DOE PIP

JAN 30 1989

MEMORANDUM FOR: Those On Attached List

FROM: Robert E. Browning, Director
Division of High-Level Waste Management

SUBJECT: DOE PROGRAM IMPLEMENTATION PLAN MILESTONES FOR HLW

Enclosed you will find some general information and major planning milestones as it relates to DOE's plans for managing the disposal of defense high-level waste (HLW). This information corresponds to Chapters 1 and 2 (pages 1 through 13) of the DOE Program Implementation Plan, dated this past August, 1988.

Original Signed By J. Youngblood for

Robert E. Browning, Director
Division of High-Level Waste
Management

Enclosure:
As stated

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DEFENSE WASTE AND TRANSPORTATION MANAGEMENT

Prepared by
U.S. Department of Energy
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Transportation Management
Washington, D.C. 20545

August 1988

PROGRAM IMPLEMENTATION PLAN

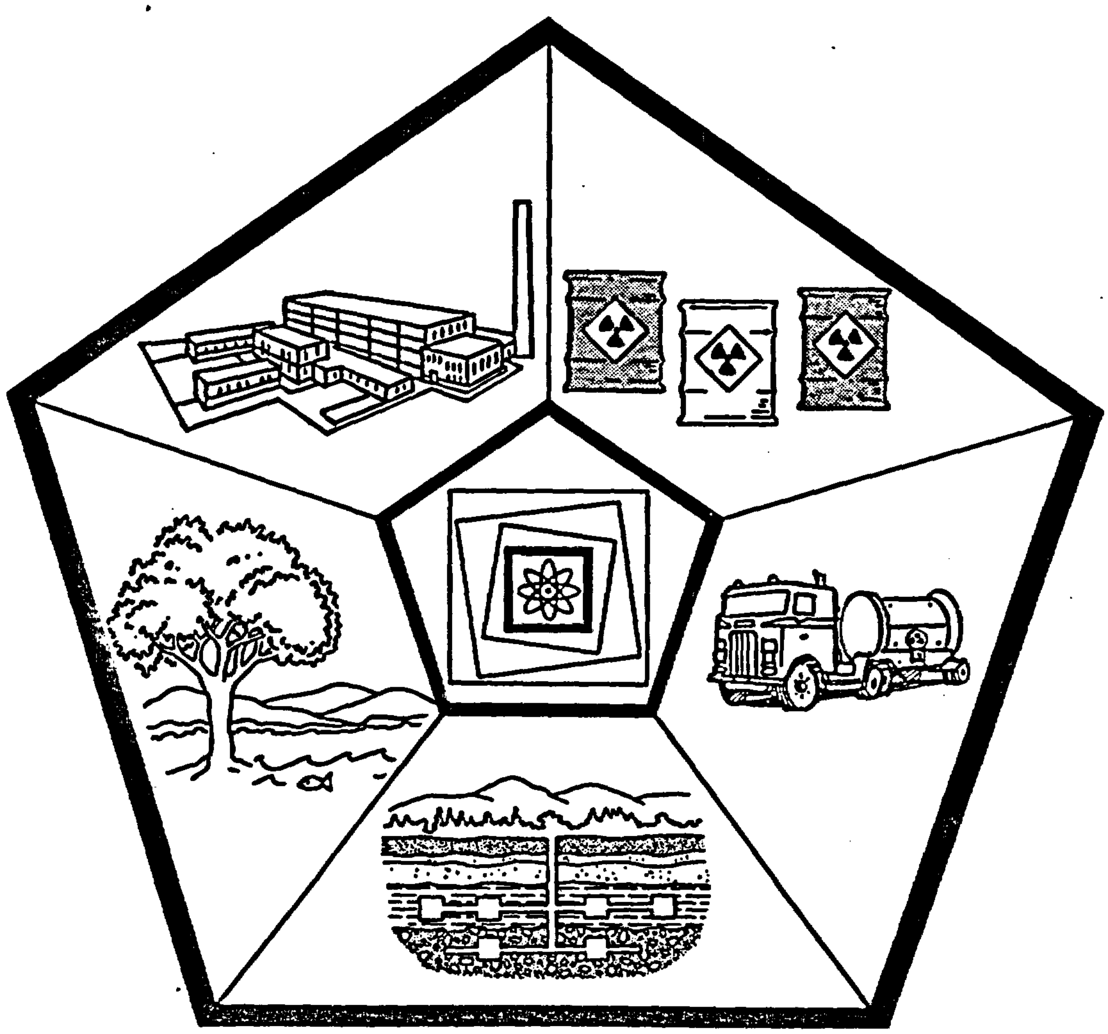


TABLE OF CONTENTS

Page

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

The Program Implementation Plan (PIP) describes the U. S. Department of Energy's (DOE's) strategy for managing the disposal of defense high-level waste (HLW), transuranic (TRU) waste, and low-level waste (LLW) from atomic energy defense activities. It also documents the implementation of the HL and TRU waste policies as stated in the Defense Waste Management Plan (DWMP) (DOE/DP-0015), dated June 1983, and also addresses the management of LLW.

The goals of the program remain as follows: to provide safe treatment, storage, and disposal of DOE radioactive waste for protecting the health and safety of the public, workers, and the environment as well as in support of defense nuclear materials production activities; and to implement cost-effective improvements in all of its ongoing and planned activities.

The key provisions of the DWMP prescribed (a) construction of HLW immobilization plants at the Savannah River Plant (SRP) in South Carolina, at the Hanford Reservation in Washington, and at the Idaho National Engineering Laboratory (INEL), (b) construction of a pilot facility at Carlsbad, New Mexico, for demonstrating the safe disposal of defense TRU waste, and (c) construction of TRU waste processing facilities at the Hanford, Savannah River, Oak Ridge, and Idaho sites. In the 5 years since the plan was prepared, these principal activities are in various stages of implementation. The construction of the Defense Waste Processing Facility for HLW at SRP is nearing completion, design is continuing for the Hanford Waste Vitrification Plant for HLW, and construction of the Waste Isolation Pilot Project for TRU waste storage is proceeding on schedule. The PIP describes accomplishments and changes in the scope and schedule of these activities. Figure E-1 shows the estimated cost for long-term defense HLW, LLW, and TRU waste management.

ESTIMATED COST FOR LONG TERM DEFENSE HLW, LLW AND TRU WASTE MANAGEMENT

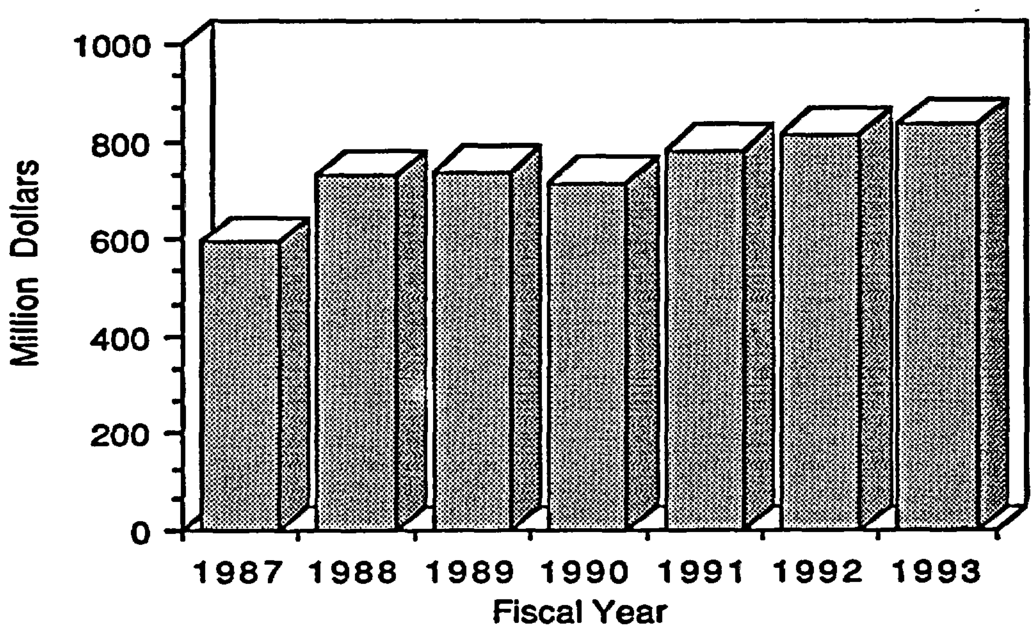


Figure E-1

Note: Detailed cost data are contained in Appendix C

According to the Atomic Energy Act of 1954, as amended, and the DOE Organization Act, authority for managing radioactive waste and byproducts generated by DOE's nuclear activities is vested in the Secretary of Energy. The Assistant Secretary for Defense Programs is delegated the primary authority for establishing policy for the management of DOE radioactive waste. The flow of materials and the resulting waste from the Department's defense and research and development activities are illustrated in Figure E-2.

Defense HLW and TRU waste are generated and stored at three sites: SRP, Hanford, and INEL. Defense TRU waste is also generated and stored at the Oak Ridge National Laboratory (ORNL) in Tennessee, and at the Los Alamos National Laboratory (LANL) in New Mexico. Additional TRU waste is generated at the Rocky Flats Plant (RFP) in Colorado. The Nevada Test Site (NTS) receives TRU waste from other generating sites for storage. Defense LLW is generated at 17 facilities and is currently disposed of at 11 active sites: the Hanford Site, INEL, LANL, NTS, ORNL, SRP, Oak Ridge Y-12 Plant (Y-12), Lawrence Livermore National Laboratory (LLNL) in California, Paducah Gaseous Diffusion Plant (PGDP) in Kentucky, Portsmouth Gaseous Diffusion Plant (Portsmouth) in Ohio, and Sandia National Laboratories (SNL) in New Mexico. (See Figure E-3.)

Irradiated fuels from production, test, and naval reactors are reprocessed to recover useful products. The waste from these activities, as well as from weapons fabrication and research, development and testing is processed and disposed of or stored pending disposal.

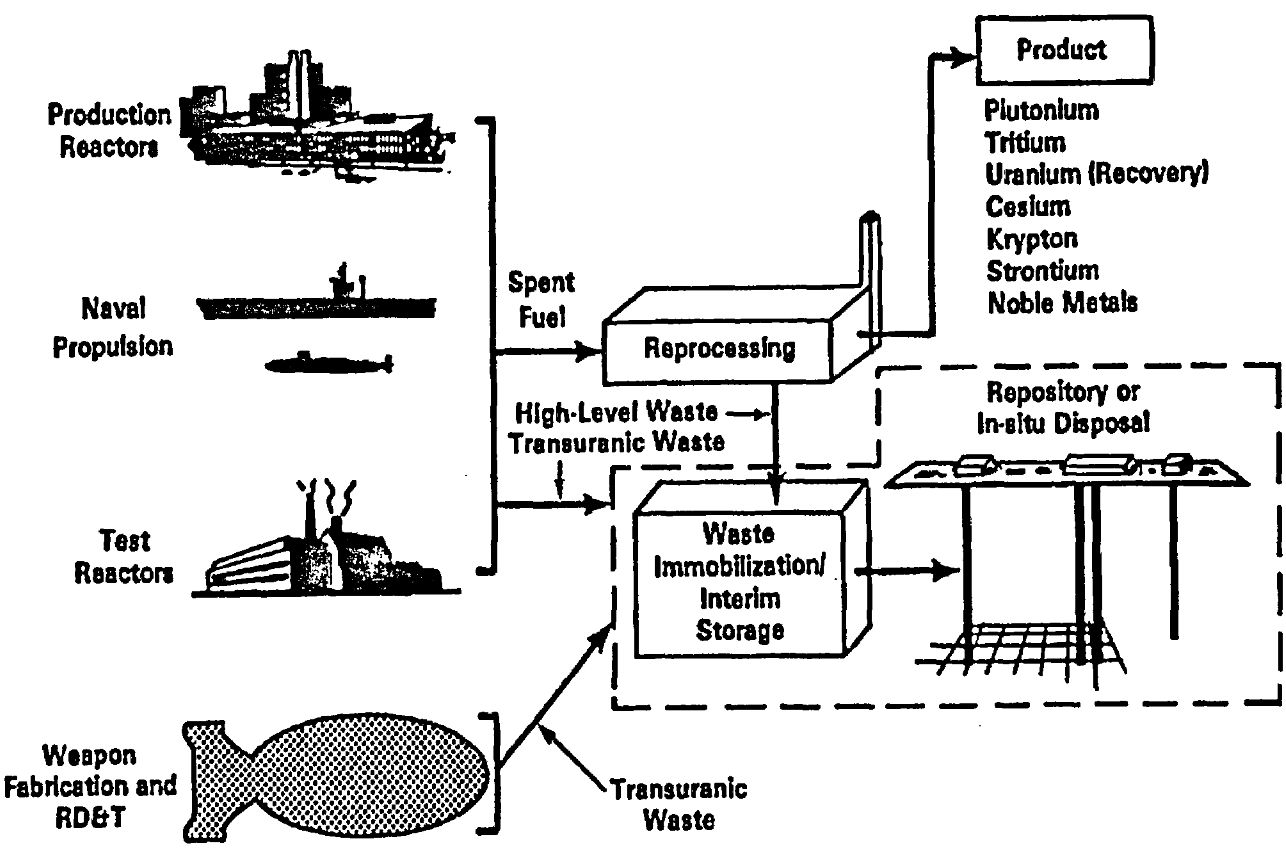


Figure E-2
Atomic Energy Defense Activities

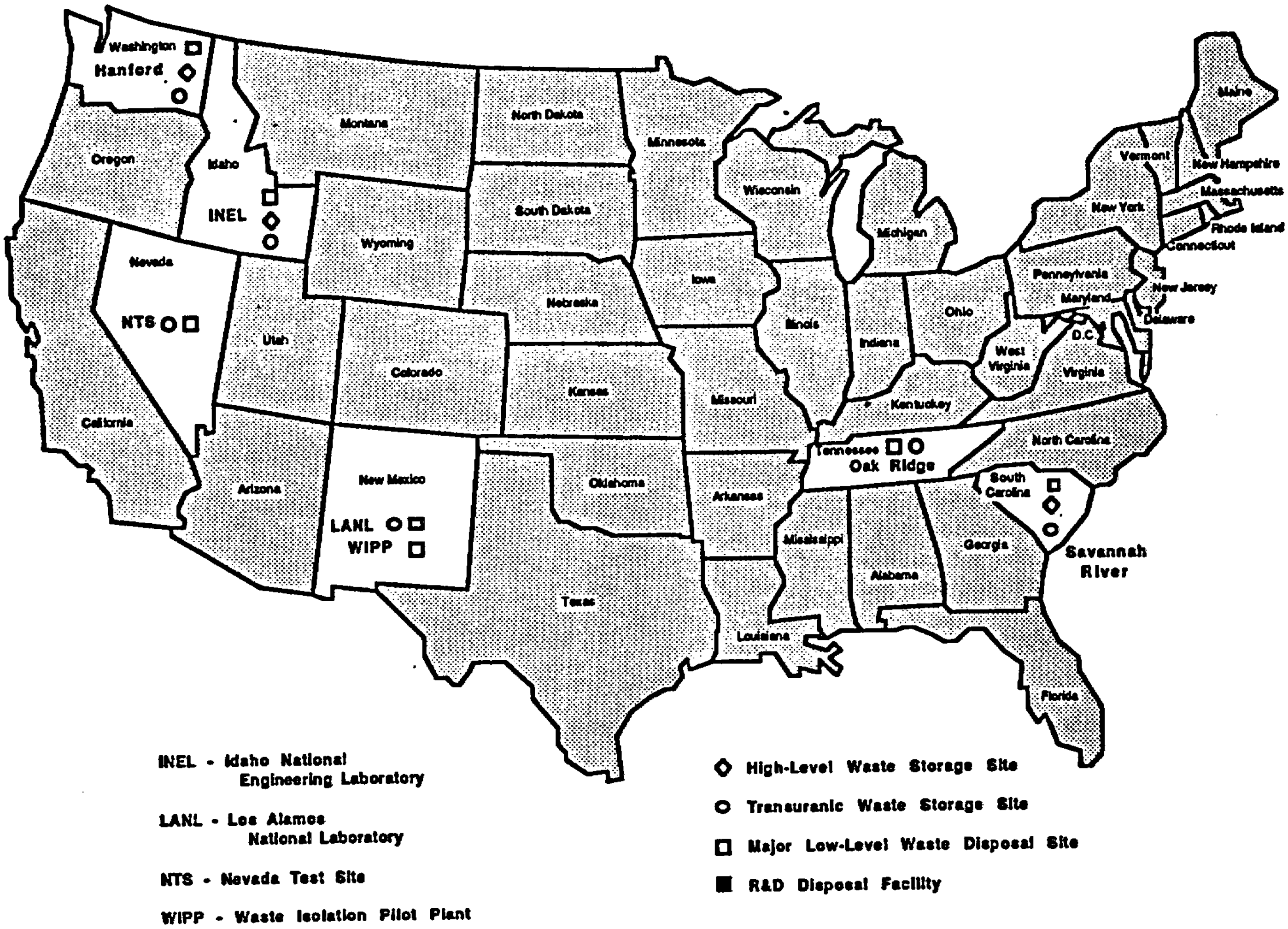


Figure E-3
Major Active Storage/Disposal Sites For Defense Radioactive Waste

High-Level Waste

The objective of the defense HLW program is to end storage and begin disposal of all DOE defense HLW. The Richland Operations Office serves as the Technology Lead Field Office.

New and readily retrievable HLW will be immobilized for disposal in a geologic repository. Older waste may be stabilized in place if, after thorough evaluation, including completion of the National Environmental Policy Act (NEPA) process, it is determined, on a site-specific basis, that this option is safe, cost effective, and environmentally acceptable. The transition from storage to disposal at the three DOE sites (SRP, the Hanford Site, and INEL) will occur sequentially to allow experience gained at the first site to be used at the other sites; this could lead to more efficient use of resources and could minimize capital expenditure requirements from year to year. Processing for disposal will begin at SRP first because its tanks contain approximately 60 percent of the radioactivity in DOE's HLW inventory; the site is in a wet climate; and it has a high groundwater table. The present program focus is on implementing the waste disposal strategies selected in compliance with the NEPA process at SRP and Hanford, while progress continues toward development of a final waste disposal strategy at the INEL.

Section 8 of the Nuclear Waste Policy Act (NWPA) of 1982 (Public Law 97-425) requires the disposal of defense HLW in a civilian repository unless the President finds that a defense-waste-only repository is required. In April 1985, the President agreed with DOE that a separate repository was not required; thus, defense HLW will be sent to a civilian repository.

Figure E-4 shows the major program milestones.

MAJOR MILESTONES FOR PERMANENT DISPOSAL OF DEFENSE HIGH-LEVEL WASTE

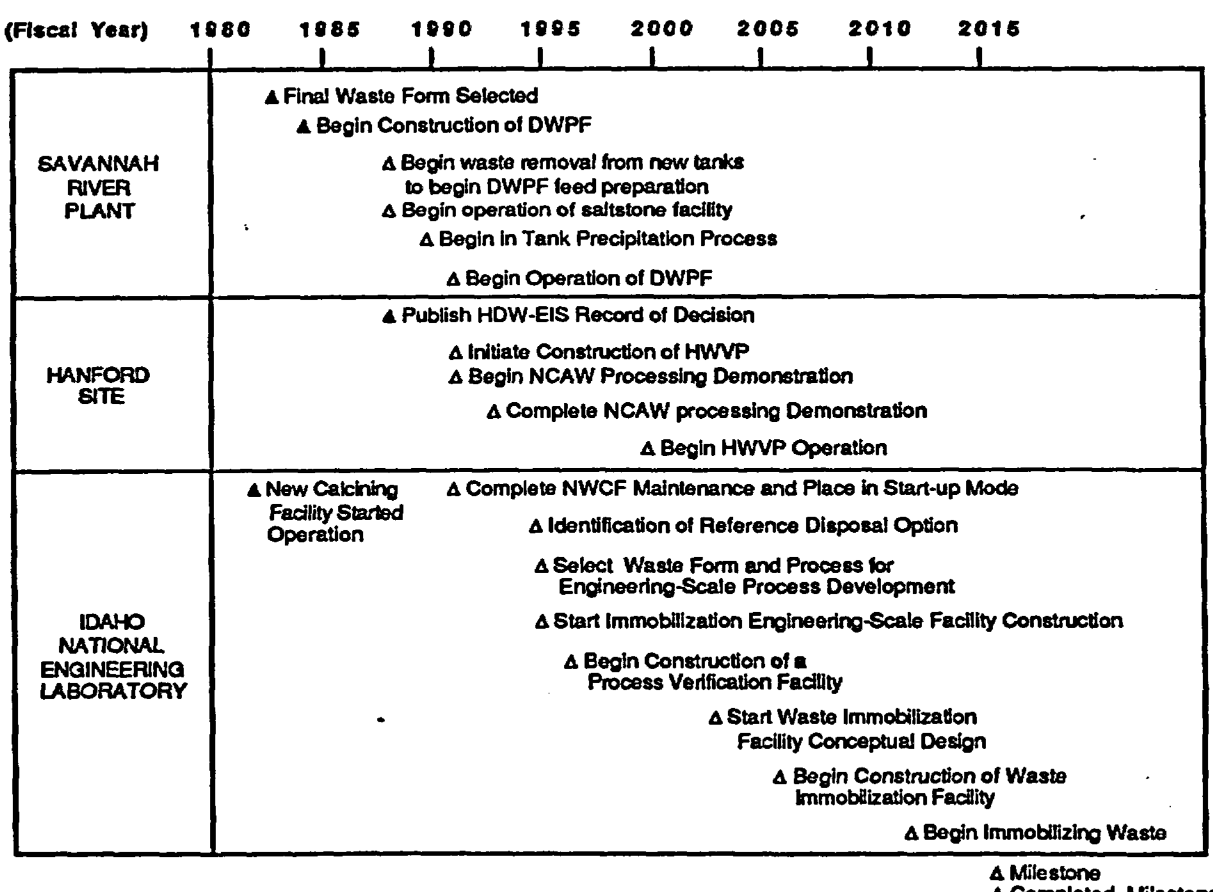


Figure E-4

Transuranic Waste

The objective of the defense TRU waste program is to end storage and begin disposal of DOE TRU waste. The Albuquerque Operations Office is responsible for integration of treatment, certification, transportation, and institutional activities supporting disposal at the Waste Isolation Pilot Plant (WIPP), a geologic repository near Carlsbad, New Mexico. The Albuquerque Operations Office also serves as the Technology Lead Field Office for long-term TRU technology R&D for reduced waste generation and options for permanent disposal of previously buried TRU wastes.

Newly generated and retrievably stored defense TRU waste will be certified for compliance with WIPP waste acceptance criteria, after processing if necessary, and then sent to WIPP. Certification of newly generated contact-handled transuranic (CH-TRU) waste began at most sites in FY 1985 after approval of the certification plans and procedures at the respective sites. Similarly, certification of newly generated remote-handled transuranic (RH-TRU) waste has already begun at some sites. Stored waste will be retrieved, examined, processed if necessary, and certified. When WIPP is operational, waste-generating sites will send certified waste to WIPP. At the end of the five-year demonstration period in WIPP, during which waste will be retrievably stored in that facility, a decision will be made to permanently dispose of or to retrieve the TRU waste.

Prior to 1970, transuranic contaminated waste was disposed of by shallow land burial, since TRU waste was not separately defined. These burial sites are being monitored. In compliance with applicable DOE Orders and environmental protection laws, buried waste sites are being characterized, and technology for possible remedial actions is being assessed relative to the safety of these sites.

Figure E-5 shows the major milestones scheduled for each site.

Low-Level Waste

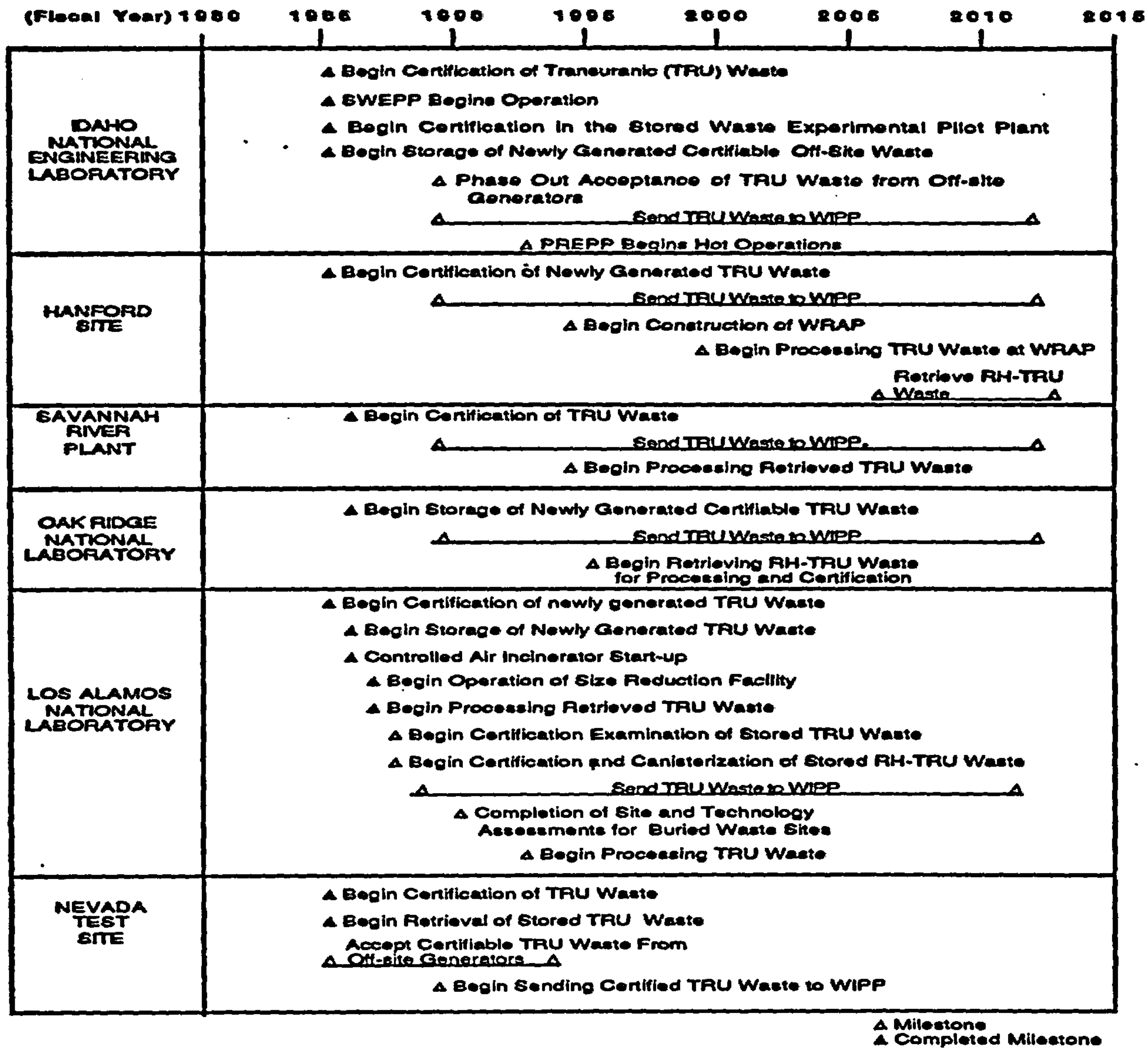
The objective of the defense LLW program is to continue the routine, safe, and environmentally acceptable disposal of LLW by shallow land burial while improving the cost effectiveness of LLW treatment, disposal, and long-term management activities, and developing and implementing improved waste forms, engineered barriers, and other disposal improvements where necessary. The Idaho Operations Office serves as the Technology Lead Field Office. Improvements are being made in existing generation, treatment, and disposal practices based on systems analyses of the waste management system.

As required by the revised DOE Order 5820.2A, "Radioactive Waste Management", performance assessments are made to ensure that the system performs as predicted and to determine the degree of waste isolation required on a waste and site specific basis. Such assessments assure that LLW management results in reduced environmental impact and reduced potential exposure to the public.

At the six major LLW disposal sites, LANL, ORNL, SRP, INEL, the Hanford Site, and NTS, solid LLW is disposed of primarily in near surface pits and trenches. Some LLW with higher levels of radioactivity is disposed of using alternative technologies, such as caissons or augered shafts. As noted in the preceding paragraph, assessment of performance objectives may demand near surface disposal practices other than shallow land burial.

Figure E-6 shows the major milestones scheduled for each of the major sites.

MAJOR MILESTONES FOR DISPOSAL OF DEFENSE TRANSURANIC WASTE



MILESTONES FOR THE WASTE ISOLATION PILOT PLANT

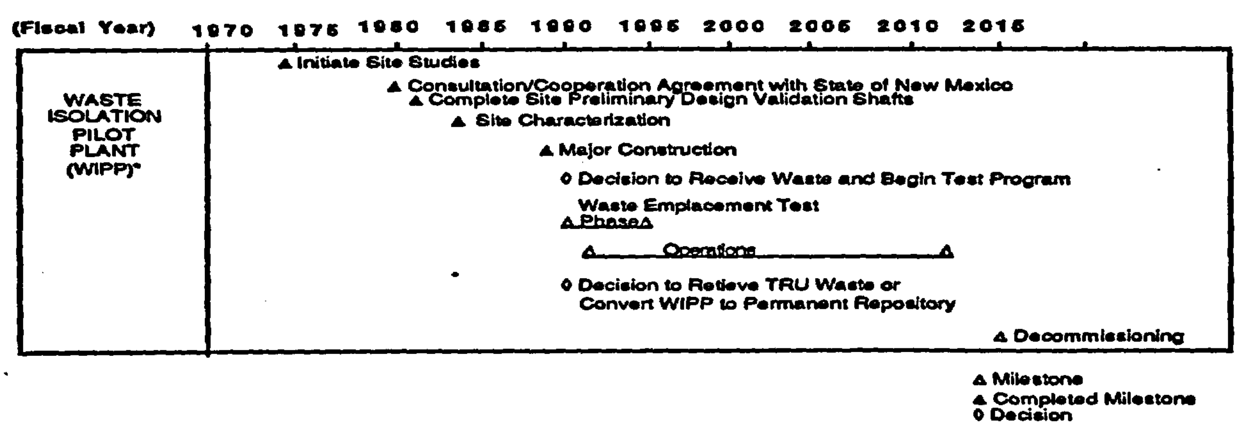


Figure E-5

MAJOR MILESTONES FOR DEFENSE LOW-LEVEL WASTE MANAGEMENT

(Fiscal Year) 1985 1986 1987 1988 1989 1990 1991 1992

SAVANNAH RIVER PLANT	▲ Compaction Process Startup ▲ Begin Operation of GCD Trench for LLW ▲ Begin Burial Ground Expansion Program △ Begin Operation of New LLW Disposal Facility
IDAHO NATIONAL ENGINEERING LABORATORY	▲ Submit Guidance Document on Site Stabilization ▲ Final Report on Environmental Monitoring Techniques ▲ Begin Solidification of all Waste Streams at WERF ▲ Liquid Incineration System Operational in WERF △Complete Rock Fracturing and Excavation Programs to Extend Burial Ground Lifetime △ Complete the Interim Contouring of the SDA △ Start Enhanced Remote Handled LLW Operation
HANFORD SITE	▲ Publish Status Document for Discontinue of Soil Column Use ▲ Publish Draft BAT Guidance Document ▲ Grout Facility Operational (for phosphate sulfate waste) △ Grout Facility Operational (for double-shell tank waste)
NEVADA TEST SITE	▲ Begin Construction of RWMS Water Pipeline ▲ Begin RWMS Expansion ▲ Final Report on GCDT Technology Monitoring and Data Analysis △ Complete 640-Acre Land Expansion of RWMS Area 5 △ Complete Construction of RWMS Water Pipeline
LOS ALAMOS NATIONAL LABORATORY	▲ Incinerate Mixed LLW ▲ Complete Surface Stabilization Process ▲ Final LANL Model Analysis Report △ Complete Long-term Stabilization of Existing Burial Grounds
OAK RIDGE OPERATIONS	▲ Begin Shipping FMPC LLW to NTS ▲ Final Report on the ETF ▲ Initiate LLW Treatment and Pilot Scale Disposal Demonstrations △ Begin Solidification of Liquid LLW from Melton Valley Storage Tanks △ Begin Operation of Large-scale Disposal Demonstrations

△ Milestone
▲Completed Milestone

Figure E-6

1.0 INTRODUCTION

This document describes DOE's current plans for managing the disposal of HLW, TRU waste, and LLW from atomic energy defense activities. It documents the implementation of the HLW and TRU waste policies as stated in the Defense Waste Management Plan (DWMP) (DOE/DP-0015), dated June 1983, and additionally addresses the disposal of LLW.

A reference plan for each of the waste types describes the sequence of steps leading to disposal. Not all final decisions that concern the activities described in this document have been made. These decisions will depend on completion of the National Environmental Policy Act (NEPA) process, authorization and appropriation of funds, agreement with states as appropriate, and, in some cases, the results of data collected from pilot experiments and operational experience.

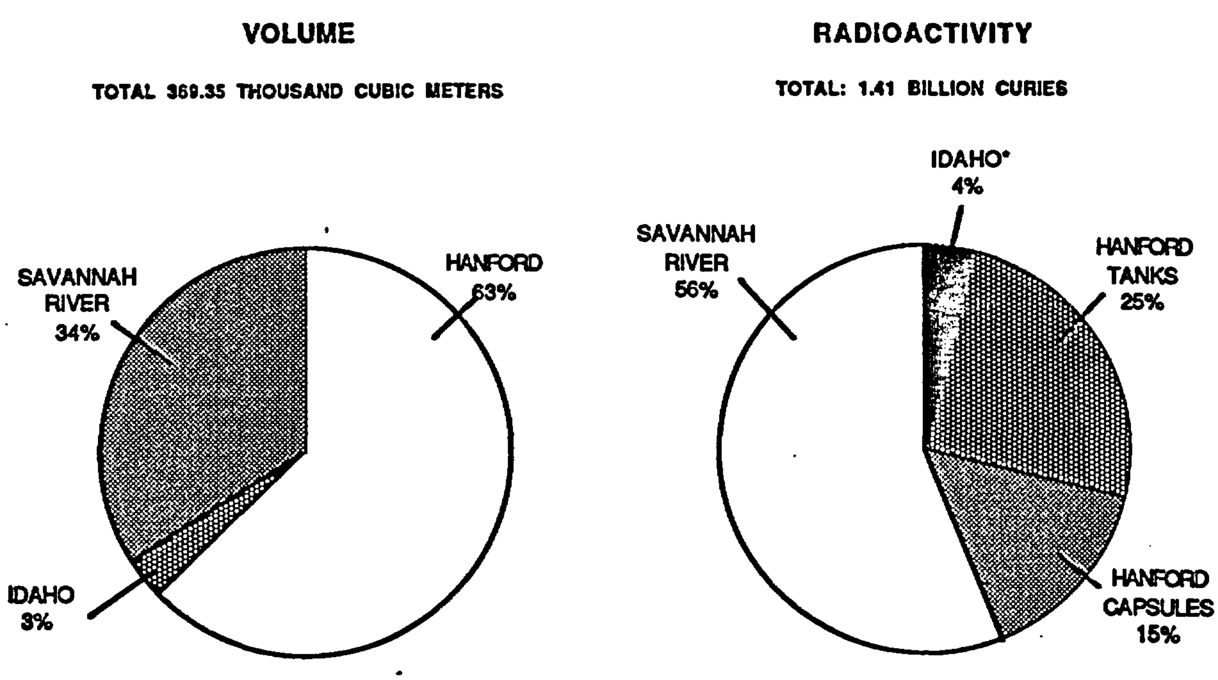
2.0 PLAN FOR THE DISPOSAL OF HIGH-LEVEL WASTE

High-level waste (HLW) is defined in the revised DOE Order 5820.2A as "the highly radioactive waste material that results from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid waste derived from the liquid that contains a combination of TRU waste and fission products in concentrations as to require permanent isolation." HLW is generated and stored at the SRP, the INEL, and the Hanford Site. Figure 2-1 shows the volume and radioactivity of HLW accumulated at each site through December 1986.

HLW is generated from fuel processing as an acidic, highly radioactive, and heat-producing liquid. At the Hanford Site and at SRP, these wastes are made alkaline with caustic and stored in underground carbon-steel tanks. At INEL, the acid wastes are stored in underground stainless steel tanks. When enough liquid has accumulated, it is converted to a dry granular solid form (calcine) and stored in underground stainless steel bins. At the Hanford Site and SRP, the neutralized waste is aged to allow short lived radioisotopes to decay, concentrated, and then stored as damp crystalline salt, sludge, and supernatant liquid. At the Hanford Site, most of the cesium and strontium has been separated from the stored high-heat producing waste generated before FY 1984. These separated materials have been converted to dry cesium chloride and strontium fluoride salts and sealed in double-wall metal capsules. Some of these capsules are being leased to industry for beneficial use; all of them will ultimately be disposed of in a geologic repository.

The objective of the defense HLW management program is to end storage and to begin disposal. New- or readily retrievable HLW will be processed first. A civilian geologic repository is being developed under the Office of Civilian Radioactive Waste Management (OCRWM) program, in accordance with the Nuclear Waste Policy Act (NWPA) of 1982 as amended. Defense HLW will be sent to a civilian repository.

VOLUME AND RADIOACTIVITY OF HIGH-LEVEL WASTE ACCUMULATED THROUGH 1986



Inventories and projections were extracted from "Spent Fuel and Radioactive Waste Inventories, Projections, and Characteristics", September 1987.
* Represents Total Liquid and Solid Volume Existing Through 1986. INEL has the highest percentage of the solid waste inventory.

Figure 2-1

2.1 Site Management Plans for High-Level Waste

2.1.1 Savannah River Plant

SRP HLW is stored in underground tanks with capacities from 2,800 to 4,900 cubic meters (740,000 to 1,294,000 gallons). From FY 1966 to FY 1982, DOE constructed 27 high-integrity, double-shell storage tanks to replace older tanks and to store and process new waste.

HLW at SRP consists of sludge, salt cake, and salt solution. The HLW sludge, which contains most of the radionuclides and virtually all the long-lived activity, will be separated and treated for removal of aluminum salts, mercury, and noble metals. The salt solution will be decontaminated by removing most of the cesium and other radionuclides via a precipitation process. The decontaminated salt solution will then be disposed of as LLW.

The HLW sludge and the high-activity precipitate from the salt decontamination process will be further processed, immobilized in borosilicate glass in the Defense Waste Processing Facility (DWPF), and stored on site in air-cooled vaults until it can be shipped for disposal in a repository. Processing for disposal will begin at this site before Hanford and INEL because it contains about 59 percent of DOE's radioactivity and because environmental factors for continued interim storage are less favorable than at the other two sites.

The DWPF will process the sludge and cesium rich precipitate slurry to produce 400 to 500 stainless steel canisters of borosilicate glass per year initially. The capacity for temporary storage of canisters can be expanded as needed.

The decontaminated salt solution will be mixed with cement and other additives and disposed of as a solid called saltstone in a near-surface engineered facility starting in FY 1988.

2.1.2 Hanford Site

The Hanford Site has twenty-eight double-shell tanks used for the storage of high-level and other radioactive liquid wastes. All waste tanks that were placed in service after 1968 have been of the higher integrity double-shell design. Newly generated high-level waste from reprocessing fuel at the Plutonium Uranium Extraction (PUREX) Plant and other radioactive liquid from site operations are stored in the double-shell tanks.

There are also 149 single-shell tanks containing sludges, salt cake and some older liquids. The single-shell tanks are first stabilized by transferring pumpable liquid to the double-shell tanks. The single-shell tanks are then isolated by disconnecting and blanking all pipelines and sealing all openings to prevent entry of liquids.

In December 1987, the Environmental Impact Statement entitled "Disposal of Hanford Defense High-Level, Transuranic and Tank Wastes" DOE/EIS-0113 (HDW-EIS) was issued. The alternative selected, as noted in the April 1988 Record of Decision, was to proceed with disposal activites for double-shell tank wastes and encapsulated strontium and cesium wastes. The DOE has decided to conduct additional development and evaluation before making a decision on the final disposal of single-shell tank waste, TRU-contaminated soil sites and pre-1970 buried suspect TRU-contaminated solid waste.

Some waste from double-shell tanks will be pretreated in an existing facility (B Plant) to separate long-lived transuranic and fission product components from the bulk of the waste. The separated transuranic and fission products will then be stored in double-shell tanks and will ultimately be immobilized within borosilicate glass at the Hanford Waste Vitrification Plant (HWVP), now being designed. The vitrified waste will be stored on site until a geologic repository is available. The large volume of low activity waste remaining after separation, and other low-level double-shell tank wastes will be solidified as a cement-based grout in the Grout Treatment Facility (GTF) and disposed of on-site as low-level waste in near surface concrete vaults.

A neutralized current acid waste (NCAW) processing demonstration at B Plant will begin in FY 1991. After the demonstration and facility modifications are completed at the end of FY 1991, full-scale processing to pretreat the NCAW will begin. Following completion of the NCAW pretreatment, B Plant processing and equipment will be used to pretreat other double-shell tank wastes.

The Hanford Waste Vitrification Plant (HWVP) will immobilize the long-lived/high activity fraction of the double-shell tank waste in borosilicate glass. Construction of the facility is scheduled to begin in FY 1990, and operations are to begin in FY 1999. The facility is being designed to use the technology from the Savannah River Plant Defense Waste Processing Facility and other available HLW vitrification developments to the maximum extent practical.

Strontium and cesium are high activity constituents that were separated from tank wastes, then solidified and encapsulated. A portion of encapsulated strontium and cesium is leased for commercial use with the remainder now stored at Hanford in water basins until a geologic repository is ready to receive the waste for disposal. Prior to shipment to a geologic repository, these wastes will be packaged in accordance with repository waste acceptance specifications.

For single-shell tank wastes, additional development and evaluation will be conducted before making decisions on the method for final disposal. This development and evaluation effort will focus on methods to retrieve and process these wastes prior to disposal, as well as on methods to stabilize and isolate wastes near the surface. Activities to be addressed include waste characterization, retrieval technology, pretreatment technology, barrier development, and aspects of near-surface disposal. The final disposal of the single-shell tank wastes will be based on a supplement to the HDW-EIS.

2.1.3 Idaho National Engineering Laboratory

INEL began calcining HLW in FY 1963. As of March 1988, about 11,200 cubic meters of HLW was stored at INEL at the Idaho Chemical Processing Plant (ICPP), consisting of about 8,000 cubic meters of liquid waste and 3,200 cubic meters of calcine. Calcination results in a waste reduction factor of about 8 to 1.

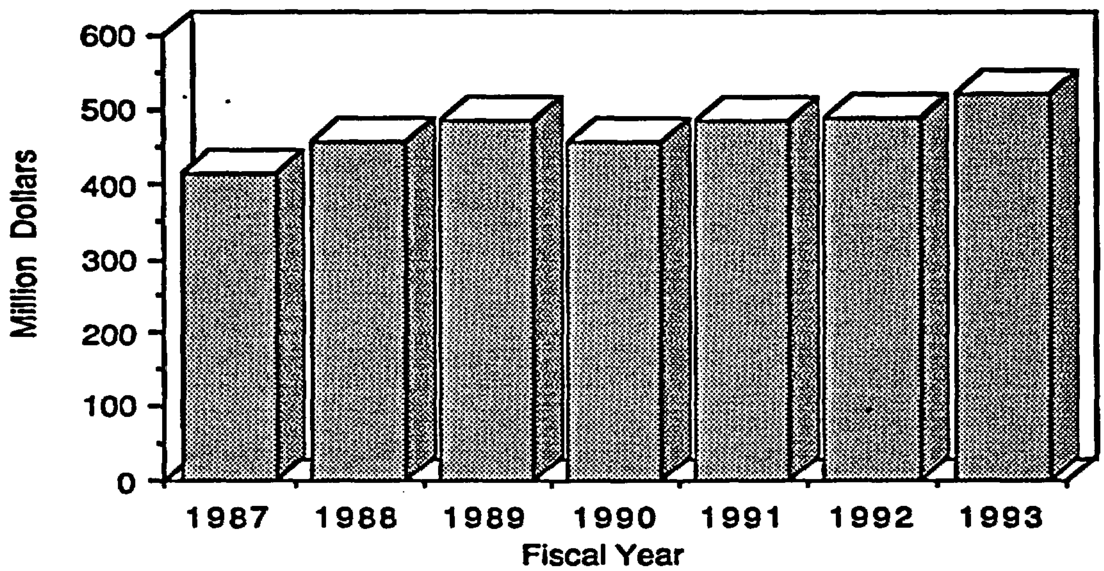
The liquid waste is stored in large, underground stainless steel tanks housed in concrete vaults. Liquids are accumulated until sufficient quantities are available to be calcined, which is approximately every one to two years. The dry calcine is stored in high-integrity underground stainless steel bins encased in concrete vaults. Six sets of bins have been constructed, and a seventh set is under construction and should be completed in FY 1989. Four of the six sets are filled with a fifth set partially filled; additional sets will be constructed as required.

HLW at INEL is readily retrievable and will be processed last because it is being calcined to an exceptionally stable solid form and because of the remoteness of the water table. Design of an immobilization facility is planned for FY 2002 with physical construction beginning in FY 2005 and operation to begin in FY 2011. The capacity of the immobilization facility will be designed on the basis of volume of waste available, the rate at which it will be immobilized, and the waste loading. The appropriate environmental documentation will be prepared before construction begins.

If all of the calcined waste, which includes large amounts of inert ingredients, were to be immobilized, the ICPP waste would result in greater volumes of immobilized waste than SRP and the Hanford Site waste combined . A larger volume is also attributable to the fuel reprocessing rates required by increased receipt of naval fuel anticipated in the future, and also because of the different dissolution process required by these fuels. Thus, a main focal point at the INEL is to find methods of reducing the volume of immobilized waste. Waste processes and waste form evaluations funded by the HLW technology program are continuing at INEL. By FY 1993, a reference waste form and process for environmental evaluation and process verification will be identified.

The estimated cost for long-term defense HLW management through FY 1993 is shown in Figure 2-2 and the schedule for milestones in Table 2-1.

ESTIMATED COST FOR LONG-TERM DEFENSE HLW MANAGEMENT



Note: Detailed cost data are contained in Appendix C

Figure 2-2

MILESTONES FOR DISPOSAL OF DEFENSE HIGH-LEVEL WASTE

SAVANNAH RIVER PLANT

EVENT	FISCAL YEAR
Final Immobilized HLW Waste Form Selected	1983
Begin construction of Defense Waste Processing Facility	1984*
Begin waste removal from new tanks to begin Defense Waste Processing Facility feed preparation	1988*
Begin operation of saltstone facility	1988*
Begin In Tank Precipitation Process	1989*
Begin operation of Defense Waste Processing Facility	1990*

HANFORD SITE

Publish HDW-EIS Record of Decision	1988
Initiate Construction of HWVP	1990
Begin NCAW Processing Demonstration	1990
Complete NCAW Processing Demonstration	1991
Begin HWVP Operation	1999*

IDAHO NATIONAL ENGINEERING LABORATORY

EVENT	FISCAL YEAR
New calcining facility started operation	1982
Complete NWCF Maintenance and Place in Start-up Mode	1988
Identification of Reference Disposal Option	1993
Select Waste Form and Process for Engineering-Scale Process Development	1993
Start Immobilization Engineering-Scale Facility Construction	1993
Begin Construction of a Waste Immobilization Facility	1994
Start Waste Immobilization Facility Conceptual Design	2002
Begin Construction of a Waste Immobilization Facility	2005
Begin Immobilization of newly generated HLW	2011*

*Critical Path Items

Table 2-1

2.2 Defense High-Level Waste Technology Program Approach

The objective of the Defense High-Level Waste Technology Program is to develop the technology for ending interim storage and achieving permanent disposal of all U.S. defense high-level waste. The Richland Operations Office is the Technology Lead Field Office for HLW management.

Defense high-level waste generated by atomic energy defense activities is stored at three U.S. Department of Energy (DOE) operating locations: the Savannah River Plant in South Carolina, the Hanford Site in Washington, and the Idaho National Engineering Laboratory in Idaho. High-level waste will be immobilized for disposal in a geologic repository. Other waste will be stabilized in-place if, after completion of the National Environmental Policy Act (NEPA) process, it is determined on a site-specific basis, that this option is safe, cost effective and environmentally sound. The orderly transition from storage to disposal at the three DOE sites will proceed sequentially in order to permit technical developments at the first site to be utilized at the other sites and levelize funding requirements. The immediate program focus is on implementing the waste disposal strategies selected in compliance with the NEPA process at Savannah River and Hanford, while continuing progress toward development of a final waste disposal strategy at Idaho.

At Savannah River, high-level waste will be retrieved from underground storage tanks, immobilized in borosilicate glass, and stored onsite pending shipment to a geologic repository. The Defense Waste Processing Facility (DWPF), to immobilize Savannah River waste, is under construction. Starting in 1990, the sludge and most of the radioactivity in the supernatant liquid will be processed in the DWPF to produce canisters of borosilicate glass in which the HLW is dispersed and immobilized. The borosilicate glass will be made from a blend of (1) washed sludge, (2) glass frit, and (3) precipitated cesium plus smaller quantities of other radionuclides from treatment of salt solutions. Processing of decontaminated salt solution into saltstone started in 1988; the saltstone is a solid low-level waste and will be disposed of onsite in engineered vaults.

The initial production of glass at SRP is scheduled to start in 1990. The DWPF is designed to produce 400 to 500 canisters per year. A total of about 6,810 canisters will have been produced by the end of 2020.

At Hanford, a final Environmental Impact Statement (EIS) was issued in December 1987 to support selection of a disposal strategy for Hanford high-level, transuranic and tank wastes. The Preferred Alternative recommends proceeding with disposal of double-shell tank waste, retrievably-stored transuranic waste and encapsulated cesium and strontium. Further development and evaluation is recommended for the single-shell tank waste. A Record of Decision was signed April 8, 1988 selecting the Preferred Alternative. Detailed plans are being developed to implement the approved strategy.

At Idaho, several alternative waste management strategies have been identified and their relative rankings evaluated. One of these strategies will eventually be selected, in compliance with the NEPA process, for disposal of Idaho HLW.

3.0 PLAN FOR THE DISPOSAL OF TRANSURANIC WASTE

TRU waste is defined in the revised DOE Order 5820.2A as radioactive waste that, at the end of institutional control period, is contaminated with alpha-emitting transuranium radionuclides with half-lives greater than 20 years and concentrations greater than 100 nanocuries per gram (nCi/g). Typical TRU waste forms include metal, glassware, process equipment, soil, laboratory waste, ion exchange resins, filters, clothing, and paper products. The principal sources of defense TRU waste are research and weapons manufacturing or other programs exempted from regulation by the Nuclear Regulatory Commission (NRC).

Before 1970, TRU-contaminated solid waste was disposed of by shallow land burial and was not distinguished from other low-level solid waste. In 1970, the U. S. Atomic Energy Commission decided that TRU waste should be retrievably stored in packages designed to last at least 20 years, pending decisions on its permanent disposal. The DOE later determined that this stored waste should be retrieved, certified, processed as necessary and emplaced in the Waste Isolation Pilot Plant (WIPP) assuming WIPP is an acceptable repository. This decision was first formally presented in the Defense Waste Management Plan of June 1983. Because of previous limitations in assay capabilities, waste even suspected of exceeding TRU concentrations had been stored as TRU waste.

Figure 3-1 shows the amount of CH- and RH-TRU waste in retrievable storage as of December 1986.

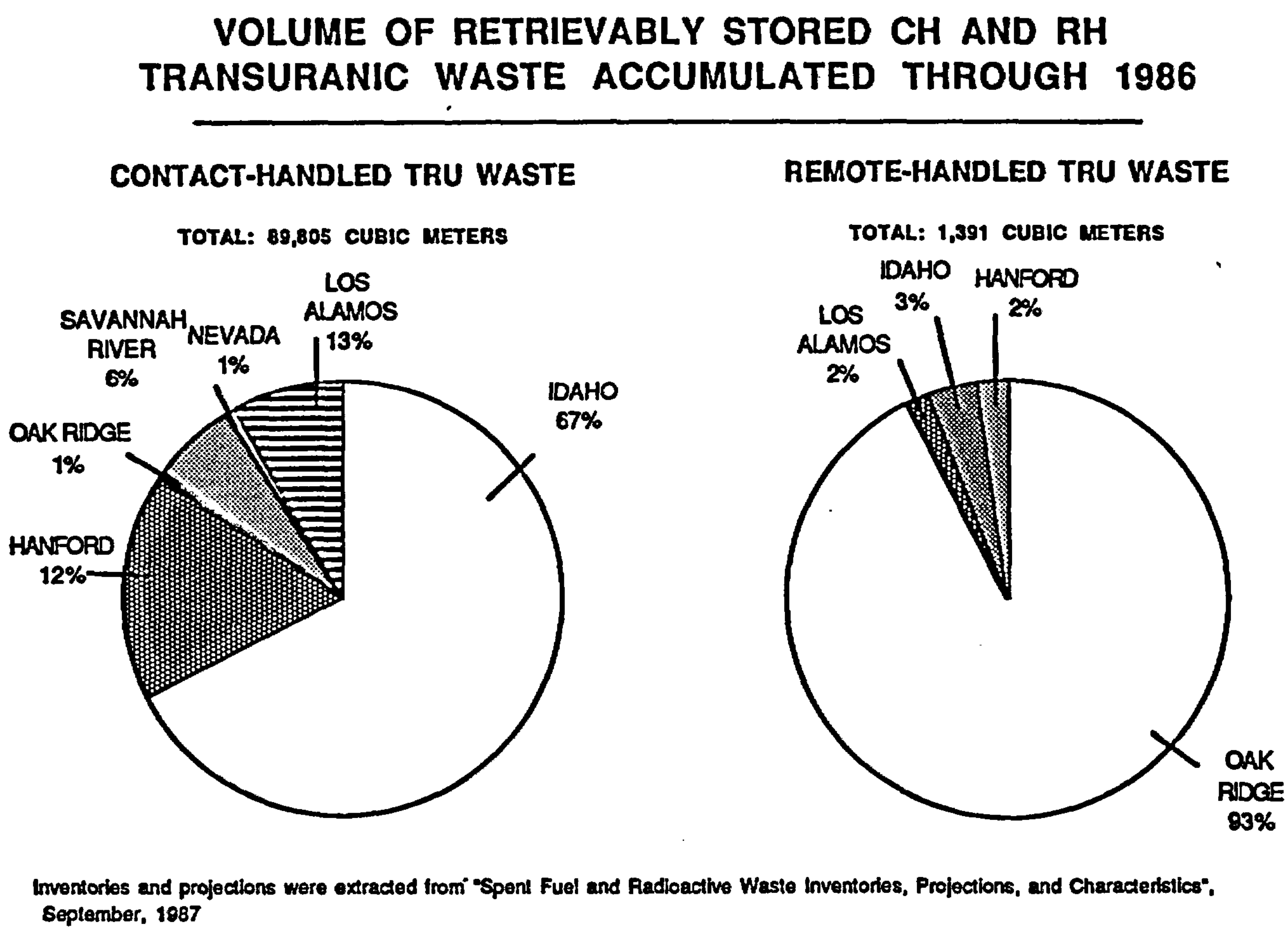


Figure 3-1