance

1. Cost and Schedule Performance for Environmental Management Sites for 1993.	68
2. Explanation for Cost Variances.	71

Milestones

1. Environmental Management Enforceable Milestones for 1989-1995.	73
2. Enforceable Milestones More Than Six Months Overdue.	74

Funding

1. Environmental Management Funding by Program for 1990-1995.	78
2. Environmental Management 1995 Congressional Budget Request for the Ten Highest Funded Sites.	79
3. Environmental Management Funding by Regulatory Requirement.	80
4. Environmental Management Funding by State for Fiscal Year 1995.	81
5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals.	82

Overview

The Federal Government is placing increased emphasis on showing measurable results for the tax dollars it spends. The National Defense Authorization Act for Fiscal Year 1994 requires that the Environmental Management program report on sites that have a cost variance of 15 percent or \$10 million or more and those sites with a schedule variance of six months or more in 1995. The data is being presented now to get suggestions for improving the report for next year. All data in this section has been provided by the Environmental Management Progress Tracking System or the Office of Planning and Resource Management.

Using the Environmental Management Progress Tracking System, 10 of the 137 Environmental Management sites were identified to have cost variances exceeding 15 percent or \$10 million. Performance 2 outlines the reasons for variances at these ten sites. Although the system indicated that there are no sites with schedule variances of more than six months, there are ten sites with enforceable compliance agreement milestones six months or more overdue.

Overall, in 1993 the Environmental Management program met or was on schedule to meet 74.4 percent of the 451 enforceable milestones identified in 93 compliance agreements. At most sites, work plans are developed which include work beyond the enforceable milestones. Some sites stayed close to their projected budget and completed priority work to manage urgent risks and meet enforceable milestones. Other sites went over budget to complete all milestones and work plans. More information on enforceable milestones is presented in Milestone 1 and 2.

Supporting funding information for the Environmental Management program, including detailed site budget information, is presented in the funding section. As stated earlier in this report, the largest part of the Environmental Management program's expenditures has been on waste management and environmental restoration activities, although the requests for both programs have decreased for the last two years. The fastest growing part of the budget is facility transition, under which the Department's sites are stabilized prior to restoration and preparation for alternative uses.

As mentioned previously, budget totals for Hanford include the Hanford site and the Richland Operations Office. The Idaho National Engineering Laboratory includes the Laboratory, the Idaho Chemical Processing Plant, and the Idaho Operations Office. The Oak Ridge Reservation budget includes Oak Ridge National Laboratory, the Y-12 Plant, the K-25 Site, Oak Ridge Associated Universities, the Oak Ridge Operations Office, and funding for the FUSRAP program.

For more information about the Environmental Management program, or more detailed performance and funding data, please call the Center for Environmental Management Information at 1-800-7-EM-DATA (1-800-736-3282).

Performance Data

Cost and Schedule Performance for Environmental Management Sites for 1993

The following table provides details of planned and actual costs and of variances in cost and schedule for Environmental Management sites for 1993. This information enables the reader to determine how well the sites performed. The following definitions will help the reader understand how the program evaluates cost and schedule performance.

Planned cost is the amount of money that a site estimates will be required to perform all of the scheduled activities for a given time period, usually a year.

Accomplished cost is a performance measure that relates the work completed to the planned cost of that work, as opposed to actual cost. It is a calculation or estimation of the dollar value of the work performed. For example, if a site planned to spend \$5 million on a one-year task and estimated at the end of the year that it had completed 80 percent of that \$5 million task, it would have performed \$4 million worth of work, i.e. "accomplished cost" of \$4 million. Accomplished cost minus the planned cost yields the **schedule variance**. A positive number indicates that, compared to the original estimate, work was performed ahead of schedule. A negative number indicates that work performed was behind schedule.

Actual cost is the total amount of dollars spent and costs incurred by the program for work performed. Actual cost subtracted from the accomplished cost yields the **cost variance**. A positive number indicates that the Department paid less than the value of the work performed (more efficient). A negative number indicates that the program paid more than the value of the work performed (less efficient).

The majority of the 42 sites or programs listed below either worked less efficiently than planned (19 sites) or were behind schedule (27 sites), or in some cases both (14 sites). However, of the top ten sites, seven worked efficiently in terms of the value received for money spent. For example, the Savannah River Site spent nine percent less than the value of the work accomplished, while completing 96 percent of its planned work. Hanford's costs were almost exactly equal to the value received, although Hanford was 10 percent behind schedule. Thirteen sites completed all or more of their planned work, and thus were on or ahead of schedule.

This data is presented by magnitude of planned costs, in descending order. Not all sites described in the previous section are listed in this table. Many of the smaller sites report this information through operations offices. The FUSRAP and UMTRA figures reflect totals for the 44 FUSRAP and 24 UMTRA sites nationwide. This data is taken from the Environmental Management Progress Tracking System.

PERFORMANCE 1. Cost and Schedule Performance for Environmental Management Sites for 1993. (Dollars in Thousands)

State	Installation	Planned Cost	Accomplished Cost	Actual Cost	% Accomplished	Cost Variance	Schedule Variance
Washington	Hanford	1,455,317	1,311,606	1,318,273	90%	-6667 (0%)	-14371 (-10%)
South Carolina	Savannah River Site	742,611	709,959	645,114	96%	64845 (9%)	-32652 (-4%)
Tennessee	Oak Ridge Reservation	638,667	583,950	406,123	91%	147827 (23%)	-54717 (-9%)
Ohio	Fernald	375,643	322,572	335,995	86%	-13423 (-4%)	-53071 (-14%)
Idaho	Idaho National Engineering Laboratory	375,010	341,960	344,154	91%	-2194 (-1%)	-33058 (-9%)
Colorado	Rocky Flats Plant	290,538	264,511	232,098	91%	32413 (12%)	-26027 (-9%)
New Mexico	Waste Isolation Pilot Plant	191,714	163,561	147,864	85%	15697 (8%)	-28153 (-15%)
New Mexico	Los Alamos National Laboratory	167,626	146,628	175,003	87%	-28375 (-19%)	-20998 (-13%)
New Mexico	Uranium Mill Tailings Remedial Action Project	139,114	131,887	90,894	95%	40993 (31%)	-7227 (-5%)
New York	West Valley Demonstration Project	116,600	108,700	107,561	93%	1139 (1%)	-7900 (-7%)
California	Lawrence Livermore National Laboratory	90,222	81,063	78,106	90%	2057 (2%)	-9159 (-10%)
New Mexico	Sandia National Laboratory Albuquerque	81,775	74,115	73,780	91%	335 (0%)	-7660 (-9%)
Nevada	Nevada Test Site	75,326	64,967	70,047	86%	-5080 (-7%)	-10359 (-14%)
Missouri	Weldon Spring	60,344	55,369	49,224	92%	6145 (11%)	-4975 (-8%)
Ohio	Pittsburgh Gaseous Diffusion Plant	49,202	33,484	20,295	68%	13189 (39%)	-15718 (-32%)
Ohio	Mound Plant	48,262	38,520	47,725	80%	-9205 (-24%)	-9742 (-20%)
Tennessee	Formerly Utilized Sites Remedial Action Program	47,739	41,933	43,145	88%	-1212 (-3%)	-5806 (-12%)

PERFORMANCE 1. Cost and Schedule Performance for Environmental Management Sites for 1993. (Continued) (Dollars in Thousands)

State	Installation	Planned Cost	Accomplished Cost	Actual Cost	% Accomplished	Cost Variance	Schedule Variance
Illinois	Argonne National Laboratory-East	44,693	49,611	50,647	111%	-1036 (-2%)	4918 (11%)
New Mexico	Albuquerque Operations	35,880	32,518	36,117	91%	-3599 (-11%)	-3362 (-9%)
Kentucky	Paducah Gaseous Diffusion Plant	35,648	23,916	12,465	67%	11451 (48%)	-11732 (-33%)
Colorado	Grand Junction Project Office	33,518	33,295	33,224	99%	-429 (-1%)	-223 (-1%)
Texas	Pantex Plant	33,129	23,918	27,877	72%	-3959 (-17%)	-9211 (-28%)
Ohio	Battelle Columbus Laboratories	26,259	25,394	26,075	97%	-681 (-3%)	-865 (-3%)
New York	Brookhaven National Laboratory	19,716	19,716	19,067	100%	649 (3%)	0 (0%)
Missouri	Kansas City Plant	18,256	26,844	23,293	147%	-3551 (13%)	8588 (47%)
California	Lawrence Berkeley Laboratory	15,949	11,340	12,167	71%	-827 (-7%)	-4609 (-29%)
Illinois	Chicago Operations Office	11,141	11,141	14,937	100%	-3796 (-34%)	0 (0%)
Nevada	Nevada Off-site Locations	10,639	6,946	6,700	65%	246 (4%)	-3693 (-35%)
Florida	Pinellas Plant	7,989	4,423	5,607	55%	-1184 (-27%)	-3566 (-45%)
California	University of California at Davis	7,780	6,940	6,172	89%	768 (11%)	-840 (-11%)
Iowa	Ames Laboratory, Iowa State University	6,433	6,433	5,246	100%	1187 (18%)	0 (0%)
California	Sandia National Laboratory Livermore	6,330	5,666	6,887	90%	-1221 (-22%)	-664 (-10%)
California	Santa Susana Field Laboratory	4,869	10,901	16,060	224%	-5159 (-47%)	6032 (124%)
California	San Francisco Operations Office	4,101	3,615	4,382	88%	-767 (-21%)	-486 (-12%)
California	General Atomics	3,689	3,689	860	100%	2829 (77%)	0 (0%)
New Jersey	Princeton Plasma Physics Laboratory	3,675	3,675	3,343	100%	332 (9%)	0 (0%)

PERFORMANCE AND FUNDING DATA

PERFORMANCE 1. Cost and Schedule Performance for Environmental Management Sites for 1993. (Continued) (Dollars in Thousands)

State	Installation	Planned Cost	Accomplished Cost	Actual Cost	% Accomplished	Cost Variance	Schedule Variance
New Mexico	Inhalation Toxicology Research Institute	2,526	3,614	3,082	143%	532 (15%)	1088 (43%)
California	Stanford Linear Accelerator Center	2,361	3,013	3,014	128%	-1 (0%)	652 (28%)
Idaho	Aerospace Medical Laboratory-Beta	2,000	2,000	2,757	100%	668 (-33%)	-1 (0%)
Illinois	Fermi Laboratory	1,948	1,948	1,865	100%	83 (4%)	0 (0%)
California	Lawrence Livermore National Laboratory	574	375	44	100%	530 (88%)	0 (0%)
California	Lawrence Livermore National Laboratory-Main Site	0	0	80	0%	-80	0 (0%)

PERFORMANCE AND FUNDING DATA

Explanation for Cost Variances

From the list of sites in Performance 1, the Environmental Management program used its Progress Tracking System to identify those with a cost variance of more than 15 percent or \$10 million. For purposes of this report, the program is evaluating performance by site, rather than by project, even though a typical site may have numerous projects. Some of these projects may have spent more than 15 percent or \$10 million above planned costs. To the extent that other projects have performed well, they would tend to offset these overruns. Information on a project by project basis is available by contacting the Environmental Management program.

Listed below are the ten sites which spent more than 15 percent or \$10 million above the planned costs for the work performed, along with an explanation for the overrun. The Progress Tracking System did not identify any sites which were six months or more behind schedule for work planned in 1993.

PERFORMANCE 2. Explanation for Cost Variances. (Dollars in Thousands)

Site/Project	Program	Cost Variance	Reason For Variance
Santa Susana Field Laboratory	Environmental Restoration	-47% (\$5,159)	The area and volume of contamination were significantly larger than originally expected. Additional resources were used to remove all of the contamination.
Pinellas Plant	Environmental Restoration	-43% (\$1,059)	The unplanned testing for contamination of components during remediation of pistol range, the site's inability to ship all planned waste, and planned work costing more than planned were the primary reasons for the cost variance.
	Waste Management	-6% (\$125)	
Sandia National Lab/California	Environmental Restoration	-63% (\$1,399)	The variance can be attributed to an additional risk assessment and formal review of the work plan and the purchase of more geophysical and data management equipment and instrumentation than originally scoped for the pilot study subtask on the Fuel Oil Spill remediation.

PERFORMANCE 2. Explanation for Cost Variances. (Dollars in Thousands)

Site/Project	Program	Cost Variance	Reason For Variance
Los Alamos National Laboratory	Environmental Restoration	-1% (\$588)	Variance was due to greater Voluntary Corrective Actions costs than anticipated. The volume of waste and subsequent waste disposal costs not anticipated were the major drivers for the cost overrun.
	Waste Management	-42% (\$28,602)	Additional work was completed for Headquarters, Hanford, and other sites which was not planned for.
	Environmental Restoration	-4% (\$2,289)	The subcontractor's scope was extended to respond to extensive Environmental Protection Agency comments on the Remedial Investigation Report.
Fernald			The pilot plant project was redesigned and rescope and the Waste Retrieval System was redesigned for the K-65 silos.
			Underestimated costs for implementing procedures in the Radiological Control Manual and new Department of Energy Orders.
	Technology Development	-150% (\$1,194)	A change in scope due to Headquarters guidance to shift priorities caused the variance.
San Francisco Operations Office	Environmental Restoration	(\$1,639)	There was an error in reporting information to the Progress Tracking System. Funds were carried over from 1992 for these programs.
	Technology Development	-3% (\$17)	
Argonne National Laboratory-West	Waste Management	-80% (-\$1,688)	The variance results from planned costs for 1993 not being entered into the Progress Tracking System.

Milestone Data

Environmental Management Enforceable Milestones for 1989-1995

The Environmental Management program is increasing its focus on measuring progress towards long-term waste management and cleanup goals. One measurement of success is the achievement of enforceable milestones, the scheduled activities required by compliance agreements. The majority of Environmental Management milestones deal with the groundwork necessary to accomplish long-term goals. When a project or work task is initiated, milestones are tracked to measure performance. Milestones can measure large projects, or single activities.

Over the past five years, the Environmental Management program has met 87 percent or 784 out of 904 of its enforceable milestones. In 1993, the Environmental Management program met 74.4 percent of its enforceable milestones, a total of 331 out of 451. Milestones were missed because of additional regulatory issues, the discovery of new problems, lack of technology, or inadequate knowledge of the problem when milestones were established. When milestones are missed, regulators can take a variety of actions, including assessment of fines and penalties or injunctions. Environmental Management is responsible for meeting 328 milestones in 1994 and 268 milestones in 1995.

MILESTONES 1. Environmental Management Enforceable Milestones for 1989-1995.

The three major categories of milestones:

Completed- This denotes milestones that are completed, and may include milestones completed on schedule, those that were previously late and finally completed, and also those completed early.

Forecast—This denotes a milestone whose completion date has changed from its original planned date. If an event occurs, or fails to occur, that alters a planned milestone's originally scheduled completion date, it will be denoted as a forecast milestone. The majority of milestones in this category are forecast delayed, although milestones may be forecast to be completed earlier than the planned date.

Planned—This denotes milestones that are estimated for completion on schedule in the given fiscal year, according to planned activities or agreements.

Enforceable Milestones

MILESTONES 2. Enforceable Milestones More Than Six Months Overdue.

Site	1993 Enforceable Milestones (including prior year carryovers)	Total Overdue 1993 Enforceable Milestones (percent of total)	1993 Enforceable Milestones Six Months or More Overdue (percent of overdue)
Los Alamos National Laboratory	57	19 (33%)	8 (42%)
Mound	8	6 (75%)	3 (50%)
Oak Ridge Reservation	46	10 (22%)	2 (20%)
Grand Junction Project Office	3	2 (67%)	1 (50%)
All other sites	189	14 (7%)	0 (0%)

Savannah River Site has 43 overdue enforceable milestones, which represents 52 percent of the site's total. Thirteen are six months or more overdue (30 percent of overdue milestones). The most overdue milestone is nine months delayed because the South Carolina Department of Health and Environmental Control is not expected to approve a Closure Plan until the end of 1994. Of the remaining 12 milestones, eight are overdue because of the failure of regulators, including the State and the Environmental Protection Agency, to review, comment, and/or approve activities in a timely manner. Two additional milestones are delayed due to a regulatory change in scope. The final two milestones are awaiting approval of Resource Conservation and Recovery Act Part B permit applications. The reasons include delays in the regulatory review process, and the inapplicability of one of the milestones.

Los Alamos National Laboratory has 19 overdue enforceable milestones or 33 percent of the total. Eight, or 42 percent, of these milestones are six months or more overdue. Of these eight, three milestones, one of which is almost ten months overdue, involve the TA-40 scrap detonation site closure, which was planned to be completed by December 9, 1992. The completion of this closure and all corresponding milestones have been delayed due to the detection of contamination at

PERFORMANCE AND FUNDING DATA

four different locations at the site. An amended closure plan with a revised schedule has been submitted to the New Mexico Environmental Department. Four of the milestones involve Resource Conservation and Recovery Act Facility Investigation work plans. These milestones cannot be completed until Los Alamos receives comments from the Environmental Protection Agency and the New Mexico Environmental Department. Another milestone relating to the clean closure of a waste oil storage pit will be met upon receipt of a formal letter from the New Mexico Environmental Department removing this area from interim status.

Hanford has five overdue enforceable milestones or 7 percent of the total. Four of these are six months or more overdue. Of these four, two milestones involve the interim stabilization of single-shell tanks. These milestones are 24 months and 12 months overdue due to technical capability problems. These milestones have been rebaselined as a result of the Tri-Party Agreement renegotiation. A third milestone pertaining to tank farm upgrades has been reestablished based on agreements reached in Tri-Party Agreement negotiations. The final milestone is delayed because of a dispute with the Washington Department of Ecology over Hanford's withdrawal of the Part A permit for the Oxide Facility, and will be revised.

The **Mound Site** has six overdue enforceable milestones, or 75 percent of the site's total. Three are more than six months overdue. One milestone relates to a removal action in an area, operable unit three, which is almost 22 months overdue, pending results of the Limited Field Investigation Study. Because of Mound's rebaselining efforts, this milestone is no longer applicable and will likely be deleted. The other two milestones are six and seven months overdue. Both pertain to groundwater remediation of one work area and have been extended by the regulatory agencies. The field work/sampling took longer than anticipated and consequently the required data was unavailable for the Remedial Investigation Report.

Rocky Flats Plant has six overdue enforceable milestones or 16 percent of the total. Three are six months or more overdue. Of these three, two relate to the submittal of position descriptions for hazardous waste personnel under a Resource Conservation and Recovery Act permit. One is more than 21 months overdue. The Colorado Department of Health did not approve a permit modification to eliminate the position description requirements. A new proposal was negotiated with the Colorado Department of Health to address these requirements, and a new permit modification was submitted. The third milestone, almost seven months overdue, involves the bedrock program in operable unit two. Due to an increase in the Interagency Agreement scope and limited 1992 funding, this milestone was missed. A request submitted to the Environmental Protection Agency and Colorado Department of Health to extend the deadline was denied.

There are 10 overdue enforceable milestones, or 22 percent of the total, at the **Oak Ridge Reservation**. Two are six months or more overdue. One of these two milestones is seven months overdue, and involves volume reduction and transfer of waste as part of the Pond Waste Management Project. The milestone was delayed due to the determination that the original technical approach was insufficient to meet the required end result. A subsequent fatality on the project resulted in work stoppage and review of all pertinent health and safety procedures. A revised technical approach has been developed and is currently under review by the State of Tennessee and the Tennessee Department of Environmental Conservation. This project is being rescoped and a new schedule will be negotiated. The other milestone, approximately six months overdue, is driven by the Federal Facility Agreement and involves a remedial design for ponds in the main plant area. The remedial design for the project is the result of a Record of Decision. The site had already produced an interim Record of Decision when required to develop a final Record of Decision. Two lengthy review cycles for the final Record of Decision have delayed completion of the milestone.

All three of the enforceable milestones for the **Inhalation Toxicology Research Institute** are overdue. Two are more than six months overdue. One milestone is 16 months overdue. This milestone involves submission of documentation to Headquarters relating to the hazardous waste shipping moratorium. Resources have been temporarily moved from this milestone to focus on preparation of the Site Treatment Plan required by the Federal Facility Compliance Act. The existing moratorium, however, is not causing any difficulties at the site. The other milestone, which pertains to submission of the Safety Analysis Report for continued storage of transuranic waste, is overdue by 12 months due to reevaluation of the need for onsite storage. The site has only seven drums of transuranic waste onsite, and is working to ship the waste to Los Alamos National Laboratory.

The Monticello Remedial Action Project out of the **Grand Junction Project Office** has two overdue enforceable milestones or 67 percent of the total. One is nine months overdue and pertains to a design submittal for a waste repository. This milestone is delayed pending a final decision regarding a change in remedies from the Alternatives Analysis Review being conducted by the Environmental Protection Agency, State of Utah, and the Department of Energy. Last year the Department and the regulators agreed to abandon the Record of Decision alternative to construct a repository next to Monticello. The site and regulators have agreed to pursue disposal at an existing active uranium mill tailings disposal site, therefore work on the repository design has ceased.

Sandia National Laboratory-Livermore has one enforceable milestone which is 12 months overdue and relates to the assessment and remediation of the Navy Landfill. The Regional Water Quality Control Board has not reviewed the Navy Landfill Solid Wastewater Assessment Test report since the site is of relatively low priority. Additional monitoring wells required by the Board have been installed to address concerns regarding the groundwater flow in the area and a new report has been issued.

Funding Data

Environmental Management Funding by Program for 1990-1995

Reflecting the enormity of the environmental challenges facing the Department of Energy, the Environmental Management 1995 budget request of \$6.3 billion is a full 34 percent of the Department's total budget request. Funding for the program has grown by an average of 29 percent per year since 1990, but the 1995 Environmental Management budget request represents a sharp break with this trend, asking for less than a two percent increase over the 1994 appropriation. As Environmental Management funding levels off, the program will focus on achieving higher productivity and more environmental results through increasing efficiency. The following table provides a program breakout of the Environmental Management 1990-1994 budgets and the 1995 Congressional budget request for the Environmental Management program.

For the past four years and continuing through 1994 and 1995, managing waste across the complex consumes the largest share of the Environmental Management program's budget. Forty-eight percent of the 1995 Environmental Management budget request will be used for waste management, which includes responsibility for the one million cubic meters of radioactive waste in inventory at Department of Energy facilities. While this share of the budget is down from a high of over 60% in earlier years, waste management will continue to be a high priority because of the program's responsibility to manage existing waste as well as the increasing waste volume resulting from weapons dismantlement and disassembly, remediation of facilities, and restoration of contaminated sites. After sharp growth between 1990 and 1993, funding for environmental restoration has also leveled off, but it will continue to be an important part of the Environmental Management program's work as more sites are characterized and remediated. For 1995, the budget request for remediation activities increases 29 percent. Facility transition is the fastest growing part of the Environmental Management budget. This reflects the rapid downsizing of the nuclear weapons complex and the need to stabilize facilities awaiting final decontamination. The majority of facility transition funds are spent at the Rocky Flats Plant, Hanford, and the Idaho National Engineering Laboratory. Budget levels for technology development reflect the need to accelerate research efforts in the waste characterization and remediation technology areas.

The Uranium Enrichment Decontamination and Decommissioning fund was established as a reserve to cover expenses for uranium enrichment facility decontamination and decommissioning, remedial actions, and other activities required by law. The first appropriation from this fund was made in 1994 to implement the required activities.

The Corrective Activities program was established as a limited category of projects designed to correct specific situations in which a facility or installation was out of compliance with applicable environmental laws and regulations. Only those compliance problems requiring immediate resolution were included in this program. The Corrective Activities program is being phased out, but corrective activities will be continued within the Waste Management program.

The Corrective Activities program was established as a limited category of projects designed to correct specific situations in which a facility or installation was out of compliance with applicable environmental laws and regulations. Only those compliance problems requiring immediate resolution were included in this program. As the Corrective Activities program phases out, corrective activities will continue, but within the overall Waste Management program.

FUNDING 1. Environmental Management Funding by Program for 1990-1995.

Program	1990	1991	1992	1993	1994	1995	% of 1995 Budget Request
Environmental Management	1,303,053		2,464,437		3,009,984		46.0%
Defense Program	656,829		1,379,989		1,832,270		27.5%
Energy Efficiency	0		0		671,798		13.3%
Energy Research	183,481		303,442		397,515		6.5%
Nuclear Energy	0		0		286,320		4.6%
Other	13,840		24,749		91,896		1.3%
Environmental Management	104,793		120,574		26,458		.4%
Defense Program	12,140		18,870		19,615		.3%
Total	2,274,136		4,312,061		6,335,856		
	0		(25,162)		(161,090)		
Total	2,274,136		4,286,899		6,174,776

The Environmental Management budget request for 1995 is more than 34 percent of the Department of Energy's total request.

Environmental Management 1995 Congressional Budget Request

Environmental Management activities at the 10 sites below account for 80 percent of the total President's 1995 request for the program. The budget requests for Hanford, the Savannah River Site, the Oak Ridge Reservation, Rocky Flats, and the Idaho National Engineering Laboratory account for more than two-thirds of the total budget request. Waste management activities at these sites account for 94 percent of the budget request for the Waste Management program. The high-level tanks at Hanford, the Savannah River Site, and the spent fuel pits at the Idaho National Engineering Laboratory are among the foremost waste management challenges. At the Waste Isolation Pilot Plant, the Savannah River Site, and the West Valley Demonstration Project, innovative technological solutions to waste treatment and storage problems are being developed and demonstrated.

Environmental restoration activities at these 10 sites account for 61 percent of the total Environmental Restoration program budget request. Major environmental restoration projects include remediation activities at Fernald, Oak Ridge, and Hanford. Facility transition activities conducted at Rocky Flats, Hanford, and Idaho account for 91 percent of the total facility transition budget request.

FUNDING 2. Environmental Management 1995 Congressional Budget Request for the Ten Highest Funded Sites.

Environmental Management Funding by Regulatory Requirement

Approximately two-thirds of the Environmental Management program's 1994 budget and 1995 budget request are needed to meet regulatory requirements. These requirements result from regulatory compliance agreements, court orders, consent decrees, Federal statutes or regulations, and State or local statutes or regulations. These regulations might require the Department of Energy to remediate specific areas at a site; construct waste storage facilities; or perform surveillance, maintenance, and monitoring of effluent discharges.

FUNDING 3. Environmental Management Funding by Regulatory Requirement.

The Environment, Safety and Health drivers include activities required to meet internal Department requirements, regulating operating procedures, and worker safety and health guidelines, including radiological protection. Failure to fully fund an activity can cause safety problems or otherwise result in violation of an internal order or requirement. The category designated percent "Other" includes activities that are not required by either environmental law or internal Environment, Safety and Health requirement but are considered essential to safe and effective site operations. These integral management functions include such activities as non-legally driven decommissioning and decontamination of a surplus facility, "best management practices," research and development of innovative technology to clean up and treat waste in a more timely and cost-effective manner, and pollution prevention.

Environmental Management Funding by State

The States with the highest budget requests for 1995 host the sites in the weapons complex that are the largest or have the most complex problems and/or the most urgent risks. The majority of funds in each State are spent on waste management and environmental restoration activities.

The seven States with the highest funding requests include Washington (Hanford); South Carolina (Savannah River Site); Tennessee (Oak Ridge); Colorado (Rocky Flats, Grand Junction); New Mexico (Los Alamos and the Waste Isolation Pilot Plant); Idaho (Idaho National Engineering Laboratory and Idaho Chemical Processing Plant); and Ohio (Fernald, Mound, and Portsmouth). The requests for sites in these seven States represent almost 90 percent of the total field budget request for 1995.

FUNDING 4. Environmental Management Funding by State for Fiscal Year 1995.

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals.

STATE Site (Operations Office) Program	1995 Congressional Request			1994 Appropriation			1993 Appropriation			1992 Appropriation			1991^ Appropriation			1990^^ Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
WASHINGTON																
Pacific NW Lab (RL) Total	13,164	1,031	12,133	44,045	33,346	10,699	64,633	64,633	0	45,278	45,278	0	23,254	18,084	5,170	17,915
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,176
Waste Management	12,133	0	12,133	10,699	0	10,699	0	0	0	23,693	23,693	0	0	0	0	0
Environmental Restoration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	29,609	29,609	0	64,508	64,508	0	21,585	21,585	0	23,254	18,084	5,170	9,739
Transportation Management	0	0	0	237	237	0	125	125	0	0	0	0	0	0	0	0
Facility Transition	1,031	1,031	0	3,500	3,500	0	0	0	0	0	0	0	N/A			N/A
Hanford (RL) Total	364,624	299,829	64,795	358,609	296,111	62,498	127,276	110,957	16,319	843,141	753,710	89,431	669,456	581,980	87,476	101,023
Corrective Activities	0	0	0	0	0	0	2,455	2,405	50	13,977	10,932	3,045	22,795	22,398	397	10,153
Waste Management	104,657	104,657	0	90,327	90,327	0	103,062	86,793	16,269	810,553	724,167	86,386	634,711	547,632	87,079	90,870
Environmental Restoration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	18,118	18,118	0	15,820	15,820	0	16,424	16,424	0	8,838	8,838	0	0
Transportation Management	0	0	0	7,047	7,047	0	4,239	4,239	0	2,187	2,187	0	3,112	3,112	0	0
Facility Transition	259,967	195,172	64,795	243,117	180,619	62,498	1,700	1,700	0	0	0	0	N/A			N/A
Richland Ops (RL) Total	1,213,844	1,213,844	0	1,087,307	1,087,307	0	1,289,480	1,237,779	51,701	171,953	165,743	6,210	135,900	135,900	0	352,392
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	952,758	952,758	0	869,590	869,590	0	1,112,455	1,061,799	50,656	9,107	9,107	0	0	0	0	330,993
Environmental Restoration	229,700	229,700	0	197,371	197,371	0	175,662	174,617	1,045	161,410	155,200	6,210	135,393	135,393	0	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Technology Development	0	0	0	2,123	2,123	0	1,163	1,163	0	1,436	1,436	0	507	507	0	18,943
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,456
Facility Transition	31,386	31,386	0	18,223	18,223	0	200	200	0	0	0	0	0	0	0	N/A
WASHINGTON TOTALS	0	0	0	0	0	0	2,455	2,405	50	13,977	10,932	3,045	22,795	22,398	397	18,329
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	1,069,548	1,057,415	12,133	970,616	959,917	10,699	1,215,517	1,148,592	56,925	843,353	756,967	86,386	634,711	547,632	87,079	400,459
Environmental Restoration	229,700	229,700	0	197,371	197,371	0	175,662	174,617	1,045	161,410	155,200	6,210	135,393	135,393	0	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Technology Development	0	0	0	49,850	49,850	0	81,491	81,491	0	39,445	39,445	0	32,599	27,429	5,170	21,156
Transportation Management	0	0	0	7,284	7,284	0	4,364	4,364	0	2,187	2,187	0	3,112	3,112	0	0
Facility Transition	292,384	227,589	64,795	264,840	202,342	62,498	1,900	1,900	0	0	0	0	0	0	0	N/A
TOTAL	1,591,632	1,514,704	76,928	1,489,961	1,416,764	73,197	1,481,389	1,413,369	68,020	1,060,372	964,731	95,641	828,610	735,964	92,646	441,330

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995 Congressional Request			1994 Appropriation			1993 Appropriation			1992 Appropriation			1991^ Appropriation			1990^^ Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
SOUTH CAROLINA																
Savannah River Site (SR) Total	743,572	743,272	300	757,402	757,123	27^	779,018	777,306	1,712	550,526	550,301	225	644,564	644,564	0	471,143
Corrective Activities	0	0	0	0	0	0	2,143	2,143	0	174	174	0	48,283	48,283	0	18,400
Waste Management	678,258	678,258	0	644,832	644,832	0	697,454	695,979	1,475	498,715	498,715	0	533,964	533,964	0	371,997
Environmental Restoration	64,800	64,500	300	69,577	69,298	279	62,577	62,340	237	41,834	41,609	225	49,522	49,522	0	65,410
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	42,993	42,993	0	15,844	15,844	0	9,803	9,803	0	12,795	12,795	0	15,336
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	514	514	0	0	0	0	1,000	1,000	0	0	0	0	N/A			N/A
TENNESSEE																
Oak Ridge Assoc. Univ. (OR) Total	1,607	1,607	0	2,035	2,035	0	4,976	4,976	0	3,257	3,257	0	2,875	2,577	298	2,454
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	43	43	0	0
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Environmental Restoration	1,607	1,607	0	522	522	0	2,131	2,131	0	0	0	0	298	0	298	871
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	1,343	1,343	0	2,845	2,845	0	3,257	3,257	0	2,534	2,534	0	1,571
Transportation Management	0	0	0	170	170	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Y-12 (OR) Total	95,979	95,979	0	97,845	97,845	0	108,422	108,422	0	88,955	88,955	0	76,003	76,003	0	76,342
Corrective Activities	0	0	0	600	600	0	1,030	1,030	0	15,777	15,777	0	6,000	6,000	0	1,478
Waste Management	47,079	47,079	0	49,440	49,440	0	55,866	55,866	0	58,805	58,805	0	42,710	42,710	0	47,696
Environmental Restoration	48,900	48,900	0	47,805	47,805	0	51,326	51,326	0	14,373	14,373	0	11,393	11,393	0	27,168
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	15,900	15,900	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	200	200	0	0	0	0	N/A			N/A
Oak Ridge Natl Lab (OR) Total	179,922	79,917	100,005	163,118	53,360	109,758	179,854	88,850	91,004	129,935	92,378	37,557	98,759	79,333	19,426	80,455
Corrective Activities	26,700	0	26,700	19,000	0	19,000	16,400	0	16,400	11,662	4,383	7,279	8,095	0	27,204	12,385
Waste Management	93,538	68,733	24,805	82,119	53,360	28,759	94,447	57,647	36,800	51,337	35,740	15,597	37,264	8,095	10,060	20,973
Environmental Restoration	59,684	11,184	48,500	61,999	0	61,999	67,507	29,703	37,804	66,936	52,255	14,681	53,400	52,129	1,271	35,438
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11,659
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	1,500	1,500	0	0	0	0	N/A			N/A

PERFORMANCE AND FUNDING DATA

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995			1994			1993			1992			1991^			1990^^
	Congressional Request			Appropriation			Appropriation			Appropriation			Appropriation			Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
OR Gas Dif Plant (K-25) (OR) Total	280,623	130,020	150,603	270,248	114,553	155,695	191,590	188,703	2,887	162,709	161,840	869	137,283	137,194	89	73,775
Corrective Activities	0	0	0	0	0	0	554	554	0	1,815	1,815	0	1,232	1,232	0	325
Waste Management	106,335	106,935	0	102,122	102,122	0	94,826	94,826	0	63,180	63,180	0	18,956	18,956	0	21,086
Environmental Restoration	23,085	23,085	0	20,231	12,431	7,800	96,210	93,323	2,887	97,714	96,845	869	117,095	117,006	89	52,364
Uranium Enrichment D&D	150,603	0	150,603	147,895	0	147,895	0	0	0	0	0	0	N/A	0	0	N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Oak Ridge Ops (OR) Total	38,688	31,064	7,624	69,992	59,338	10,654	68,257	66,723	1,534	63,736	62,958	778	38,442	37,687	755	49,644
Corrective Activities	0	0	0	0	0	0	4,075	4,075	0	0	0	0	0	0	0	0
Waste Management	4,400	4,400	0	2,495	2,495	0	1,700	1,700	0	3,306	3,306	0	9,898	9,898	0	0
Environmental Restoration	26,664	26,664	0	15,496	15,496	0	21,143	19,609	1,534	22,774	21,996	778	13,151	12,396	755	24,650
Uranium Enrichment D&D	7,624	0	7,624	10,654	0	10,654	0	0	0	0	0	0	N/A	0	0	N/A
Technology Development	0	0	0	36,307	36,307	0	35,344	35,344	0	33,104	33,104	0	12,222	12,222	0	21,327
Transportation Management	0	0	0	5,040	5,040	0	5,995	5,995	0	4,552	4,552	0	3,171	3,171	0	3,687
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
FUSRAP* (OR) Total	74,100	0	74,100	42,745	0	42,745	40,900	0	40,900	49,000	0	49,000	27,500	0	27,500	0
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Restoration	74,100	0	74,100	42,745	0	42,745	40,900	0	40,900	49,000	0	49,000	27,500	0	27,500	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
UMTRAP** (OR) Total	0	0	0	0	0	0	0	0	0	0	0	0	1,054	0	1,054	N/A
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Environmental Restoration	0	0	0	0	0	0	0	0	0	0	0	0	1,054	0	1,054	N/A
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Isotope Facility (OR) Total	9,780	0	9,780	8,800	0	8,800	0	0	0	0	0	0	N/A	0	0	N/A
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Environmental Restoration	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Facility Transition	9,780	0	9,780	8,800	0	8,800	0	0	0	0	0	0	N/A	0	0	N/A

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995 Congressional Request			1994 Appropriation			1993 Appropriation			1992 Appropriation			1991 [^] Appropriation			1990 ^{^^} Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
Uran/Thorium Reimb. (OR) Total	41,700	0	41,700	40,600	0	40,600	0	0	0	N/A			N/A			N/A
Corrective Activities	0	0	0	0	0	0	0	0	0	N/A			N/A			N/A
Waste Management	0	0	0	0	0	0	0	0	0	N/A			N/A			N/A
Environmental Restoration	0	0	0	0	0	0	0	0	0	N/A			N/A			N/A
Uranium Enrichment D&D	41,700	0	41,700	40,600	0	40,600	0	0	0	N/A			N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	N/A			N/A			N/A
Transportation Management	0	0	0	0	0	0	0	0	0	N/A			N/A			N/A
Facility Transition	0	0	0	0	0	0	0	0	0	N/A			N/A			N/A
TENNESSEE TOTALS																
Corrective Activities	26,700	0	26,700	19,600	600	19,000	22,659	5,659	16,400	29,254	21,975	7,279	15,708	7,275	8,433	14,188
Waste Management	251,952	227,147	24,805	236,176	207,417	28,759	246,839	210,039	36,800	176,628	161,031	15,597	108,828	98,768	10,060	89,767
Environmental Restoration	234,040	111,440	122,600	188,798	76,254	112,544	279,217	196,092	83,125	250,797	185,469	65,328	223,881	192,924	30,967	128,245
Uranium Enrichment D&D	199,927	0	199,927	199,149	0	199,149	0	0	0	0	0	0	0	0	0	N/A
Technology Development	0	0	0	37,650	37,650	0	38,189	38,189	0	36,361	36,361	0	30,656	30,656	0	34,557
Transportation Management	0	0	0	5,210	5,210	0	5,995	5,995	0	4,552	4,552	0	3,171	3,171	0	3,687
Facility Transition	9,780	0	9,780	8,800	0	8,800	1,700	1,700	0	0	0	0	0	0	0	N/A
TOTAL	722,399	338,587	383,812	695,383	327,131	368,252	583,999	457,674	136,325	497,592	409,388	88,204	381,916	332,794	49,460	282,670
COLORADO																
Grand Junction (ID) Total	0	0	0	0	0	0	0	0	0	1,858	1,858	0	12,213	9,958	2,255	36,148
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Restoration	0	0	0	0	0	0	0	0	0	0	0	0	12,213	9,958	2,255	36,078
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	1,858	1,858	0	0	0	0	70
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Grand Junction (AL) Total	36,600	0	36,600	31,745	2,740	29,005	31,960	6,782	25,178	21,546	6,201	15,345	N/A			N/A
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Environmental Restoration	36,600	0	36,600	29,005	0	29,005	27,478	2,300	25,178	21,546	6,201	15,345	N/A			N/A
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	2,740	2,740	0	4,482	4,482	0	0	0	0	N/A			N/A
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A

PERFORMANCE AND FUNDING DATA

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995 Congressional Request			1994 Appropriation			1993 Appropriation			1992 Appropriation			1991^ Appropriation			1990^^ Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
Rocky Flats Plant (RF) Total	639,657	639,657	0	477,156	477,156	0	291,197	291,197	0	181,818	181,818	0	172,983	172,983	0	139,743
Corrective Activities	0	0	0	0	0	0	0	0	0	9,251	9,251	0	1,381	1,381	0	1,807
Waste Management	120,876	120,876	0	110,716	110,716	0	118,130	118,130	0	96,464	96,464	0	92,704	92,704	0	76,268
Environmental Restoration	161,000	161,000	0	147,960	147,960	0	156,462	156,462	0	70,000	70,000	0	68,350	68,350	0	57,997
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	9,117	9,117	0	11,644	11,644	0	6,053	6,053	0	10,548	10,548	0	3,671
Transportation Management	0	0	0	0	0	0	0	0	0	50	50	0	0	0	0	0
Facility Transition	357,781	357,781	0	209,363	209,363	0	4,961	4,961	0	0	0	0	N/A			N/A
UMTRAP - GJPO (ID) Total	0	0	0	0	0	0	0	0	0	0	0	0	30,992	0	30,992	N/A
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Environmental Restoration	0	0	0	0	0	0	0	0	0	0	0	0	30,992	0	30,992	N/A
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
COLORADO TOTALS																
Corrective Activities	0	0	0	0	0	0	0	0	0	9,251	9,251	0	1,381	1,381	0	1,807
Waste Management	120,876	120,876	0	110,716	110,716	0	118,130	118,130	0	96,464	96,464	0	92,704	92,704	0	76,268
Environmental Restoration	197,600	161,000	36,600	176,965	147,960	29,005	183,940	158,762	25,178	91,546	76,201	15,345	111,555	78,308	33,247	94,875
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	11,857	11,857	0	16,126	16,126	0	7,911	7,911	0	10,548	10,548	0	3,741
Transportation Management	0	0	0	0	0	0	0	0	0	50	50	0	0	0	0	0
Facility Transition	357,781	357,781	0	209,363	209,363	0	4,961	4,961	0	0	0	0	N/A			N/A
TOTAL	676,257	639,657	36,600	508,901	479,896	29,005	323,157	297,979	25,178	205,222	189,877	15,345	216,188	182,941	33,247	175,891
NEW MEXICO																
Albuquerque Ops (AL) Total	43,842	43,842	0	41,257	41,257	0	34,867	34,867	0	21,807	21,807	0	41,098	41,098	0	83,597
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	19,789	19,789	0	17,957	17,957	0	13,945	13,945	0	10,530	10,530	0	5,535	5,535	0	3,25
Environmental Restoration	24,053	24,053	0	8,837	8,837	0	9,864	9,864	0	8,475	8,475	0	10,550	10,550	0	65,320
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	14,413	14,413	0	10,858	10,858	0	2,802	2,802	0	24,310	24,310	0	17,952
Transportation Management	0	0	0	50	50	0	0	0	0	0	0	0	703	703	0	0
Facility Transition	0	0	0	0	0	0	200	200	0	0	0	0	N/A			N/A

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995			1994			1993			1992			1991^			1990^^
	Congressional Request			Appropriation			Appropriation			Appropriation			Appropriation			Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
Inhalation Tox (AL) Total	2,739	0	2,739	3,450	0	3,450	2,969	0	2,969	3,959	0	3,959	311	0	311	1,425
Corrective Activities	0	0	0	0	0	0	0	0	0	103	0	103	80	0	80	809
Waste Management	675	0	675	496	0	496	587	0	587	993	0	993	166	0	166	434
Environmental Restoration	2,064	0	2,064	2,954	0	2,954	2,382	0	2,382	2,863	0	2,863	65	0	65	182
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Los Alamos Natl Lab (AL) Total	179,957	177,457	2,500	185,057	182,633	2,424	172,892	170,761	2,131	120,531	117,026	3,505	82,066	82,066	0	47,948
Corrective Activities	0	0	0	2,000	2,000	0	10,768	10,768	0	13,450	9,945	3,505	12,746	12,746	0	7,701
Waste Management	80,657	80,657	0	81,507	81,507	0	75,426	75,426	0	48,037	48,037	0	32,160	32,160	0	11,068
Environmental Restoration	99,300	96,800	2,500	87,478	85,054	2,424	67,937	65,806	2,131	44,437	44,437	0	21,553	21,553	0	25,637
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Technology Development	0	0	0	13,897	13,897	0	17,061	17,061	0	14,607	14,607	0	15,281	15,281	0	3,542
Transportation Management	0	0	0	175	175	0	50	50	0	0	0	0	326	326	0	0
Facility Transition	0	0	0	0	0	0	1,650	1,650	0	0	0	0	N/A	0	0	N/A
Sandia Natl Lab (AL) Total	51,898	51,898	0	73,031	73,031	0	73,744	73,744	0	58,498	58,498	0	37,669	37,669	0	16,273
Corrective Activities	0	0	0	0	0	0	2,651	2,651	0	3,308	3,308	0	20	20	0	2,118
Waste Management	17,398	17,398	0	16,285	16,285	0	16,326	16,326	0	16,281	16,281	0	9,137	9,137	0	6,038
Environmental Restoration	34,500	34,500	0	30,407	30,407	0	23,013	23,013	0	11,774	11,774	0	6,020	6,020	0	3,721
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Technology Development	0	0	0	21,484	21,484	0	24,782	24,782	0	19,435	19,435	0	17,351	17,351	0	4,396
Transportation Management	0	0	0	4,855	4,855	0	6,972	6,972	0	7,700	7,700	0	5,141	5,141	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
UMTRA - S (AL) Total	93,900	0	93,900	97,103	0	97,103	134,730	0	134,730	139,900	0	139,900	86,233	0	86,233	N/A
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Environmental Restoration	93,900	0	93,900	97,103	0	97,103	134,730	0	134,730	139,900	0	139,900	86,233	0	86,233	N/A
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
UMTRA - G (AL) Total	7,000	0	7,000	7,000	0	7,000	4,600	0	4,600	2,000	0	2,000	990	0	990	N/A
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Environmental Restoration	7,000	0	7,000	7,000	0	7,000	4,600	0	4,600	2,000	0	2,000	990	0	990	N/A
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A

PERFORMANCE AND FUNDING DATA

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995 Congressional Request			1994 Appropriation			1993 Appropriation			1992 Appropriation			1991^ Appropriation			1990^^ Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
WIPP (AL) Total	184,633	184,633	0	185,284	185,284	0	150,716	150,716	0	140,963	140,963	0	164,008	164,008	0	104,605
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	184,633	184,633	0	185,284	185,284	0	150,716	150,716	0	140,963	140,963	0	164,008	164,008	0	104,605
Environmental Restoration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
NEW MEXICO TOTALS																
Corrective Activities	0	0	0	2,000	2,000	0	13,419	13,419	0	16,061	13,253	3,608	12,846	12,766	80	10,628
Waste Management	303,152	302,477	675	301,529	301,033	496	257,000	256,413	587	216,804	215,811	993	211,806	210,840	166	122,470
Environmental Restoration	260,817	155,353	105,464	230,779	124,298	109,481	242,526	98,683	143,843	209,449	64,686	144,763	125,411	38,123	87,288	94,860
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	0			N/A
Technology Development	0	0	0	49,794	49,794	0	52,701	52,701	0	36,844	36,844	0	56,942	56,942	0	25,898
Transportation Management	0	0	0	5,080	5,080	0	7,022	7,022	0	7,700	7,700	0	6,170	6,170	0	0
Facility Transition	0	0	0	0	0	0	1,850	1,850	0	0	0	0	0			N/A
TOTAL	563,969	457,830	106,139	582,182	482,205	109,977	574,518	430,088	144,430	487,658	338,294	149,364	412,375	324,841	87,534	253,848
IDAHO																
Idaho Chem Process (ID) Total	217,179	217,179	0	215,079	215,079	0	165,909	165,909	0	99,225	99,225	0	101,636	101,636	0	39,786
Corrective Activities	0	0	0	0	0	0	0	0	0	7,000	7,000	0	4,550	4,550	0	3,751
Waste Management	125,647	125,647	0	127,505	127,505	0	160,193	160,193	0	89,647	89,647	0	92,623	92,623	0	36,035
Environmental Restoration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	4,326	4,326	0	5,416	5,416	0	2,578	2,578	0	4,463	4,463	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	91,532	91,532	0	83,248	83,248	0	300	300	0	0	0	0	N/A			N/A
Idaho Natl Eng. Lab (ID) Total	175,232	169,756	5,476	193,576	186,106	7,470	207,044	204,324	2,720	149,220	149,220	0	221,617	220,844	773	145,764
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	9,428	9,428	0	4,210
Waste Management	121,523	116,047	5,476	125,156	117,686	7,470	188,916	186,196	2,720	132,593	132,593	0	132,171	132,171	0	61,040
Environmental Restoration	0	0	0	0	0	0	0	0	0	0	0	0	50,408	50,125	283	45,638
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	24,752	24,752	0	17,983	17,983	0	16,627	16,627	0	29,496	29,006	490	34,876
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	114	114	0	0
Facility Transition	53,709	53,709	0	43,668	43,668	0	145	145	0	0	0	0	N/A			N/A

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995 Congressional Request			1994 Appropriation			1993 Appropriation			1992 Appropriation			1991^ Appropriation			1990^^ Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
Idaho Ops (ID) Total	104,593	104,593	0	103,878	103,878	0	110,890	110,890	0	72,578	64,458	8,120	4,720	4,720	0	28,421
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	13,993	13,993	0	13,525	13,525	0	21,126	21,126	0	6,500	0	6,500	0	0	0	22,759
Environmental Restoration	90,600	90,600	0	84,707	84,707	0	83,746	83,746	0	61,768	60,149	1,620	0	0	0	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	5,646	5,646	0	6,018	6,018	0	4,309	4,309	0	4,720	4,720	0	5,662
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
ANL West (CH) Total	4,610	0	4,610	4,438	315	4,123	6,214	2,364	3,850	4,408	629	3,779	3,068	267	2,801	12,616
Corrective Activities	0	0	0	0	0	0	247	0	247	529	0	529	603	0	603	687
Waste Management	3,410	0	3,410	3,248	315	2,933	5,080	2,319	2,761	2,368	0	2,368	1,331	0	1,331	916
Environmental Restoration	1,200	0	1,200	1,190	0	1,190	887	45	842	1,511	629	882	1,134	267	867	384
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10,424
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	205
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
IDAHO TOTALS																
Corrective Activities	0	0	0	0	0	0	247	0	247	7,529	7,000	529	14,581	13,978	603	8,648
Waste Management	294,573	256,687	8,886	289,414	259,031	10,403	375,315	369,834	5,481	231,188	222,240	8,968	226,125	224,794	1,331	97,991
Environmental Restoration	91,880	90,600	1,200	85,897	84,707	1,190	84,633	83,791	842	63,280	60,778	2,502	51,542	50,392	1,150	46,822
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	34,724	34,724	0	29,417	29,417	0	23,514	23,514	0	38,679	38,189	490	50,962
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	114	114	0	205
Facility Transition	145,241	145,241	0	126,916	126,916	0	445	445	0	0	0	0	N/A			N/A
TOTAL	581,614	491,528	10,086	516,971	505,378	11,593	488,857	483,487	6,570	325,431	313,532	11,899	331,041	327,467	3,574	226,587
OHIO																
Fernald Total	294,194	294,194	0	304,449	304,449	0	293,892	293,892	0	214,293	214,293	0	263,628	263,628	0	84,424
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	48,464	48,464	0	10,186
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	33,682	33,682	0	32,285
Environmental Restoration	294,194	294,194	0	302,000	302,000	0	291,820	291,820	0	211,402	211,402	0	179,186	179,186	0	41,953
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	2,449	2,449	0	2,072	2,072	0	2,891	2,891	0	2,296	2,296	0	N/A
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A

06 **FUNDING 5.** Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995			1994			1993			1992			1991^			1990^^
	Congressional Request			Appropriation			Appropriation			Appropriation			Appropriation			Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
Mound Plant (AL) Total	45,021	43,285	1,736	47,376	46,727	649	44,457	43,211	1,246	42,217	40,807	1,410	30,682	30,682	0	19,058
Corrective Activities	0	0	0	0	0	0	0	0	0	41	41	0	1,755	1,755	0	2,700
Waste Management	12,127	12,127	0	12,018	12,018	0	9,130	9,130	0	7,300	7,300	0	4,680	4,680	0	4,897
Environmental Restoration	32,545	30,809	1,736	35,358	34,709	649	34,127	32,881	1,246	34,876	33,466	1,410	24,247	24,247	0	11,451
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	349	349	0	0	0	0	1,200	1,200	0	0	0	0	N/A			N/A
Battelle Columbus (CH) Total	19,900	1,800	18,100	21,983	3,852	18,131	24,580	4,704	19,876	20,947	13,484	7,463	12,621	6,812	5,809	1,777
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Restoration	19,900	1,800	18,100	21,983	3,852	18,131	24,580	4,704	19,876	20,947	13,484	7,463	12,621	6,812	5,809	1,777
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Portsmouth GDP (OR) Total	62,293	13,193	49,100	62,692	14,871	47,821	26,316	26,316	0	28,852	28,852	0	0	0	0	0
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Restoration	13,193	13,193	0	14,871	14,871	0	26,316	26,316	0	28,852	28,852	0	0	0	0	0
Uranium Enrichment D&D	49,100	0	49,100	47,821	0	47,821	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
RMI (CH) Total	11,306	11,306	0	10,924	10,924	0	11,297	11,297	0	N/A			N/A			N/A
Corrective Activities	0	0	0	0	0	0	0	0	0	N/A			N/A			N/A
Waste Management	0	0	0	0	0	0	0	0	0	N/A			N/A			N/A
Environmental Restoration	11,306	11,306	0	10,924	10,924	0	11,297	11,297	0	N/A			N/A			N/A
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	N/A			N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	N/A			N/A			N/A
Transportation Management	0	0	0	0	0	0	0	0	0	N/A			N/A			N/A
Facility Transition	0	0	0	0	0	0	0	0	0	N/A			N/A			N/A
OHIO TOTALS																
Corrective Activities	0	0	0	0	0	0	0	0	0	41	41	0	50,219	50,219	0	2,700
Waste Management	12,127	12,127	0	12,018	12,018	0	9,130	9,130	0	7,300	7,300	0	38,362	38,362	0	4,897
Environmental Restoration	371,138	351,302	19,836	385,132	366,356	18,780	388,140	367,018	21,122	296,077	287,204	8,873	216,054	210,245	5,809	13,228
Uranium Enrichment D&D	49,100	0	49,100	47,821	0	47,821	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	2,449	2,449	0	2,072	2,072	0	2,891	2,891	0	2,296	2,296	0	10
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	349	349	0	0	0	0	1,200	1,200	0	0	0	0	N/A			N/A
TOTAL	432,714	363,778	68,936	447,424	380,823	66,601	400,542	379,420	21,122	306,309	297,436	8,873	306,931	301,122	5,809	105,259

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995			1994			1993			1992			1991^			1990^^
	Congressional Request			Appropriation			Appropriation			Appropriation			Appropriation			Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
NEW YORK																
Brookhaven Natl Lab (CH) Total	23,602	0	23,602	26,449	2,353	24,096	15,097	2,525	12,572	14,468	2,199	12,269	15,093	2,443	12,650	8,607
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	2,004	0	2,004	703
Waste Management	11,202	0	11,202	12,195	0	12,195	6,934	0	6,934	6,855	0	6,855	4,238	730	3,508	2,288
Environmental Restoration	12,400	0	12,400	11,901	0	11,901	5,638	0	5,638	5,414	0	5,414	7,181	43	7,138	4,114
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	2,353	2,353	0	2,525	2,525	0	2,199	2,199	0	1,670	1,670	0	1,502
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
UMTRAP - BNL (CH) Total	0	0	0	0	0	0	0	0	0	0	0	0	300	0	300	N/A
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Environmental Restoration	0	0	0	0	0	0	0	0	0	0	0	0	300	0	300	N/A
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
West Valley Demo Project (ID) Total	127,247	0	127,247	124,000	0	124,000	134,882	0	134,882	104,000	0	104,000	79,072	0	79,072	86,881
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	127,247	0	127,247	124,000	0	124,000	134,882	0	134,882	104,000	0	104,000	79,072	0	79,072	86,881
Environmental Restoration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
NEW YORK TOTALS																
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	2,004	0	2,004	703
Waste Management	138,449	0	138,449	136,195	0	136,195	141,816	0	141,816	110,855	0	110,855	83,310	730	82,580	87,908
Environmental Restoration	12,400	0	12,400	11,901	0	11,901	5,638	0	5,638	5,414	0	5,414	7,481	43	7,438	4,114
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	2,353	2,353	0	2,525	2,525	0	2,199	2,199	0	1,670	1,670	0	1,502
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
TOTAL	150,849	0	150,849	150,449	2,353	148,096	149,979	2,525	147,454	118,468	2,199	116,269	94,465	2,443	92,022	95,488

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995			1994			1993			1992			1991^			1990^^
	Congressional Request			Appropriation			Appropriation			Appropriation			Appropriation			Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
CALIFORNIA																
SNL - Livermore (AL) Total	6,561	6,561	0	5,667	5,667	0	5,814	5,814	0	6,606	6,606	0	3,344	3,344	0	6,961
Corrective Activities	0	0	0	0	0	0	0	0	0	755	755	0	280	280	0	217
Waste Management	2,261	2,261	0	2,216	2,216	0	2,234	2,234	0	1,522	1,522	0	1,200	1,200	0	2,266
Environmental Restoration	4,300	4,300	0	3,451	3,451	0	3,580	3,580	0	4,329	4,329	0	1,864	1,864	0	173
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,305
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
General Atomics (SF) Total	3,000	0	3,000	3,000	0	3,000	1,549	0	1,549	1,291	0	1,291	0	0	0	0
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Restoration	3,000	0	3,000	3,000	0	3,000	1,549	0	1,549	1,291	0	1,291	0	0	0	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
General Electric (SF) Total	400	0	400	491	0	491	0	0	0	536	0	536	0	0	0	0
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Restoration	400	0	400	491	0	491	0	0	0	536	0	536	0	0	0	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Lawrence Berkeley Lab (SF) Total	14,698	0	14,698	20,452	1,850	18,602	10,367	1,031	9,336	14,269	405	13,864	6,133	0	6,133	2,972
Corrective Activities	0	0	0	0	0	0	0	0	0	4,180	0	4,180	2,015	0	2,015	100
Waste Management	10,340	0	10,340	14,516	0	14,516	6,383	0	6,383	8,167	0	8,167	0	0	0	2,307
Environmental Restoration	4,358	0	4,358	4,086	0	4,086	2,953	0	2,953	1,537	0	1,537	4,118	0	4,118	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	1,850	1,850	0	1,031	1,031	0	405	405	0	0	0	0	565
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995			1994			1993			1992			1991^			1990^^
	Congressional Request			Appropriation			Appropriation			Appropriation			Appropriation			Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
Lawrence Livermore (SF) Total	80,171	80,171	0	89,518	89,518	0	107,648	107,648	0	77,803	77,803	0	52,748	52,748	0	33,829
Corrective Activities	1,012	1,012	0	4,058	4,058	0	15,700	15,700	0	15,955	15,955	0	255	255	0	1,123
Waste Management	50,259	50,259	0	49,508	49,508	0	42,030	42,030	0	21,089	21,089	0	16,153	16,153	0	9,963
Environmental Restoration	28,900	28,900	0	27,676	27,676	0	30,996	30,996	0	25,024	25,024	0	21,113	21,113	0	17,445
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	8,276	8,276	0	18,922	18,922	0	15,735	15,735	0	15,227	15,227	0	5,298
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Energy Tech Eng. Center (SF) Total	9,180	1,200	7,980	6,507	1,042	5,465	10,602	2,725	7,877	13,646	3,082	10,564	10,828	4,304	6,524	4,707
Corrective Activities	0	0	0	0	0	0	0	0	0	25	0	25	3,087	0	3,087	0
Waste Management	4,380	0	4,380	2,170	0	2,170	1,397	200	1,197	781	0	781	1,135	0	1,135	0
Environmental Restoration	4,800	1,200	3,600	4,287	992	3,295	8,840	2,160	6,680	12,650	2,892	9,758	6,606	4,304	2,302	4,707
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	50	50	0	365	365	0	190	190	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Stanford Linear AC (SF) Total	6,589	0	6,589	5,690	0	5,690	2,967	0	2,967	1,578	0	1,578	275	0	275	685
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	153
Waste Management	5,289	0	5,289	4,465	0	4,465	2,453	0	2,453	998	0	998	275	0	275	483
Environmental Restoration	1,300	0	1,300	1,225	0	1,225	514	0	514	580	0	580	0	0	0	49
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
San Francisco Ops (SF) Total	10,775	10,275	500	9,644	9,644	0	8,058	7,798	260	5,751	5,395	356	3,718	3,718	0	7,196
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,417
Waste Management	8,161	7,661	500	7,286	7,286	0	5,157	5,157	0	3,990	3,990	0	1,500	1,500	0	0
Environmental Restoration	2,100	2,100	0	2,068	2,068	0	1,236	976	260	1,399	1,043	356	1,300	1,300	0	859
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	290	290	0	865	865	0	362	362	0	918	918	0	920
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	514	514	0	0	0	0	800	800	0	0	0	0	N/A			N/A
U.C. Davis (SF) Total	7,842	0	7,842	7,658	0	7,658	6,207	0	6,207	5,890	0	5,890	1,107	0	1,107	1,481
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Restoration	7,842	0	7,842	7,658	0	7,658	6,207	0	6,207	5,890	0	5,890	1,107	0	1,107	1,481
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A

PERFORMANCE AND FUNDING DATA

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995 Congressional Request			1994 Appropriation			1993 Appropriation			1992 Appropriation			1991^ Appropriation			1990^^ Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
CALIFORNIA TOTALS																
Corrective Activities	1,012	1,012	0	4,058	4,058	0	15,700	15,700	0	20,915	16,710	4,205	5,637	535	5,102	7,010
Waste Management	80,690	60,181	20,509	80,161	59,010	21,151	59,654	49,621	10,033	36,547	26,601	9,946	20,263	18,853	1,410	15,019
Environmental Restoration	57,000	36,500	20,500	53,942	34,187	19,755	55,875	37,712	18,163	53,236	33,288	19,948	36,108	28,581	7,527	24,714
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	10,466	10,466	0	21,183	21,183	0	16,692	16,692	0	16,145	16,145	0	6,783
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,305
Facility Transition	514	514	0	0	0	0	800	800	0	0	0	0	N/A			N/A
TOTAL	139,216	98,207	41,009	148,627	107,721	40,906	153,212	125,016	28,196	127,390	93,291	34,099	78,153	64,114	14,039	57,831
MISSOURI																
ANL - Weldon (CH) Total	0	0	0	0	0	0	1,400	0	1,400	2,314	0	2,314	1,930	0	1,930	N/A
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Environmental Restoration	0	0	0	0	0	0	1,400	0	1,400	2,314	0	2,314	1,930	0	1,930	N/A
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Kansas City Plant (AL) Total	13,192	13,192	0	14,060	14,060	0	16,895	16,895	0	27,528	27,528	0	17,359	17,359	0	12,047
Corrective Activities	0	0	0	0	0	0	2,791	2,791	0	4,140	4,140	0	5,549	5,549	0	4,172
Waste Management	8,345	8,345	0	7,105	7,105	0	6,529	6,529	0	7,326	7,326	0	4,785	4,785	0	4,661
Environmental Restoration	4,847	4,847	0	6,739	6,739	0	7,381	7,381	0	14,867	14,867	0	5,115	5,115	0	2,684
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	216	216	0	194	194	0	1,195	1,195	0	1,910	1,910	0	530
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Weldon (OR) Total	55,000	0	55,000	52,513	0	52,513	69,782	0	69,782	43,068	0	43,068	25,402	0	25,402	9,837
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Restoration	55,000	0	55,000	52,513	0	52,513	69,782	0	69,782	43,068	0	43,068	25,402	0	25,402	9,837
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995 Congressional Request			1994 Appropriation			1993 Appropriation			1992 Appropriation			1991 [^] Appropriation			1990 ^{^^} Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
MISSOURI TOTALS																
Corrective Activities	0	0	0	0	0	0	2,791	2,791	0	4,140	4,140	0	5,549	5,549	0	4,172
Waste Management	8,345	8,345	0	7,105	7,105	0	6,529	6,529	0	7,326	7,326	0	4,785	4,785	0	4,661
Environmental Restoration	59,847	4,847	55,000	59,252	6,739	52,513	78,563	7,381	71,182	60,249	14,867	45,382	32,447	5,115	27,332	12,521
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	216	216	0	194	194	0	1,195	1,195	0	1,910	1,910	0	530
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
TOTAL	68,192	13,192	55,000	66,573	14,060	52,513	88,077	16,895	71,182	72,910	27,528	45,382	44,691	17,359	27,332	21,884
NEVADA																
Nevada Off-Site (NV) Total	N/A			N/A			N/A			N/A			0	0	0	3,094
Corrective Activities	N/A			N/A			N/A			N/A			0	0	0	N/A
Waste Management	N/A			N/A			N/A			N/A			0	0	0	246
Environmental Restoration	N/A			N/A			N/A			N/A			0	0	0	135
Uranium Enrichment D&D	N/A			N/A			N/A			N/A			N/A			N/A
Technology Development	N/A			N/A			N/A			N/A			0	0	0	2,663
Transportation Management	N/A			N/A			N/A			N/A			0	0	0	50
Facility Transition	N/A			N/A			N/A			N/A			N/A			N/A
Nevada Test Site (NV) Total	23,147	23,147	0	17,985	17,985	0	20,732	20,732	0	13,703	13,703	0	N/A			12,993
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	N/A			1,737
Waste Management	23,147	23,147	0	17,955	17,955	0	20,732	20,732	0	13,703	13,703	0	N/A			3,315
Environmental Restoration	0	0	0	0	0	0	0	0	0	0	0	0	N/A			7,941
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	N/A			0
Transportation Management	0	0	0	30	30	0	0	0	0	0	0	0	N/A			0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Nevada Ops (NV) Total	42,178	42,178	0	42,624	42,624	0	49,946	49,946	0	34,394	34,394	0	29,062	29,062	0	2,739
Corrective Activities	0	0	0	0	0	0	0	0	0	1,910	1,910	0	836	836	0	0
Waste Management	1,678	1,678	0	950	950	0	725	725	0	0	0	0	8,606	8,606	0	2,739
Environmental Restoration	40,500	40,500	0	36,099	36,099	0	42,029	42,029	0	24,649	24,649	0	13,991	13,991	0	N/A
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	5,575	5,575	0	7,158	7,158	0	7,687	7,687	0	5,379	5,379	0	N/A
Transportation Management	0	0	0	0	0	0	34	34	0	148	148	0	250	250	0	N/A
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
NEVADA TOTALS																
Corrective Activities	0	0	0	0	0	0	0	0	0	1,910	1,910	0	836	836	0	1,737
Waste Management	24,825	24,825	0	18,905	18,905	0	21,457	21,457	0	13,703	13,703	0	8,606	8,606	0	3,561
Environmental Restoration	40,500	40,500	0	36,099	36,099	0	42,029	42,029	0	24,649	24,649	0	13,991	13,991	0	8,076
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	5,575	5,575	0	7,158	7,158	0	7,687	7,687	0	5,379	5,379	0	2,663
Transportation Management	0	0	0	30	30	0	34	34	0	148	148	0	250	250	0	50
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
TOTAL	65,325	65,325	0	60,609	60,609	0	70,678	70,678	0	48,097	48,097	0	29,062	29,062	0	18,826

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995 Congressional Request			1994 Appropriation			1993 Appropriation			1992 Appropriation			1991^ Appropriation			1990^^ Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
KENTUCKY																
Paducah GDP (OR) Total	65,137	12,837	52,300	53,801	14,451	39,350	25,691	25,691	0	7,683	7,683	0	0	0	0	0
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Restoration	12,837	12,837	0	14,451	14,451	0	25,691	25,691	0	7,683	7,683	0	0	0	0	0
Uranium Enrichment D&D	52,300	0	52,300	39,350	0	39,350	0	0	0	0	0	0	N/A	0	0	N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
TEXAS																
Pantex Plant (AL) Total	45,576	45,576	0	35,708	35,708	0	41,006	41,006	0	26,207	26,207	0	19,664	19,664	0	5,354
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	500	500	0	3,171
Waste Management	17,560	17,560	0	16,099	16,099	0	16,392	16,392	0	16,023	16,023	0	9,200	9,200	0	1,981
Environmental Restoration	28,016	28,016	0	19,609	19,609	0	24,614	24,614	0	10,184	10,184	0	9,964	9,964	0	202
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
ILLINOIS																
ANL - East (CH) Total	27,631	246	27,385	42,781	15,503	27,278	50,421	19,656	30,765	35,963	12,337	23,626	29,420	8,868	20,552	19,578
Corrective Activities	0	0	0	800	0	800	2,002	0	2,002	8,235	0	8,235	7,447	0	7,447	2,168
Waste Management	16,431	246	16,185	16,032	300	15,732	22,940	7,593	15,347	11,758	1,135	10,623	8,745	4,255	4,490	9,916
Environmental Restoration	11,200	0	11,200	10,746	0	10,746	13,416	0	13,416	4,768	0	4,768	9,724	1,109	8,615	7,494
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Technology Development	0	0	0	14,783	14,783	0	11,706	11,706	0	10,782	10,782	0	3,216	3,216	0	0
Transportation Management	0	0	0	420	420	0	357	357	0	420	420	0	288	288	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
FUSRAP - ANL (CH) Total	0	0	0	0	0	0	0	0	0	0	0	0	1,700	0	1,700	0
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Restoration	0	0	0	0	0	0	0	0	0	0	0	0	1,700	0	1,700	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	N/A

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995			1994			1993			1992			1991^			1990^^
	Congressional Request			Appropriation			Appropriation			Appropriation			Appropriation			Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
Chicago Ops (CH) Total	6,907	3,964	2,943	14,980	12,778	2,202	13,519	10,663	2,856	11,852	7,016	4,836	8,001	6,989	1,012	2,243
Corrective Activities	0	0	0	0	0	0	0	0	0	425	0	425	0	0	0	359
Waste Management	2,607	2,364	243	2,246	1,960	286	1,559	1,272	287	4,285	610	3,675	711	0	711	132
Environmental Restoration	4,300	1,600	2,700	2,999	1,083	1,916	5,081	2,512	2,569	2,183	1,447	736	4,756	4,455	301	1,427
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	9,335	9,335	0	5,744	5,744	0	3,949	3,949	0	2,534	2,534	0	325
Transportation Management	0	0	0	400	400	0	1,135	1,135	0	1,010	1,010	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
FERMILAB (CH) Total	5,120	0	5,120	3,620	0	3,620	3,006	0	3,006	1,641	0	1,641	1,695	0	1,695	1,199
Corrective Activities	0	0	0	0	0	0	501	0	501	117	0	117	512	0	512	331
Waste Management	5,120	0	5,120	3,620	0	3,620	2,505	0	2,505	1,524	0	1,524	1,183	0	1,183	868
Environmental Restoration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
ILLINOIS TOTALS																
Corrective Activities	0	0	0	800	0	800	2,503	0	2,503	8,777	0	8,777	7,959	0	7,959	2,858
Waste Management	24,158	2,610	21,548	21,898	2,260	19,638	27,804	8,865	18,139	17,567	1,745	15,822	10,839	4,255	6,384	10,916
Environmental Restoration	15,500	1,600	13,900	13,745	1,083	12,662	18,497	2,512	15,985	6,951	1,447	5,504	16,180	5,564	10,616	8,921
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Technology Development	0	0	0	24,118	24,118	0	17,450	17,450	0	14,731	14,731	0	5,750	5,750	0	325
Transportation Management	0	0	0	820	820	0	1,492	1,492	0	1,430	1,430	0	288	288	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	39,658	4,210	35,448	61,381	28,281	33,100	66,946	30,319	36,627	49,456	19,353	30,103	40,816	15,857	24,959	23,020
FLORIDA																
Pinellas Plant (AL) Total	9,006	9,006	0	11,142	11,142	0	9,208	9,208	0	4,603	4,603	0	4,744	4,744	0	2,993
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	256
Waste Management	2,782	2,782	0	2,569	2,569	0	2,163	2,163	0	1,751	1,751	0	1,558	1,558	0	1,704
Environmental Restoration	5,875	5,875	0	8,573	8,573	0	6,245	6,245	0	2,852	2,852	0	3,186	3,186	0	1,033
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	349	349	0	0	0	0	800	800	0	0	0	0	N/A			N/A

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals (Continued)

STATE Site (Operations Office) Program	1995			1994			1993			1992			1991^			1990^^
	Congressional Request			Appropriation			Appropriation			Appropriation			Appropriation			Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
NEW JERSEY																
Princeton Plasma (CH) Total	8,089	0	8,089	6,567	0	6,567	3,204	0	3,204	2,011	0	2,011	615	150	465	721
Corrective Activities	0	0	0	0	0	0	0	0	0	422	0	422	0	0	0	0
Waste Management	8,089	0	8,089	6,567	0	6,567	3,204	0	3,204	1,589	0	1,589	615	150	465	721
Environmental Restoration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
IOWA																
Ames Lab (CH) Total	2,070	1,400	670	6,085	5,415	670	5,708	5,119	589	5,666	4,951	715	2,944	2,871	73	782
Corrective Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Management	670	0	670	670	0	670	410	0	410	205	0	205	86	13	73	77
Environmental Restoration	1,400	1,400	0	405	405	0	666	487	179	817	307	510	230	230	0	0
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	0	0	0	5,010	5,010	0	4,632	4,632	0	4,644	4,644	0	2,628	2,628	0	705
Transportation Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Transition	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
HEADQUARTERS																
Corrective Activities	0	0	0	0	0	0	0	0	0	7,323	7,323	0	0	0	0	0
Waste Management	154,592	142,755	11,837	174,494	162,422	12,072	141,427	139,644	1,783	188,499	182,845	5,654	74,458	66,194	8,264	23,078
Environmental Restoration	243,864	236,499	7,365	276,770	268,637	8,133	177,755	160,453	17,302	93,561	87,432	6,129	69,467	64,260	5,207	10,359
Uranium Enrichment D&D	0	0	0	0	0	0	0	0	0	0	0	0	N/A			N/A
Technology Development	426,409	426,409	0	120,460	120,460	0	73,218	73,218	0	99,525	99,525	0	17,963	17,963	0	11,795
Transportation Management	20,684	20,684	0	1,191	1,191	0	793	793	0	2,803	2,803	0	2,086	2,086	0	1,437
Facility Transition	64,520	64,520	0	61,879	61,879	0	3,205	3,205	0	0	0	0	N/A			N/A
Program Direction	84,948	84,948	0	91,896	91,896	0	50,800	50,800	0	24,749	24,749	0	32,306	32,306	0	13,840
EM SUBTOTAL	6,820,292	5,774,924	1,045,368	6,335,856	5,335,545	1,000,311	5,703,587	4,993,893	709,694	4,312,061	3,702,148	609,913	3,633,059	3,188,766	444,293	2,274,136
Corrective Activities	27,712	1,012	26,700	26,458	6,658	19,800	61,317	42,117	19,200	120,574	92,709	27,865	187,960	163,720	24,240	104,793
Waste Management	3,160,646	2,913,045	247,601	3,009,984	2,763,334	246,650	3,339,441	3,052,788	286,653	2,464,437	2,208,522	255,915	2,059,220	1,861,408	197,812	1,303,053
Environmental Restoration	1,927,134	1,531,969	395,165	1,832,270	1,456,027	376,243	1,852,268	1,448,427	403,841	1,379,989	1,053,856	326,133	1,102,422	885,841	216,581	656,829
Uranium Enrichment D&D	301,327	0	301,327	286,320	0	286,320	0	0	0	0	0	0	0	0	0	0
Technology Development	426,409	426,409	0	397,515	397,515	0	362,200	362,200	0	303,442	303,442	0	235,960	230,300	5,660	183,481
Transportation Management	20,684	20,684	0	19,615	19,615	0	19,700	19,700	0	18,870	18,870	0	15,191	15,191	0	12,140
Facility Transition	871,432	796,857	74,575	671,798	600,500	71,298	17,861	17,861	0	0	0	0	0	0	0	0
Program Direction (HQ)	84,948	84,948	0	91,896	91,896	0	50,800	50,800	0	24,749	24,749	0	32,306	32,306	0	13,840

FUNDING 5. Environmental Management Funding by State, Site, and Program in Descending Order by State Budget Request Totals. (Continued)

STATE Site (Operations Office) Program	1995 Congressional Request			1994 Appropriation			1993 Appropriation			1992 Appropriation			1991^ Appropriation			1990^^ Appropriation
	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL	DEFENSE	NON-DEF	TOTAL
Use of Prior Year Balances	(240,300)	(240,300)	0	(161,090)	(153,690)	(7,400)	(183,260)	(165,646)	(17,614)	(25,162)	(21,476)	(3,686)	(32,380)	(28,914)	(3,466)	0
Productivity Savings	(299,700)	(299,700)	0	N/A			N/A			N/A			N/A			N/A
Waste Management	(160,800)	0														
Environmental Restoration	(133,900)	0														
Facility Transition	(5,000)	0														
EM TOTAL	6,280,292			6,174,766			5,520,327			4,286,899			3,601,017			2,274,136
Corrective Activities	27,712															
Waste Management	2,999,846															
Environmental Restoration	1,793,234															
Uranium Enrichment D&D	301,327															
Technology Development	426,409															
Transportation Management	20,684															
Facility Transition	866,432															
Program Direction (HQ)	84,948															

^ The Uranium Enrichment Decontamination and Decommissioning Fund and the Facility Transition Program were not initiated until FY 1992.

^^ FY1990 appropriation does not include a Defense/Non-Defense breakdown.

* The Formerly Utilized Sites Remedial Action Project represents 44 sites in 14 States.

** The Uranium Mill Tailings Remedial Action Project represents Environmental Restoration activities at 24 sites and approximately 5,000 vicinity properties in ten States.

**DATE
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4/28/94

END