

Yucca Mountain Site Characterization

Department of Energy Program

Program: Civilian Radioactive Waste Management
Office: Yucca Mountain Site Characterization
Element: Yucca Mountain Site Characterization
B&R Code: DB0102

Laboratory Complex

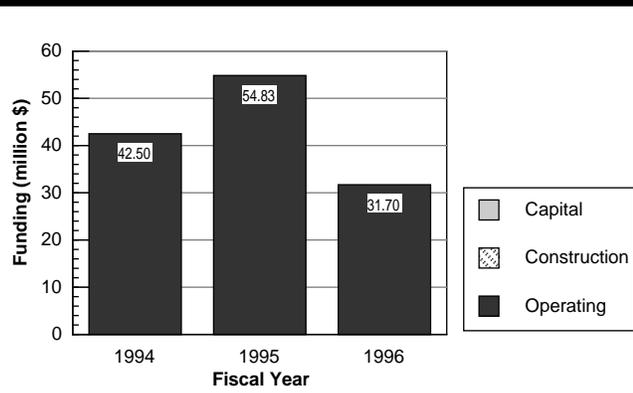
Principal Laboratories: LANL, LLNL, SNL
Contributing Laboratories: None
Participating Laboratories: LBNL, PNNL

Mission Activity Description

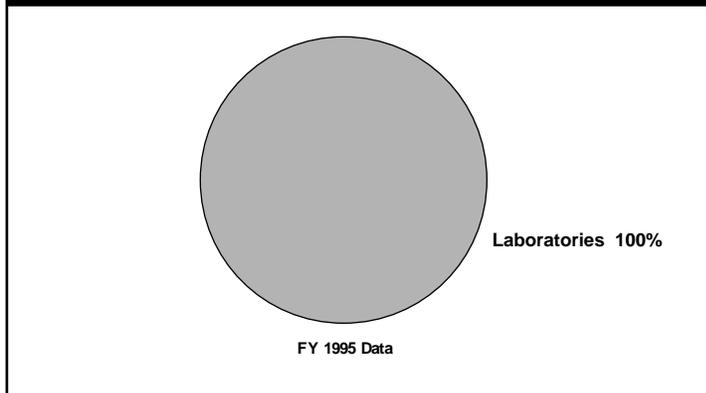
The Nuclear Waste Policy Amendments Act (NWPAA) of 1987 designated the Yucca Mountain Site for detailed investigation activities in order to evaluate its suitability to host a permanent geologic repository.

The mission of the Yucca Mountain Site Characterization activity is to determine the suitability of the Yucca Mountain Site as a permanent repository for the Nation's spent nuclear fuel and high-level defense nuclear waste; complete activities for presidential recommendation and license application submitted, and prepare an Environmental Impact Statement. Major activities include underground excavation and tunneling related to the construction of the Exploratory Studies Facility (ESF), and well as underground testing in the ESF. Laboratory testing and design focus on activities that are necessary to support DOE decisions on the site suitability, site recommendation, and submittal of the license application.

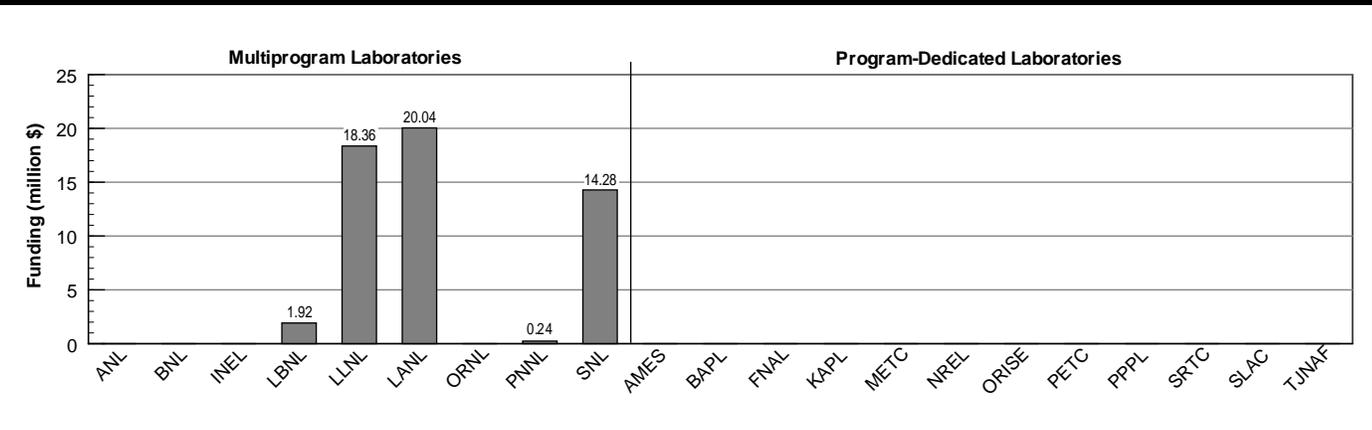
Funding History



Laboratory-Academia-Industry Participation



Fiscal Year 1995 Funding Profile



Waste Acceptance, Storage, and Transportation

Department of Energy Program

Program: Civilian Radioactive Waste Management
Office: Civilian Radioactive Waste Management
Element: Waste Acceptance, Storage, and Transportation
B&R Code: DB03

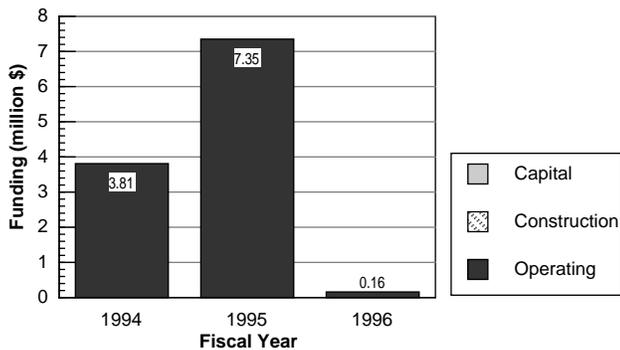
Laboratory Complex

Principal Laboratory: SNL
Contributing Laboratories: None
Participating Laboratories: ANL, LLNL, ORNL

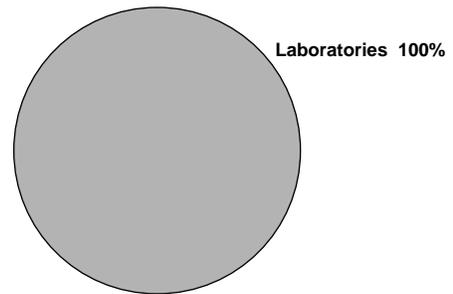
Mission Activity Description

The mission of the Waste Acceptance, Storage, and Transportation activity is to perform the long-lead-time requirements that precede near-term removal of spent nuclear fuel (SNF) from reactor sites once a Federal facility becomes available. This includes market-driven initiative to create the national transportation capability necessary to remove SNF by preparing contingency plans to award contractors to the private sector for canister, transport cask and storage module production, and waste acceptance and transportation services.

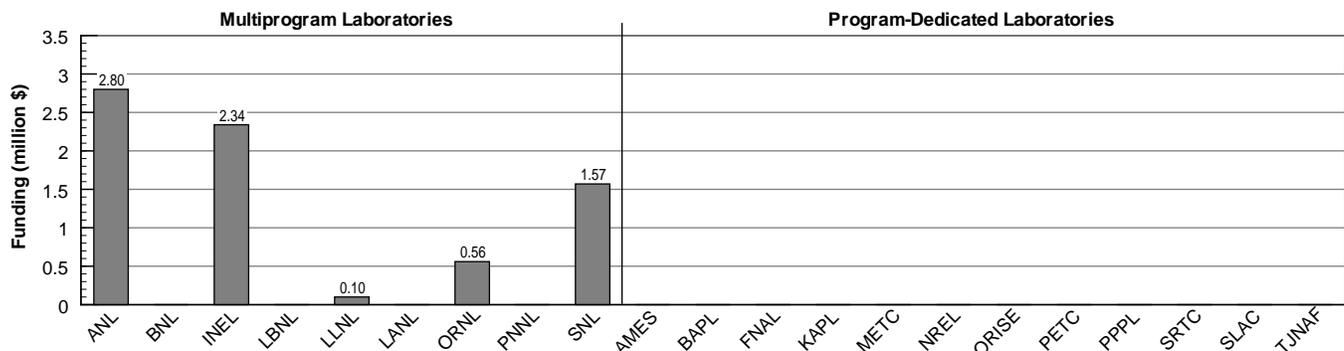
Funding History



Laboratory-Academia-Industry Participation



Fiscal Year 1995 Funding Profile



Radioactive Waste Technical Program Support

Department of Energy Program

Program: Civilian Radioactive Waste Management
Office: Civilian Radioactive Waste Management
Element: Program Support
B&R Code: DB09

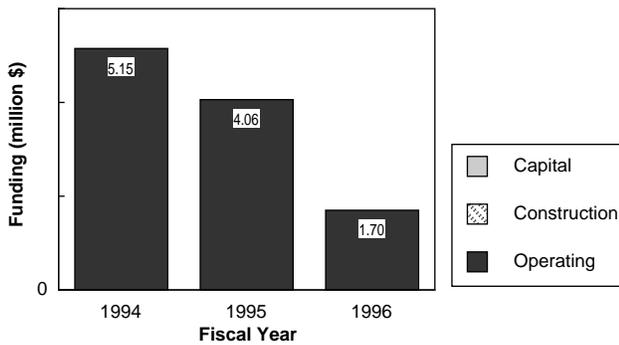
Laboratory Complex

Principal Laboratories: LBNL, LLNL
Contributing Laboratories: LANL, ORISE
Participating Laboratories: SNL

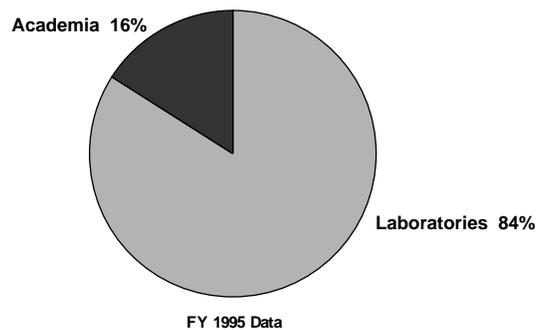
Mission Activity Description

The mission of Program Support in the Office of Civilian Radioactive Waste Management is to ensure the development of an integrated waste management system by facilitating integrated policy, programmatic, and resource decisions; communicating program policy and decisions; monitoring program performance, and ensuring implementation of federally mandated requirements for Nuclear Quality Assurance (QA) related to radiological health, safety and waste isolation.

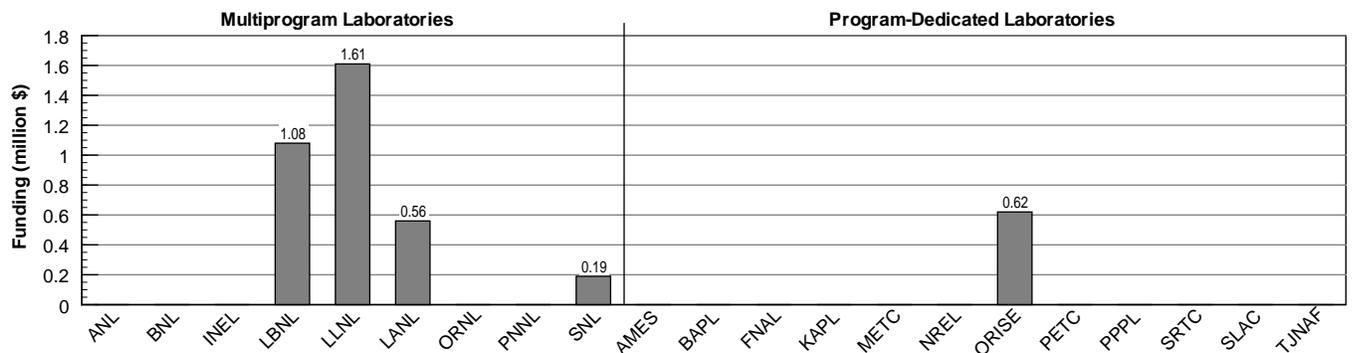
Funding History



Laboratory-Academia-Industry Participation



Fiscal Year 1995 Funding Profile



Spent Fuel Research and Development

Department of Energy Program

Program: Civilian Radioactive Waste Management
Office: Civilian Radioactive Waste Management
Element: Spent Fuel Research and Development
B&R Code: DC10

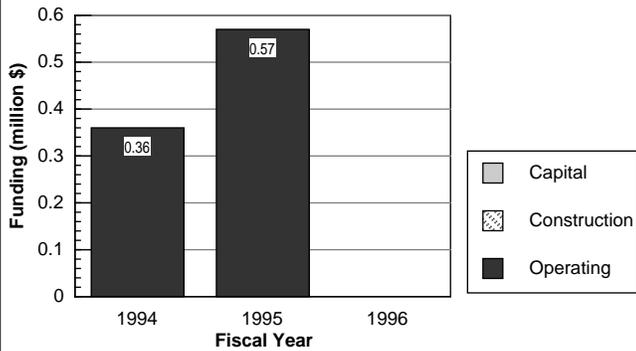
Laboratory Complex

Principal Laboratories: INEL, PNNL
Contributing Laboratories: None
Participating Laboratories: None

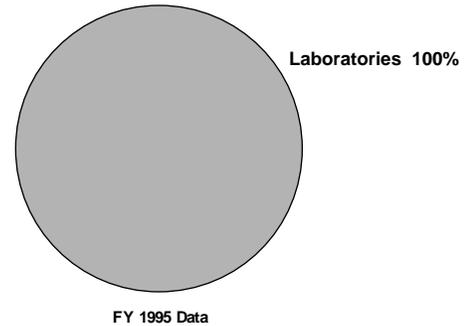
Mission Activity Description

The Spent Fuel Research and Development activity supports generic research and development (R&D) on alternative spent fuel storage technologies to enhance at-reactor storage capacity.

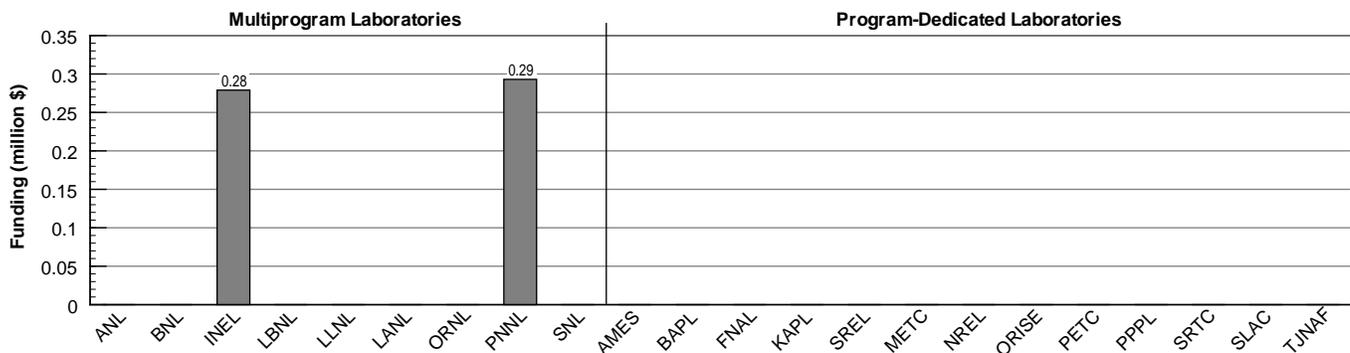
Funding History



Laboratory-Academia-Industry Participation



Fiscal Year 1995 Funding Profile



Environmental Science and Technology Development

Department of Energy Program

Program: Environmental Management
Office: Technology Development
Element: Research and Development
B&R Code: EW40

Laboratory Complex

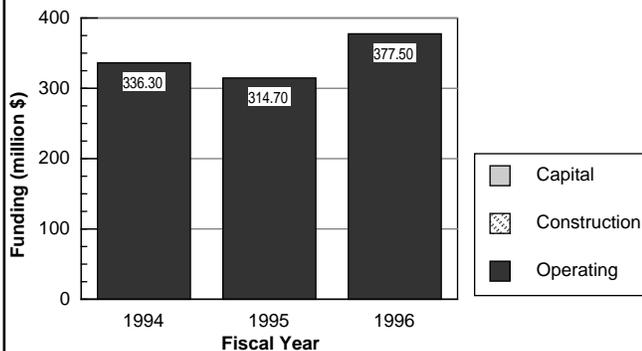
Principal Laboratory: INEL, PNNL, METC, SRTC
Contributing Laboratories: ORNL, SNL
Participating Laboratories: Ames, ANL, BNL, LANL, LBNL, LLNL, PETC
 Note: As designated by the Program Office

Mission Activity Description

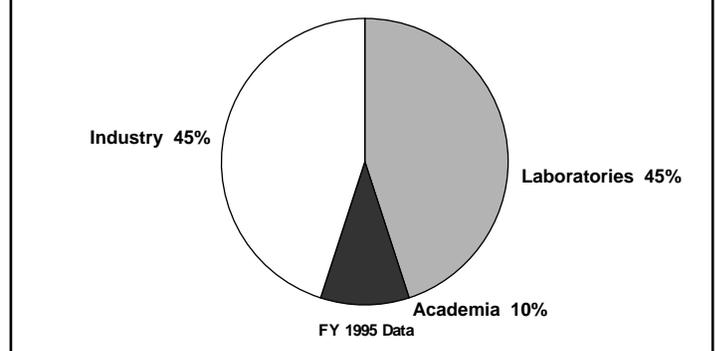
This activity focuses research and development on DOE's major environmental management issues, involving the best talent in DOE and in the national (public and private) science and engineering communities. Tasks involve development, demonstration, testing and evaluation of new technologies that are designed to meet critical DOE needs for alternative waste remediation methods, lower life-cycle waste remediation costs, and reduced risks to workers, local populations, and the environment. Focus areas are constructed around the major EM problem areas:

- Landfill Stabilization**—To address the migration and remediation challenges posed by DOE landfills;
 - Contaminant Plume Containment**—To address uncontained hazardous and radioactive contaminants in soil and groundwater;
 - Mixed Waste Characterization, Treatment, and Disposal**—To manage hazardous, low-level and transuranic radioactivity contamination;
 - High Level Waste Tank Remediation**—To address the large quantity of storage tanks containing over 100 million gallons of radioactive waste;
 - Decontamination and Decommissioning**—To transition, decommission, deactivate, and dispose of aging/contaminated DOE weapons complex facilities.
- The following crosscutting tasks support all focus areas:
- Efficient Separations**—To develop technologies to extract radionuclides to reduce waste volume, saving in disposition costs;
 - Characterization, Monitoring, and Sensors**—To develop systems to accurately characterize, monitor, and analyze wastes;
 - Robotics**—To reduce worker risk by way of remotely controlled robotic systems;
 - Technology Integration**—To involve external entities (sites, users, public, tribes, regulators, private industry, universities) in innovative technical solutions.

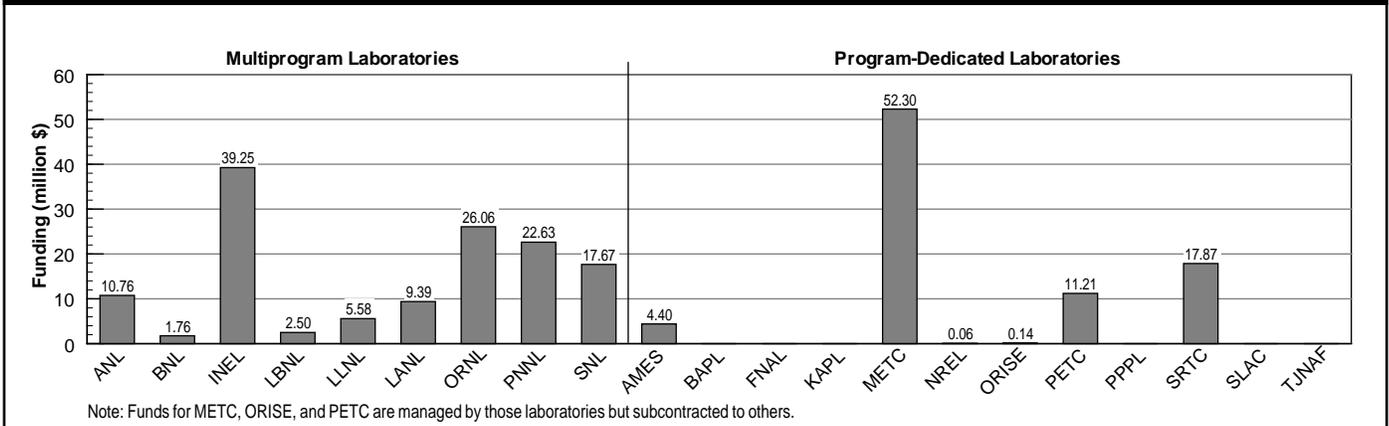
Funding History



Laboratory-Academia-Industry Participation



Fiscal Year 1995 Funding Profile



Note: Funds for METC, ORISE, and PETC are managed by those laboratories but subcontracted to others.

Waste Management Technology Development

Department of Energy Program

Program: Environmental Management
Office: Waste Management
Element: Research and Development
B&R Code: EW31

Laboratory Complex

Principal Laboratory: PNNL
Contributing Laboratories: INEL, LLNL
Participating Laboratories: ANL, LANL, ORNL, SRTC

Mission Activity Description

The Waste Management Program has strategic and tactical technology development needs that are outside the EM Office of Science and Technology's funding capabilities and mission. Waste Management technology development activities are primarily directed toward satisfying compliance agreements and regulatory requirements. Technology development activities are typically site, waste process, and waste operations specific. This activity focuses on six areas:

Base Program—Responsible for maintaining a safe storage configuration and acceptable short term risks for all wastes.

High Level Waste Program Area—Responsible for treatment and disposal of approximately 400,000 m³ of HLW (the base program is responsible for storage). The national strategy is to solidify all high level waste for disposal in a geologic repository.

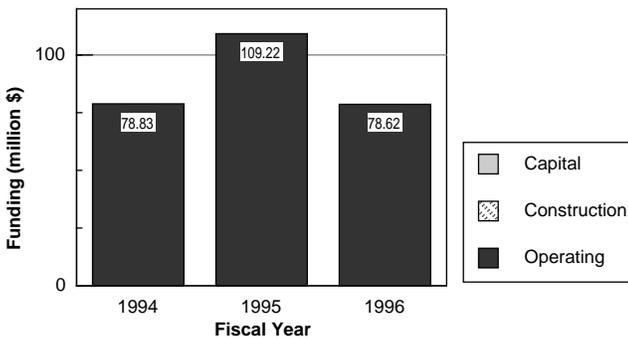
Transuranic Waste Area—Manages the isolation, characterization, treatment (if necessary), and disposal of all TRU waste. The national strategy is to permanently emplace all defense TRU Waste in a geologic repository (Waste Isolation Pilot Plant).

Mixed Low-Level Waste Area—Responsible for the characterization, treatment, and disposal of MLLW. Treatment strategies and options are in accordance with consent orders signed with affected states under the Federal Facility Compliance Act of 1992.

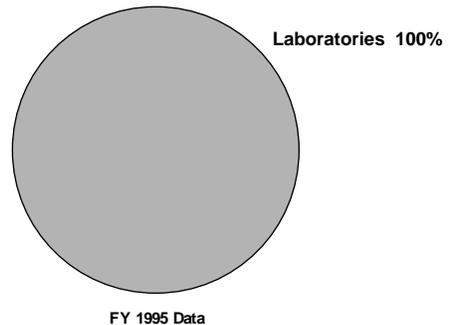
Low-Level Waste Area—Manages treatment and disposal of LLW stored and generated across the complex.

Hazardous Waste Area—Integrates site hazardous waste management programs. Hazardous waste is highly regulated and management options are limited. Sites rely primarily on commercial vendors for treatment and disposal of hazardous waste.

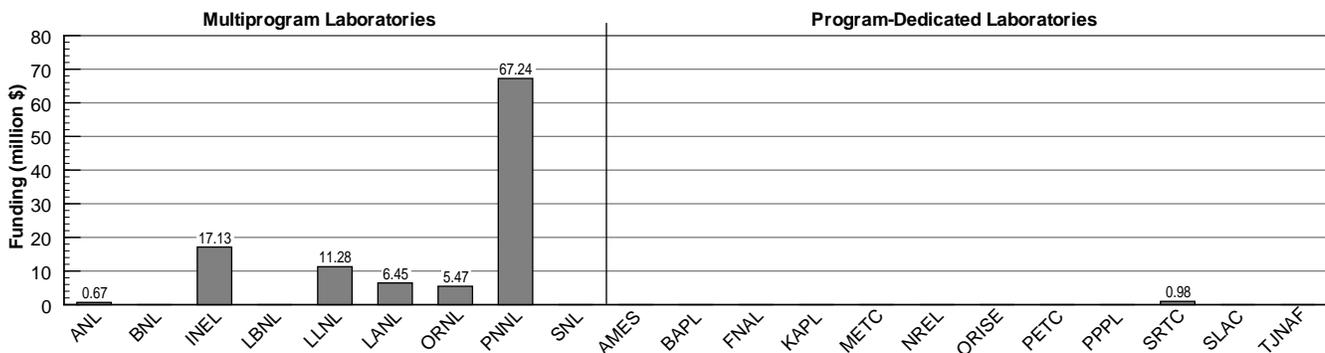
Funding History



Laboratory-Academia-Industry Participation



Fiscal Year 1995 Funding Profile



Field Site Technical Support

Department of Energy Program

Program: Environmental Management
Office: Waste Management
Element: Waste Management
B&R Code: EW315501, EX33

Laboratory Complex

Principal Laboratories: SNL
Contributing Laboratories: None
Participating Laboratories: ANL, BNL, INEL, LANL, LLNL, ORNL, PNNL

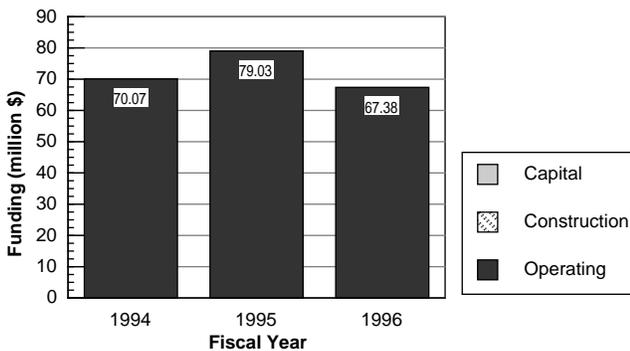
Mission Activity Description

Field site technical support activities address waste management processes carried out through site waste programs. Examples of field site technical support activities include: (1) technical analyses, modeling, and engineering studies related to waste characterization, packaging, transportation, treatment, storage, and disposal; (2) risk assessment studies; and (3) technical program planning activities. Current field site support tasks are the Waste Isolation Pilot Plant, New Mexico, and the West Valley Demonstration Project, New York.

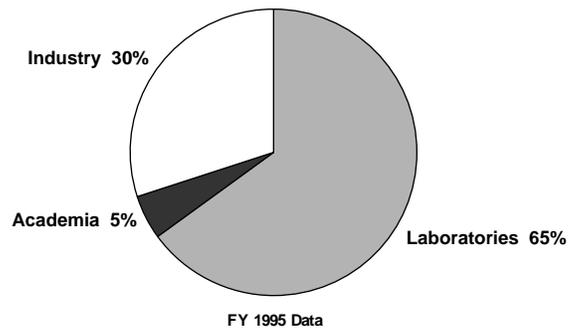
Waste Isolation Pilot Plant (WIPP)—The Waste Isolation Pilot Plant provides a research and development facility to determine the suitability of the site for the safe disposal of defense-related transuranic mixed waste. Technical support includes development of computer codes and performance assessment calculations; geohydrology and geochemical studies; geomechanics and shaft sealing studies.

West Valley Demonstration Project—The West Valley Demonstration Project is intended to demonstrate safe immobilization using vitrification of liquid high-level radioactive waste produced at the site. Technical support activities include glass testing and studies to support waste acceptance, processing of laboratory samples, and fabrication, characterization, and product consistency testing of radioactive glass.

Funding History



Laboratory-Academia-Industry Participation



Fiscal Year 1995 Funding Profile

