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Materials-in-Inventory Report

U.S. Department of Energy
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ACRONYMS AND ABBREVIATIONS

ACRR	Annular Core Research Reactor
AI	Atomics International
ALKI	Alkali Metals
ANL-E	Argonne National Laboratory East
ANL-W	Argonne National Laboratory West
APPR	Army Power Package Reactor
ATR	Advanced Test Reactor
ATSR	Advanced Thermal Source Reactor
B&W	Babcock and Wilcox Co.
BCD	Batelle, Columbus Division
BMI	Batelle Memorial Institute
BMRR	Brookhaven Medical Research Reactor
BNL	Brookhaven National Laboratory
BORAX	Boiling Reactor Experiment
BSR	Bulk Shielding Reactor
BWR	Boiling Water Reactor
CANDU	Canadian deuterium
CFRMF	Coupled Fast Reactor Measurement Facility
CML	Critical Mass Laboratory
CRBR	Clinch River Breeder Reactor
CVTR	Carolina-Virginia Tube Reactor
CX	Critical Experiment
DRCT	Dry Rod Consolidation Technology
EBR	Experimental Breeder Reactor
EBWR	Experimental Boiling Water Reactor
ECF	Expanded Core Facility
EMAD	Engine maintenance, assembly and disassembly
EPR	Experimental Power Reactor
ETEC	Energy and Technology Engineering Center
EXPL	Explosives
FERMI	Fermi National Accelerator Laboratory
FFTF	Fast Flux Test Facility
FLIP	Fuel Life Improvement Program
FREC	Fuel Ringed External Cavity
FUSRAP	Formerly Utilized Site Remedial Action Program
GCRE	Gas Cooled Reactor Experiment
GETCF	General Electric Test Critical Facility
GETR	General Electric Test Facility
HFBR	High Flux Beam Reactor
HFIR	High Flux Isotope Reactor
HTRE	High Temperature Reactor Experiment
HWCTR	High Water Components Test Reactor

IDC	Item Description Code
INEL	Idaho National Engineering Laboratory
JMTR	Japanese Material Test Reactor
LANL	Los Alamos National Laboratory
LBL	Lawrence Berkeley Laboratory
LFRSB	Loose Fuel Rod Shipping Basket
LL	Low-Level Radioactive
LOFT	Loss-of-Fluid Test Reactor
LWBR	Light Water Breeder Reactor
LWR	Light Water Reactor
MAPI	Mitsubishi Atomic Power Industries
MIN	Materials-in-Inventory
MIT	Massachusetts Institute of Technology
ML	Mobile Low Power Reactor
MSRE	Molten Salt Reactor Experiment
MTR	Materials Test Reactor
MURR	Missouri University Research Reactor
NMC	Nuclear Materials Custodian
OPTRAN	Operation Transient Tests
OR	Oak Ridge National Laboratory
ORISE	Oak Ridge Institute for Science and Education
ORR	Oak Ridge Reactor
OSU	Oregon State University
OWM	Department of Energy-Office of Waste Management
Pb	Lead
PBF	Power Burst Facility
PCM	Power Coolant Mismatch Tests
PITL	Post Irradiation Test Laboratory
PNL	Pacific Northwest Laboratory
PORTS	Portsmouth Gaseous Diffusion Plant
PWR	Pressurized Water Reactor
RERTR	Reduced Enrichment Research and Test Reactor
RFP	Rocky Flats Plant
RHF	Reacteur a Haut Flux (High Flux Reactor)
RIA	Reactor Initiated Accident
RSWF	Radioactive Scrap and Waste Facility
SEFOR	Southwest Experimental Fast Oxide Reactor
SM-A1	Stationary Medium Power Plant No. 1
SNAP	System for Nuclear Auxiliary Power
SNF	Spent Nuclear Fuel
SPERT	Special Power Excursion Reactor Test
SPR	Single Pass Reactor
SRS	Savannah River Site
TC	Toxicity Characteristic

TCLP	Toxicity Characteristic Leaching Procedure
TMI	Three Mile Island
TRIGA	Training Reactor, Isotopic, General Atomics
TRU	Transuranic
TSR	Tower Shielding Reactor
UPCO	Uranium Pyrolytic Carbon Oxygen
VBWR	Vallecitos Boiling Water Reactor
VEPCO	Virginia Electric Power Company
WESF	Waste Encapsulation and Storage Facility
ZPR	Zero Power Reactor
ZPTR	Zero Power Test Reactor

Executive Summary

For the past fifty years one of the significant responsibilities of the Department of Energy (DOE), and its predecessor agencies, has been the development, testing, and production of nuclear weapons. In addition to this mission, the DOE has conducted non-weapons research and development to support the demonstration of nuclear reactors for the production of commercial electric power, as well as conducting fundamental research in the natural and physical sciences, including high energy and nuclear physics, magnetic fusion energy, medicine, and materials development. These activities have resulted in a significant quantity of legacy materials, called Materials-in-Inventory (MIN).

This report provides an overall perspective on the makeup and magnitude of DOE's MIN. The MIN discussed here is a composite from three primary sources:

1) a 1992 survey conducted by the Office of Waste Management (OWM). This data is presented in Appendices A, B, and C by DOE site, category and state respectively;

2) a subsequent effort to compile a comprehensive spent nuclear fuel inventory conducted by the OWM's Office of Spent Fuel Management (Appendix D) and;

3) supplemental information on nuclear materials supplied by the Material Planning Division of the Office of Defense Programs.

The approximate volume of MIN (as shown in Figure ES), is 340,000 cubic meters. About 55% of that volume is nuclear material, of which 95% is depleted uranium (Uranium-238). This occurs because natural uranium is 99.3% uranium-238 and uranium-235 is 0.7%. Therefore for every kilogram of uranium enriched in Uranium-235 (the fissile isotope), hundreds of kilograms of "depleted" uranium are left over. The second largest material category is elements and metals, which comprises 25% of MIN. The MIN represented by this category, made up predominantly of scrap metal, could increase as DOE transitions further away from weapons production and more toward decontamination and decommissioning of existing facilities and environmental cleanup. The two categories of chemicals and other materials make up 18% of MIN. Explosives, lead, alkaline metals and spent nuclear fuel represent the remaining 2%.

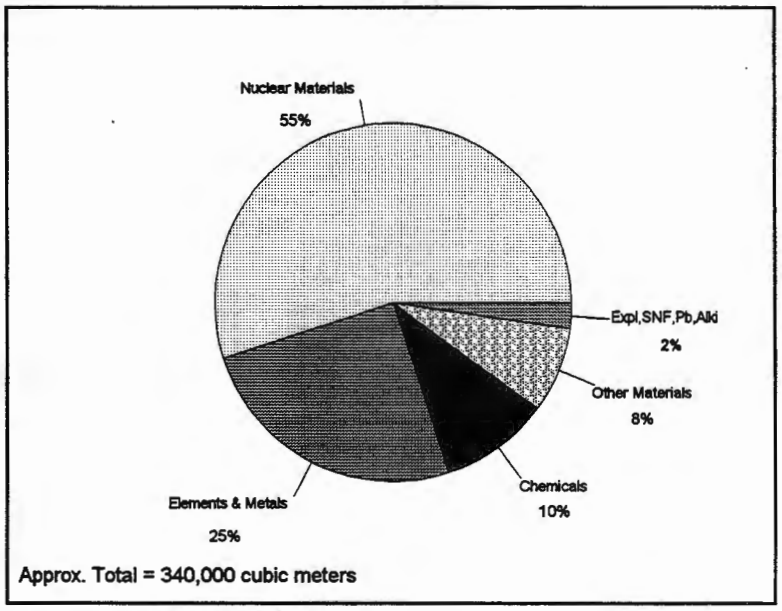

Figure ES. Materials in Inventory

MATERIALS-IN-INVENTORY

1.0 INTRODUCTION

For the past fifty years one of the significant responsibilities of the Department of Energy (DOE), and its predecessor agencies, has been the development, testing, and production of nuclear weapons. This included production of special nuclear and strategic materials, such as plutonium and uranium, as well as related research and development. This defense mission was accomplished through a series of integrated yet divergent production and assembly operations that comprised the DOE system.

Many DOE sites have non-defense missions not related to weapons production and conducted non-defense research and development to support the demonstration of nuclear reactors, for the production of commercial electrical power. These sites also conduct basic and applied research spanning such disciplines as: energy technologies, nuclear waste management, the nature of matter, medicine, mathematics and computing, and materials development. Both these defense and non-defense activities have resulted in a significant quantity of legacy materials called "Materials-in-Inventory" (MIN). This document provides an overall perspective on the makeup and magnitude of DOE's MIN.

2.0 BACKGROUND

The end of the cold war marked a turning point for the DOE. Over the last five years the DOE has seen its primary mission change from nuclear weapons production to environmental management. Materials formerly used as feedstock to support the weapons production mission have, in many cases, became material with an uncertain future use. Defense program facilities have been shut down and are currently being transitioned to the environmental management area within the DOE for decontamination, decommissioning and dismantlement.

Although DOE facilities have historically been involved in a broad array of activities, generally four types of sites existed within the DOE weapons complex: research

laboratories, materials production, warhead production, and test sites. Each type of site had a predominant mission and certain types of MIN were associated with each mission. For example, a research laboratory would typically have a material inventory consisting of small amounts of many different types of materials. Conversely, a material production site would typically have large amounts of a few types of materials. Table 1 groups the major defense mission sites throughout the DOE system into four types based on their former mission.

Table 1. Major DOE Defense Sites by Function

Research Laboratories Sites	Material Production Sites	Weapons Production Sites	Test Sites
Los Alamos National Laboratory, NM	Fernald Environmental Management Project (formerly Feed Materials Production Center), OH	Rocky Flats Plant, CO	Nevada Test Site, NV
Lawrence Livermore National Laboratory, CA	Ashtabula Plant, OH	Y-12 Plant, TN	Tonopah Test Range, NV
Sandia National Laboratories, NM and CA	Hanford Site, WA	Mound Plant, OH	
Idaho National Engineering Laboratory, ID	Savannah River Site, SC	Kansas City Plant, MO	
Oak Ridge National Laboratory, TN	Gaseous Diffusion Plants: Oak Ridge (K-25), TN Paducah, KY Portsmouth, OH	Pantex Plant, TX	

There are six primary nuclear materials used in nuclear reactors and nuclear weapons: uranium-235 and plutonium-239 (fissile materials), uranium-238 (fissionable materials) and tritium, deuterium, and lithium-6 (fusion materials). Except for uranium-238, which is abundant in nature, all of these materials must either be produced or concentrated in dedicated facilities. Uranium-235, lithium-6, and deuterium are concentrated from natural materials where as plutonium and tritium are produced in reactors using targets made from uranium-238 and lithium-6, respectively. Deuterium, the non-radioactive isotope of

hydrogen, is produced for heavy water reactor facilities. Various support facilities, such as separations, fabrication, and waste management, were required to complete the research and development, production and testing process. In some cases functions common to both the fuel cycle (mining and milling, enrichment, fabrication, reactor exposure, reprocessing and waste management) and the weapons cycle were accomplished at the same facility. For example, the uranium enrichment complex is an integral part of the fuel cycle and also produced uranium-235 for direct use in weapons. Other facilities were solely dedicated to a specific mission for that site.

Equally important are the non-defense or civilian related facilities and sites within the DOE complex. The major non-defense research sites include: Argonne National Laboratory East and West, in Illinois and Idaho respectively, Brookhaven National Laboratory in New York, Fermi National Accelerator Laboratory in Illinois, the Inhalation Toxicology Research Institute in New Mexico, Lawrence Berkeley Laboratory, the Energy Technology Engineering Center and the Stanford Linear Accelerator Center in California, the Idaho National Engineering Laboratory in Idaho[1], Princeton Plasma Physics Lab in New Jersey and Oak Ridge National Laboratory in Tennessee. Nearly every area of basic scientific knowledge is represented in the research activities of the laboratories within the DOE system. Activities at these sites cover a broad range, including research in commercial nuclear reactor safety design, high energy physics, applications of fusion energy for power, materials reliability research, alternate fuel technology for automobiles, and energy power conversion and conservation initiatives. Non-defense sites have other customers including the National Aeronautics and Space Administration, for whom the DOE is researching new space technology. The DOE conducted nuclear research for the medical community that included early work in the development of Magnetic Resonance Imaging. DOE also produces 90% of the radioisotopes used by the biomedical community, including those used in medical tests to detect heart disease, thyroid problems, bone fractures, cancer and blood diseases.

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[1] As indicated, some sites have dual missions and are included in the list of both defense and non-defense sites.

3.0 SCOPE OF THE MIN REPORT

For this report, MIN is grouped into three broad categories and eight subcategories: 1) nuclear materials (fissile and non-fissile), 2) spent nuclear fuel, and 3) miscellaneous materials (lead, alkali metals, chemical compounds, elements and metals, explosives and other materials). Table 2 provides examples of the material types under each of these categories.

Table 2. MIN Categories and Subcategories

Nuclear Materials:	
Fissile	Fissile: uranium-235, uranium-238 and plutonium-239. Includes stockpile and strategic reserves and recoverable scrap and residue.
Non-fissile	Non-fissile: depleted uranium hexafluoride, uranium metals, uranium oxides, lithium, tritium, and deuterium.
Spent Nuclear Fuel	Reactor fuel; fuel assemblies, rods, elements, and pins; Three Mile Island core debris; production targets and slugs; disrupted fuel.
Miscellaneous Materials	Alkali Metals: Highly reactive metallic elements, including lithium, sodium, potassium, rubidium, cesium and francium. Chemical Compounds: Combinations of elements that may have unique characteristics that differ from the individual elements. Elements and Metals: Metals: The largest category of metals includes scrap metal and shielding. Elements: Chemical substances such as mercury, beryllium, yttrium, boron. Explosives: Materials used in manufacturing detonators. Lead: Usually in brick form to be used for shielding. Other Materials: "Odds and ends" - Spare parts, process equipment, electronic equipment, and concrete shielding, which do not easily fall into the other categories.

The estimates of MIN provided in this report were obtained from three sources. The primary source was the 1992 survey conducted by the Office of Waste Management to determine the amounts and types of these materials stored by the DOE. Appendix A lists the sites responding to the survey and Appendix B lists the materials reported by those sites. It should be noted that sites that were solely environmental restoration sites or Formerly Utilized Site Remedial Action Program (FUSRAP) sites were not asked to respond to the survey. Some sites surveyed were unable to respond. A follow-up telephone polling of these sites indicated potential MIN inventories were small and therefore inclusion of data from the non-reporting sites would not change the overall picture of MIN in any significant manner.

For the materials that were not captured in detail for this report, there is another effort underway by the DOE's Office of Policy, Planning and Program Evaluation. This effort involves the development of a Baseline Inventory Report of both defense and non-defense materials. The project teams associated with this effort will update existing data and address data gaps. The scope of the Baseline Inventory Report includes surplus nuclear materials, contaminated and uncontaminated facilities, other assets, and all categories of waste.

Certain materials were excluded from the 1992 survey. These excluded materials included any program accountable materials (materials that are controlled consistent with a particular threat due to their strategic and/or monetary value), which were in product form or in-process in operating facilities. To obtain estimates of these materials, the Materials Planning Division of the DOE's Office of Defense Programs was consulted. These estimates are included and discussed in Section 4.1 of this report.

Quantities of Spent Nuclear Fuel (SNF), which overall represent a very small portion of MIN (0.4% by volume), are presented as a separate category because of the inherent risks and radiation protection requirements associated with its management. The recently formed Office of Spent Fuel Management has several on-going efforts to ensure its safe management and the protection of human health and the environment. Information from a recent effort,

by the Office of Spent Fuel Management, to compile a comprehensive SNF inventory has been included in Section 4.2 and Appendix D of this report.

4.0 DISCUSSION

This section summarizes the MIN information while detailed data can be found in the Appendices. Information by material category is provided in Appendix B. Appendix C provides the MIN information by State. Information on SNF is presented in Appendix D.

4.1 Nuclear Materials

4.1.1 Fissile Material

Fissile material primarily refers to plutonium-239 and uranium-235, which are used in nuclear weapons production and as fuel in power reactors. Uranium-233 is used to a lesser extent. To keep the report unclassified the amount of fissile materials have been aggregated with non-fissile materials[2]. The total amount of plutonium (the sum of weapons grade plutonium and reactor grade plutonium), is approximately 300 m^3. The amount of uranium-235 and uranium-233 is included in the aggregate uranium data (depleted, normal and enriched). The overall quantity of this fissile material category is small (<4%) when compared to the 340,000 m^3 of MIN, and requires its own management controls.

4.1.2 Non-Fissile Material (primarily Depleted Uranium)

As previously indicated in Table 2, non-fissile material includes depleted uranium hexafloride, uranium metals, uranium oxides, lithium, tritium and deuterium.

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[2] Classified information can be provided to appropriately cleared individuals, upon request.

Figure 1 depicts the depleted uranium inventory, which accounts for about 99% of the non-fissile nuclear material inventory. Lithium metal is included in the Alkali Metals section and lithium hydroxide is discussed within the Chemical Compounds section of this report. The other non-fissile nuclear materials in this category are tritium, deuterium, and thorium which are very small quantities when compared to the depleted uranium inventory. All of these materials must be managed to protect human health and the environment.

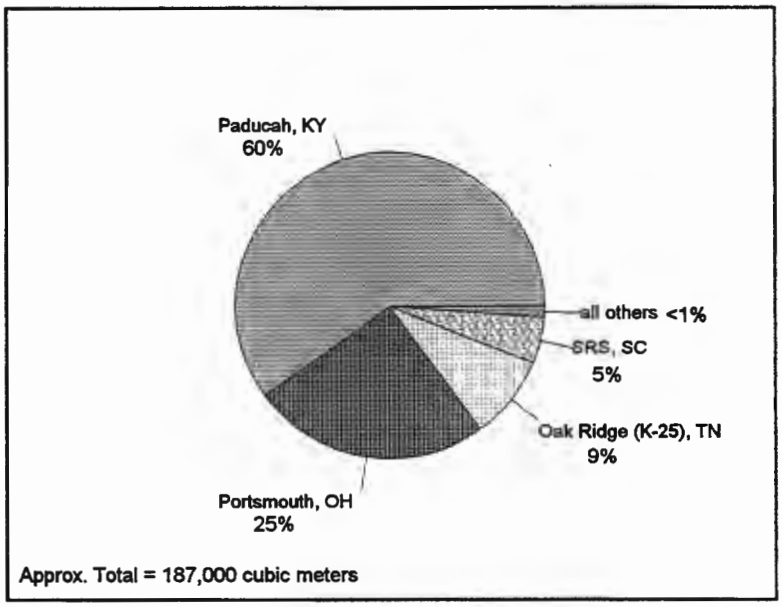


Figure 1. Depleted Uranium Stored at DOE Sites

Natural uranium consists of several isotopes with uranium-238 comprising about 99.3%. Because the natural abundance of the fissile isotope uranium-235 is so low, a significant effort is required to concentrate the uranium-235 to the levels necessary for fission reactors and weapons applications. The activity of concentrating uranium-235, conducted at the gaseous diffusion plants located in Oak Ridge (K-25), Tennessee; Paducah, Kentucky; and Portsmouth, Ohio is both equipment and energy intensive. For every kilogram of uranium enriched in uranium-235, hundreds of kilograms of "depleted" uranium (U-238) are generated. As previously shown in Figure 1, there is approximately 187,000 m^3 of depleted uranium stored at DOE sites. Of the total depleted uranium inventory, about 92% is in the form of uranium hexafluoride, a compound stored in cylinders. The distribution of the depleted uranium inventories corresponds to the Oak Ridge (K-25), Paducah, and Portsmouth Gaseous Diffusion Plants' involvement in the enrichment process.

Depleted Uranium in Storage at K-25

4.2 Spent Nuclear Fuel

SNF is fuel that has been withdrawn from a nuclear reactor following irradiation, but that has not been reprocessed to remove its constituent elements. In 1992, the Secretary of Energy directed that reprocessing of SNF to recover highly enriched uranium, for use as production reactor fuel, be phased out in response to the changing world situation, and the need to reduce the weapons stockpile. As a result, DOE is currently storing SNF at several of its sites. Volumetric SNF data presented in this report largely reflects that of the storage containers, and includes the volumes of the fuel assembly and subassembly elements. Mass data on SNF inventories includes only the mass of the heavy metals in the spent fuel (e.g., uranium).

Figures 2 and 3, therefore, represent contrasting perspectives on the quantity of SNF stored in the DOE complex. The total stored volume of SNF is about 1,400 m^3, with approximately one-half located at the Idaho National Engineering Laboratory in Idaho Falls, Idaho (Figure 2). The total stored mass of SNF is about 2,674 metric tons of heavy metal, with the majority of SNF stored at Hanford, located in Richland, Washington (Figure 3). Most of the SNF stored at Hanford is N-reactor fuel, which is a very heavy fuel, and accounts for the large portion of DOE's Hanford SNF inventory, in terms of mass. The SNF comprising the "Other" category in Figure 3, is stored at Argonne National Laboratory-West, Brookhaven National Laboratory, Los Alamos National Laboratory, Oak Ridge National Laboratory, Sandia National Laboratories-New Mexico, the West Valley Demonstration Project, Public Service of Colorado, and a small amount at various universities.

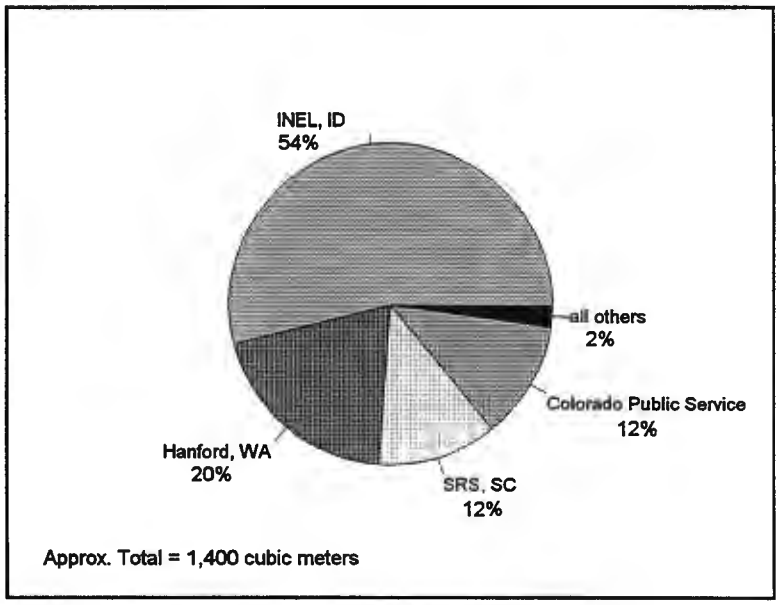


Figure 2. Spent Nuclear Fuel Stored at DOE Sites Based on Volume

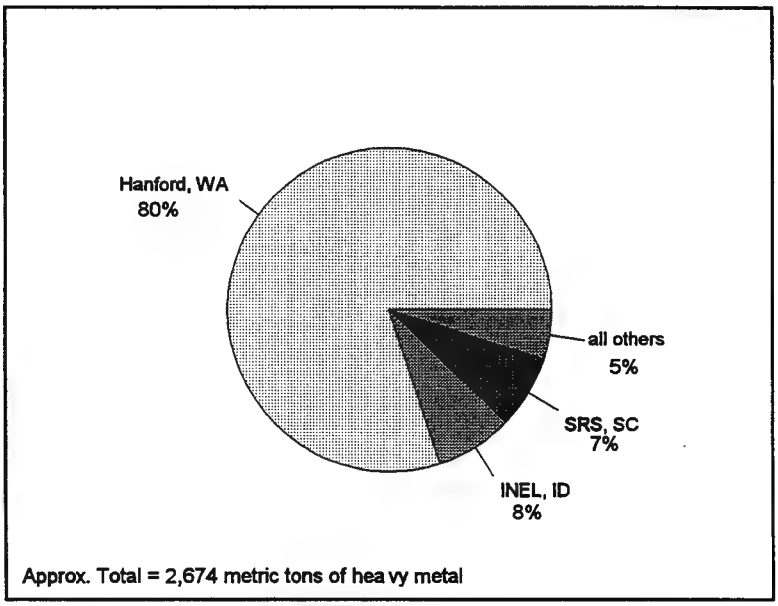


Figure 3. Spent Nuclear Fuel Stored at DOE Sites Based on Mass of Heavy Metal

Historically, the DOE had reprocessed SNF at three locations: the Hanford Site, the Savannah River Site and the Idaho National Engineering Laboratory, to recover and recycle uranium and plutonium. Most of this SNF was produced in production reactors at the Hanford Site and the Savannah River Site. These reactors are no longer operating, but they previously provided materials for DOE's defense programs and research and development programs. Smaller quantities of SNF at other locations have resulted from experimental reactor operations and from research conducted by various university and Government-owned test reactors. In addition, since 1957, SNF from nuclear-powered naval vessels and naval reactor prototypes (operating reactors used for land-based training) has been transported from shipyards and prototype sites to the Naval Reactors Facility, at the INEL for testing and examination.

On June 20, 1994, DOE published a draft "Environmental Impact Statement for Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs." The purpose of this Environmental Impact Statement is to analyze alternatives for the management of existing and foreseeable inventories of SNF within the DOE system. The SNF inventory data obtained to support the development of the Environmental Impact Statement is presented in Appendix D.

4.3 Miscellaneous Materials

The following sections discuss the six subcategories of miscellaneous materials: alkali metals, chemical compounds, elements and metals, explosives, lead, and other materials. Materials were grouped under these subcategories either

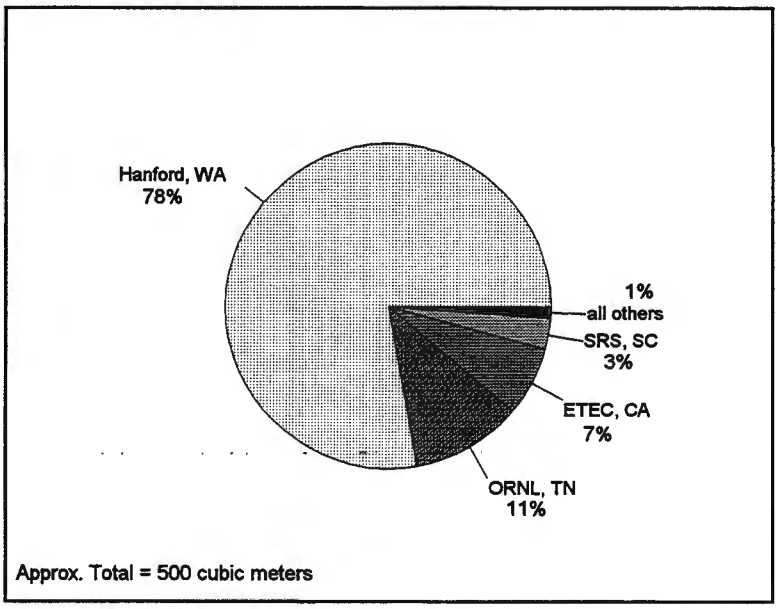


Figure 4. Alkali Metals Stored at DOE Sites

because of quantity of material, such as elements and metals, or because of certain properties, such as alkali metals, lead, explosives or chemicals.

4.3.1 Alkali Metals

Alkali metals stored at DOE sites include lithium and sodium metal. Sodium metal, which represents 75% of the alkali metals volume is used as a coolant for certain reactors, such as Hanford's Fast Flux Test Facility. It is also used at the Energy and Technology Engineering Center, and the Oak Ridge National Laboratory for shielding. A small amount of lithium metal (< 10 m^3) is stored at the Oak Ridge National Laboratory for shielding radiological experiments and at the Savannah River Site (< 2 m^3) for research purposes.

4.3.2 Chemical Compounds

The chemical compounds in inventory range from tanks and drums of process chemicals to small containers of materials used in research and development activities. Approximately 7,500 m^3 of chemicals were reported by DOE sites in response to the 1992 survey. Since that time as shown in Figure 5, an additional 25,500 m^3 of chemical compounds have been identified bringing this inventory to approximately 33,000 m^3. The 25,500 m^3 inventory consists of various lithium compounds found throughout the DOE system. Lithium is used as a source material in the production of tritium and directly in thermonuclear weapons. The Portsmouth Gaseous Diffusion Plant in Portsmouth, Ohio; the Oak Ridge Gaseous Diffusion Plant (K-25) in Oak Ridge, Tennessee; and the Y-12 Plant in Oak Ridge, Tennessee, have lithium compounds. The exact quantities

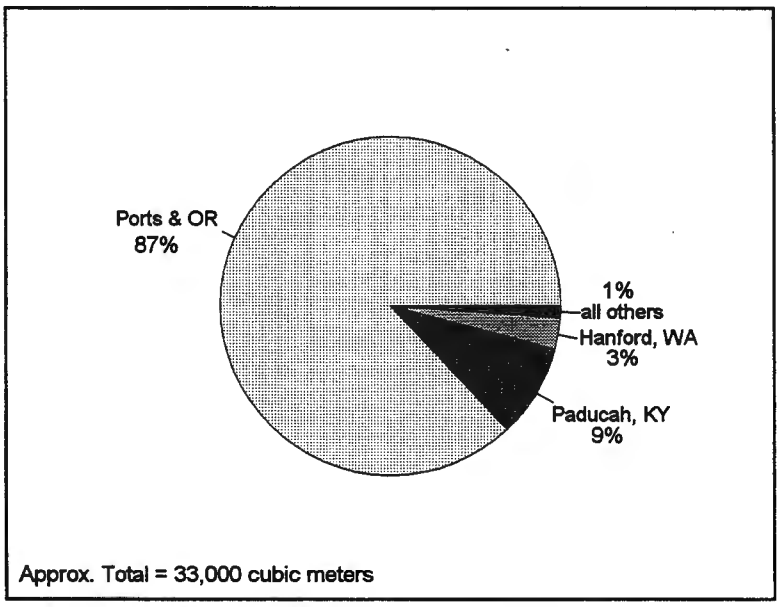


Figure 5. Chemicals Stored at DOE sites

of lithium compounds at Portsmouth and at K-25 are classified, so no volume is reported for these chemicals at a site level[3]. Consequently, the chemical compounds for Oak Ridge and Portsmouth are shown as a combined entry in Figure 5. In addition, small quantities of the Portsmouth lithium inventory are occasionally purchased by commercial industry.

Other large volume chemicals in inventory are acids, located at the Hanford Site, K-25, and the Paducah Gaseous Diffusion Plant, in Paducah, Kentucky. Coolants, which are substances used to remove heat, are primarily located at K-25.

4.3.3 Elements and Metals

Elements and metals were reported by several DOE facilities. Ninety-nine percent of this inventory was scrap metal, the majority from decontamination and decommissioning efforts being conducted at several DOE facilities. Efforts are on going to identify other uses or recycling possibilities for the scrap metal. As shown in Figure 6, there is approximately 86,000 m^3 of metals and elements, primarily scrap metal, stored at DOE sites. The vast majority of the scrap metal was reported at the Paducah Gaseous Diffusion Plant. Because additional decontamination and decommissioning activities have occurred since the 1992 survey, it is expected that there may be significant scrap metal inventories that have accumulated at other

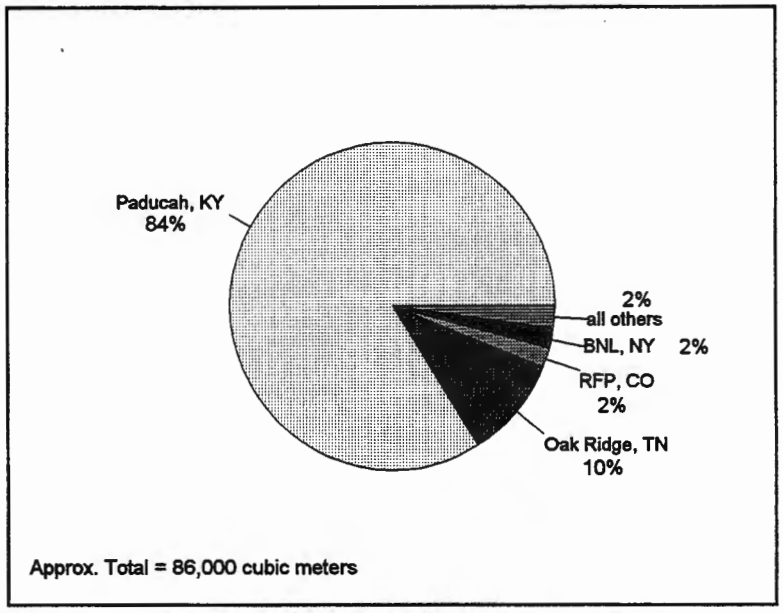


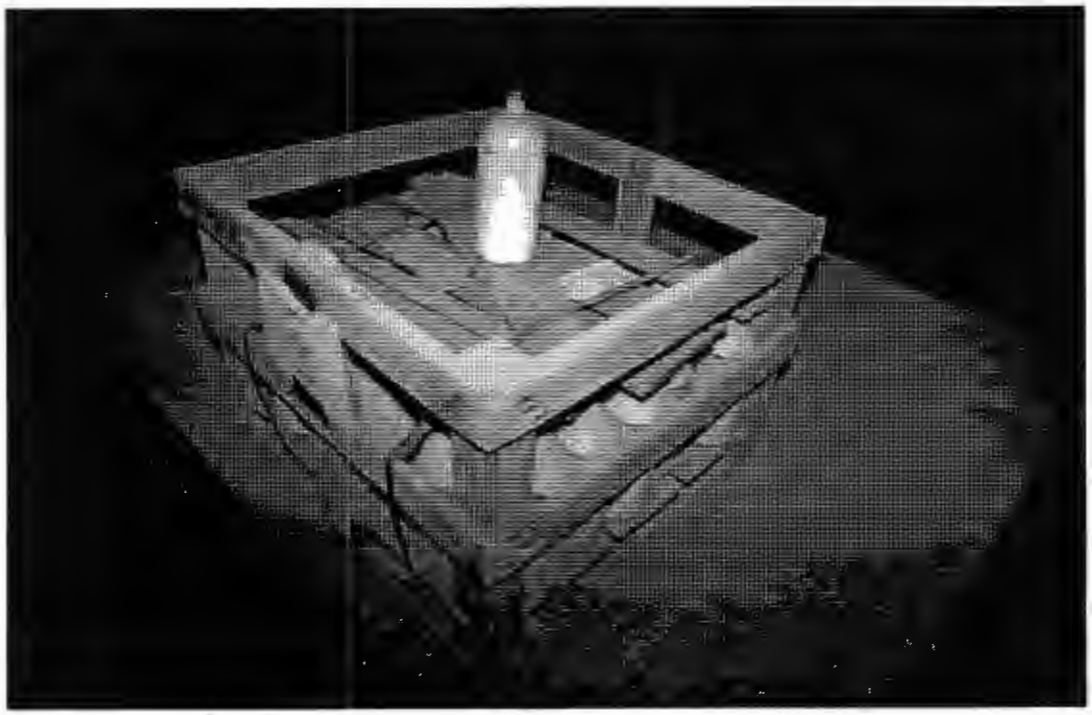
Figure 6. Element & Metals Stored at DOE Sites

[3] Classified information can be provided to appropriately cleared individuals upon request.

DOE facilities. For example the decontamination and decommissioning of the power houses at Savannah River Site buildings had not begun at the time of the 1992 survey, and therefore, scrap metal quantities resulting from those activities were reported as unknown.

Contaminated Scrap Metal at Y-12

Elements reported in the 1992 survey included a large amount of mercury at the Y-12 Plant in Oak Ridge, Tennessee. Cadmium, which is used as a neutron absorber in reactor control rods, was reported at several facilities. Beryllium and yttrium were reported at more than one facility. The Rocky Flats Plant in Colorado reported several elements and metals, mostly in very small quantities, reflecting the sudden shutdown of facilities and operations at the plant in 1992, with no formal plans for future use of the remaining items in the buildings.



Mercury in Storage at Y-12.

4.3.4 Explosives

The bulk of the explosives stored at DOE sites were used in warhead and warhead delivery systems. As shown in Figure 7, there are approximately 2,300 m^3 of explosives stored at DOE sites, the majority of which are at the Sandia National Laboratory, in Albuquerque, New Mexico. At this facility, DOE conducted research on nuclear weapons, among other things. Some explosives are also

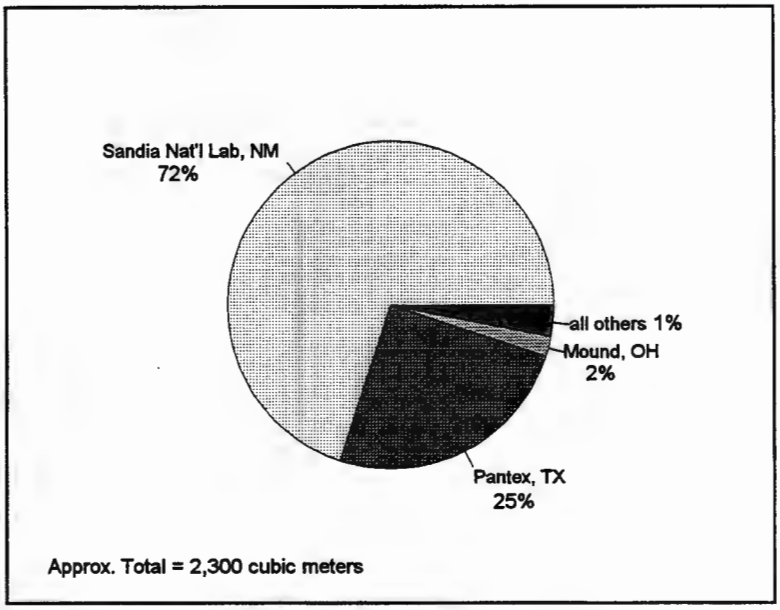


Figure 7. Explosives Stored at DOE Sites

at the Mound Plant in Dayton, Ohio, which manufactured detonators that set off chemical high explosives. Explosives are also located at the Pantex Plant in Amarillo, Texas, where warheads were assembled and high explosives were fabricated.

4.3.5 Lead

Lead is used throughout the DOE complex for radiation shielding purposes. Lead's properties make it an excellent material to be used as shielding for experiments and can often be reused without decontamination or processing. Lead is also an excellent material to be used in case of a radiological emergency, because it is malleable and can be positioned in many configurations to provide radiation shielding. Approximately 840 m^3 of lead was reported at DOE sites (See Figure 8). The 1992 survey grouped lead into five categories; 1) unused lead in storage for direct use, 2) used lead in storage for direct reuse in identified applications or where there is reasonable expectation for reuse, 3) used lead in storage for reuse in identified applications, or where there is a reasonable expectation for reuse, but which require decontamination, reclamation, or processing by identified and available technologies, 4) used (contaminated) lead in storage for potential reuse for which the application is not identified or where there is not reasonable expectation for reuse, and 5) lead that does not fit into categories 1-4. The results show 61% of the lead inventory at one facility, Fermi National Accelerator Laboratory (Fermilab) in Illinois. The Lawrence Berkeley Laboratory located Livermore California, the Savannah River Site, the Oak Ridge National Laboratory, and the Brookhaven National Laboratory located in Upton, New York account for most of the remaining lead reported. Because it is

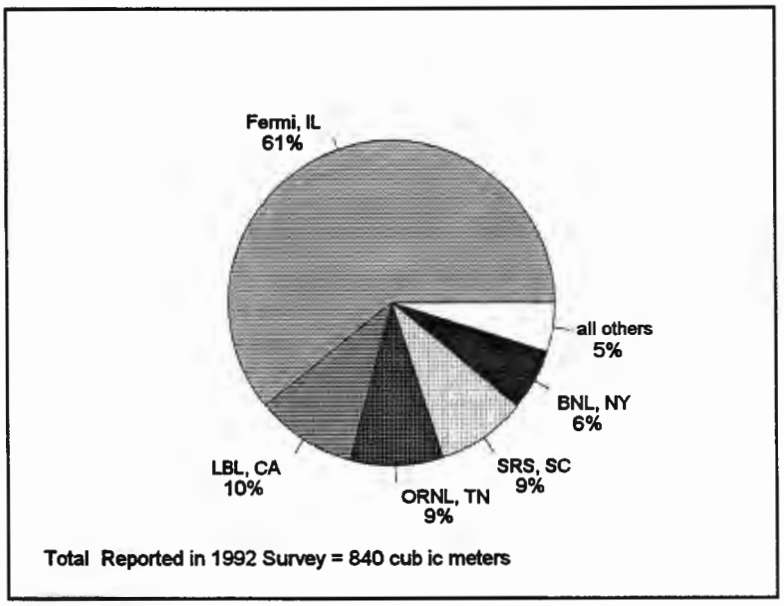


Figure 8. Lead Stored at DOE Sites

known that lead is used widely throughout the DOE system, a follow-up phone survey of DOE sites was done concerning their reported lead inventories. Initial indications are that the quantity of lead at other major DOE labs is of the same order of magnitude as that reported by Fermilab. However, due to the efforts required to do a complete lead inventory it was decided that this data would be captured under the Baseline Inventory Report mentioned in section 3.0 of this report, and therefore, Figure 8 was not adjusted.

4.3.6 Other Materials

This category includes the MIN reported that did not readily fit into any of the above subcategories of materials. As shown in Figure 9, some sites reported inventories of equipment and hardware that are in storage to be used as spare parts or replacement parts when needed. Large amounts of concrete and steel used for shielding were reported by the Brookhaven National Laboratory, the Oak Ridge National Laboratory, and the Lawrence Berkeley Laboratory. A large amount of surplus epoxy resin was reported by K-25. The Rocky Flats Plant reported several items, each with very small volumes, which did not easily fit into one of the subcategories previously discussed. This vast array of materials again demonstrates the sudden shutdown of facilities and operations at the plants while formal plans for disposition of remaining items in the buildings were being developed. Several sites, such as the Y-12 Plant reported surplus used tools and equipment.

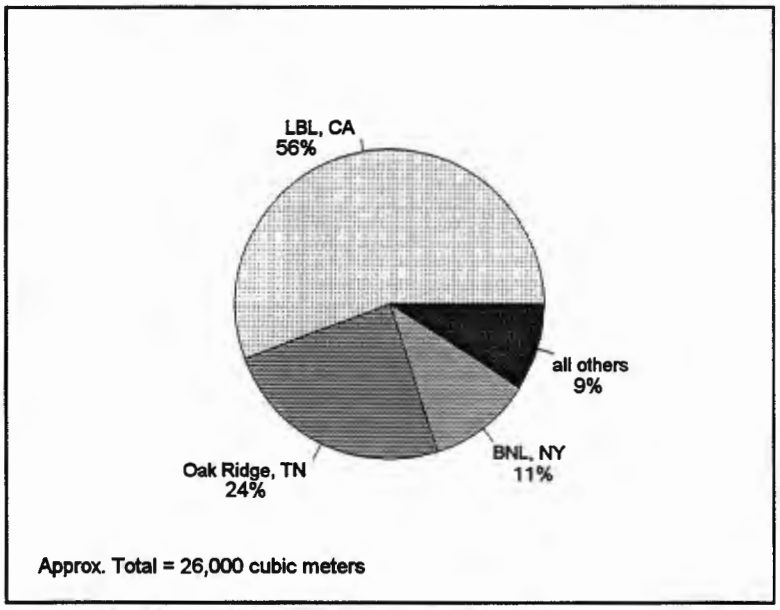


Figure 9. Other Materials at DOE sites

5.0 SUMMARY

In general, there is approximately 340,000 m^3 of MIN stored at DOE sites. Depleted uranium comprises roughly half of the total MIN. Scrap metal is the next most abundant material at one-quarter. Under the category of Miscellaneous Materials the subcategories of Chemicals, and Other Materials account for about 8-10% each. The remaining subcategories (alkali metals, elements and metals, lead, SNF, and explosives) combined, account for the remaining 2%. Because the depleted uranium is primarily stored at gaseous diffusion plants located in Kentucky, Ohio and Tennessee, and because scrap metal is such a large component of the overall MIN, almost 90% of DOE's MIN is stored at sites located in these three states (see Figure 10).

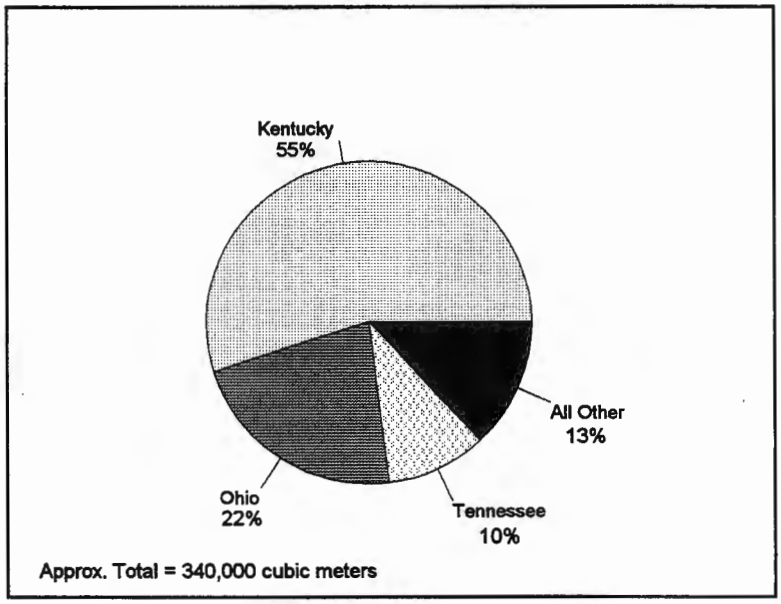


Figure 10. Material-in-Inventory (by State)

6.0 SUMMARY BY STATE

Not all DOE sites and facilities were mailed the questionnaire associated with the 1992 survey. Facilities associated with the Naval Nuclear Propulsion Program were not included because the Naval Nuclear Propulsion Program manages its nuclear materials pursuant to separate authority established under Executive Order 12344 (enacted into law by Public Law 98-525). Sites where remediation or environmental restoration were the only activities were not included. The following briefly describes the major characteristics of the DOE MIN located in various States.

California - Five research laboratories located in California responded to the 1992 survey. By volume, the largest category of materials is radioactively contaminated steel and concrete shielding stored at the Lawrence Berkeley Laboratory. The remainder of the material is relatively small quantities of various metals and nuclear materials. Because the facilities located in California are primarily research oriented, as opposed to production facilities, the 1992 data provides a good indication (both of quantity and type) of MIN stored at facilities located in California. No spent nuclear fuel is located in the state. Less than 5% of the total estimated MIN is located in California.

Colorado - Two facilities are located in the State of Colorado that have an inventory of DOE materials; the Rocky Flats Plant and the Public Services Company of Colorado. The MIN at the Rocky Flats Plant is primarily scrap metal (mostly radioactively contaminated with a smaller amount of clean non-radioactive scrap metal). Many different chemicals comprise a small fraction of the total remaining MIN at the Rocky Flats Plant. The Public Services Company of Colorado is storing about 160 m^3 of spent nuclear fuel from the Fort Saint Vrain reactor for DOE. Less than 1% of the total estimated DOE MIN is located in Colorado. Although the Rocky Flats Plant was a weapons complex production facility, its primary function (component fabrication from plutonium and other metals) did not result in significant quantities of the reportable MIN.

Florida - DOE has one facility, the Pinellas Plant, located in the State of Florida. No response to the 1992 survey was received for the Pinellas Plant. However, as one of the weapons component production facilities any program accountable material would have been included in the data provided by Defense Programs. Other MIN would be expected to be small quantities because the facility's function was small-scale production of selected high-technology nuclear weapons components, including neutron generators, lightning arrester connectors, capacitors and optoelectronics.

Idaho - The amount and types of MIN reported for the two facilities located in Idaho, the Idaho National Engineering Laboratory and Argonne National Laboratory-West, are consistent with their respective missions. The former mission of the Idaho Chemical Processing Plant was to reprocess research and Navy Nuclear Propulsion Program spent nuclear fuel. Consequently the MIN at Idaho are primarily chemicals associated with the reprocessing activity and spent nuclear fuel that has not been reprocessed. The Idaho National Engineering Laboratory accounts for more than half of the total spent nuclear fuel inventory (on a volume basis) however the Spent Nuclear Fuel category of MIN is a minor fraction (<0.4%) of the total estimated MIN throughout DOE. From a total MIN standpoint Idaho has <.2% of the total estimated inventory.

Illinois - DOE has two facilities located in the State of Illinois, Argonne National Laboratory East and Fermi National Accelerator Laboratory. MIN at these two facilities amount to about 0.1% of the total estimated MIN in the DOE system. The material in Illinois is almost exclusively lead in various forms. Small amounts of spent nuclear fuel, freon, and beryllium were also reported.

Iowa - DOE has one facility, Ames Laboratory, located in the State of Iowa. The primary mission of Ames Laboratory is to conduct pure and applied research in physical, mathematical, and engineering sciences that underlie energy technologies. The laboratory reported a small amount of yttrium.

Kentucky - The Paducah Gaseous Diffusion Plant is the only DOE facility in the State of Kentucky. Its mission, as one of three uranium enrichment facilities in the DOE system, is to produce uranium enriched in the uranium-235 isotope. This is an equipment and energy intensive operation that has a significant secondary product, depleted uranium. Consequently it is no surprise that the Paducah Gaseous Diffusion Plant accounts for over 50% (mainly scrap metal and depleted uranium) of the total MIN in DOE.

Missouri - Only one of two DOE facilities located in the State of Missouri, the Kansas City Plant, was included in the 1992 data call. The other site is the Weldon Spring Site, which has not been used to process uranium and thorium ores since 1966 and is currently being remediated in accordance with the Comprehensive Environmental Response, Compensation and Liability Act process. The Kansas City Plant produces electrical, electronic, electro-mechanical, plastic, and non-fissionable metal components for nuclear weapons. Consequently, it reported MIN (of unknown quantities) characterized as "electronic assemblies." An unknown quantity of metal fluoride was also reported.

Montana - The only DOE facility in Montana is the Component Development and Integration Facility in Butte. Although no response to the 1992 data call was received for this facility, its energy technology demonstration activity is so narrow that MIN stored at the facility, if any, would be very small compared with the total inventory.

Nevada - Neither of the two DOE facilities located in Nevada, the Yucca Mountain Site Characterization Project and the Nevada Test Site, reported any MIN. However, the nature of the operations at the two facilities are such that MIN would not be expected. The Yucca Mountain Site Characterization Project is involved in scientific studies of the site relative to potentially locating a nuclear waste repository. The Nevada Test Site is a nuclear weapons testing facility. Its mission also includes waste management and disposal.

New Jersey - The DOE has responsibility for five sites or facilities in the State of New Jersey. No response was received from the Princeton Plasma Physics Laboratory, the only New Jersey facility included in the 1992 survey. It is a single purpose laboratory dealing with fusion energy and any resulting MIN would be very small quantities. The New Brunswick Laboratory, the Middlesex Sampling Plant, the Wayne Interim Storage Site, and the Maywood Interim Storage Site are remediation sites, and as previously indicated, were not included in the MIN effort.

New Mexico - Three of the five DOE facilities located in the State of New Mexico are represented in this report. Those not included, (the Waste Isolation Pilot Plant and Ross Aviation, Inc.) would not be expected to have any MIN. The MIN reported from the remaining sites is mostly comprised of rockets, rocket motors, hardware and components, much of which is explosive. Some "unknown" quantities of nuclear materials were also reported but were captured in the supplemental data obtained from the Office of Defense Programs. The Inhalation Toxicology Research Institute reported only small quantities of lead. The total MIN associated with DOE facilities or sites in New Mexico account for less than 1% of the total DOE MIN. About 3 m^3 of SNF is located at the Los Alamos and Sandia National Laboratories.

New York - Two DOE sites located in the State of New York, the Brookhaven National Laboratory and the West Valley Demonstration Project, were included in the survey. Concrete and steel shielding comprise 99% of the MIN reported for Brookhaven National Laboratory. The West Valley Demonstration Project reported a small quantity of lead. Both sites have a small inventory (< 10 m^3) of spent nuclear fuel. The MIN located in New York accounts for about 2% of the total MIN.

Ohio - Two DOE sites are located in the State. The Mound Plant has conducted testing and development of nuclear weapons components and processes since 1947. It reported minor amounts of various nuclear materials with tritium components and explosives comprising $> 95\%$ of its inventory. Uranium enrichment operations at the Portsmouth Gaseous Diffusion Plant produced a large inventory of depleted uranium. A significant quantity of depleted lithium is also located at Portsmouth. MIN at Portsmouth accounts for approximately 22% (primarily depleted uranium) of the total MIN in the DOE system.

South Carolina - The Savannah River Site reported a variety of small quantities of chemicals and miscellaneous items. Depleted uranium, scrap metals, and SNF account for 99% of the MIN reported by the Savannah River Site. This total represents only about 3% of the total MIN throughout the DOE system.

Tennessee - The three sites in Tennessee responded to the 1992 survey. The K-25 Site reported significant quantities of depleted uranium, scrap metal and process equipment, depleted lithium, and epoxy resin. The most significant volumes of materials reported by the Oak Ridge National Laboratory were scrap metal and concrete shielding. The Y-12 Plant serves as a manufacturing technology center for key processes associated with nuclear weapons components. Although surplus machine tools, mercury, and scrap metal comprised most of the reported MIN from Y-12, numerous excess chemicals and proprietary products were also reported. When adjusted for the program accountable materials associated with the Oak Ridge Reservation, the MIN located in Tennessee accounts for about 10% of the total DOE MIN. Of the MIN in Tennessee, depleted uranium and scrap metals comprise about 75%.

Texas - At the time of the 1992 survey, the Pantex Plant was engaged in weapons assembly, maintenance and modification. Now its mission is primarily disassembly of weapons retired from the nuclear weapons stockpile, as well as those resulting from dismantlement activities. The only MIN reported by Pantex in response to the 1992 survey was high explosive powder which amounts to less than 0.1% of the total MIN throughout DOE.

Washington - The Hanford Site's mission involved reprocessing and recovering special nuclear material. Consequently, two-thirds of the MIN located in Washington is in the form of excess process chemical solutions. Alkali metals and scrap metals account for an additional 25%. The Hanford Site stores a significant portion of the DOE inventory of SNF (20% by volume; 53% by mass of heavy metal). However, the MIN located in Washington amounts to less than 1% of the total DOE MIN.

Other States - The other States are expected to have only minor amounts of DOE MIN, if any. Any MIN would be of small quantities and typically materials such as lead shielding, laboratory chemicals, and scrap metal.

Appendix A

Sites that Responded to the Survey

Table A.1 List of Sites that Responded to the Survey.

State	DOE Site
California	Energy Technology Engineering Center Lawrence Berkeley Lab Lawrence Livermore National Lab Stanford Linear Accelerator Center Sandia National Laboratory - Livermore
Colorado	Rocky Flats Plant
Idaho	Argonne National Lab - West Idaho National Engineering Lab
Illinois	Argonne National Lab - East Fermilab
Iowa	Ames Laboratory
Kentucky	Paducah Gaseous Diffusion Plant
Missouri	Kansas City Plant
New Mexico	Inhalation Toxicology Research Institute Los Alamos National Lab Sandia National Lab - Albuquerque
New York	Brookhaven National Lab West Valley Demonstration Project
Ohio	Mound Plant Portsmouth Gaseous Diffusion Plant
South Carolina	Savannah River Site
Tennessee	K-25 Gaseous Diffusion Plant (Oak Ridge) ORISE Oak Ridge National Lab Y-12 Plant (Oak Ridge)
Texas	Pantex Plant
Washington	Hanford Site

Appendix B

The Survey Data

Table B-1. Alkali Metals.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
Brookhaven National Lab	Enriched lithium	Yes	Lithium	No	Disposition determination	0.003	
					BNL Total	**0.003**	
Energy and Technology Engineering Center	Sodium metal	Yes	Sodium	No	Disposition determination	37.840	
					ETEC Total	**37.840**	
Hanford Site	Sodium metal	Yes	Sodium	LL	Disposition determination	177.000	
	Non-radioactive alkali metal	Yes	Alkali metals	No	Future use	220.000	
					Hanford Total	**397.000**	
Idaho National Engineering Lab	Sodium-potassium alloy	Yes	Na, K	No	Disposition determination	0.0790	
					INEL Total	**0.0790**	
Los Alamos National Lab	Enriched lithium	Unknown		No	Disposition determination	0.09	42.000
					LANL Total	**0.09**	
Oak Ridge National Lab	Lithium hydride shield	Yes	Lithium	No	Future use	6.98	7480.000
	Lithium shield	Yes	Lithium	No	Future use	0.0013	
	Sodium shielding	Yes	Sodium	LL	Future use	51.4	
					ORNL Total	**58.38**	
Sandia National Lab - Alb.	Enriched lithium	Unknown		LL	Disposition determination	0.35	163.000
					SNL-Alb. Total	**0.35**	
Sandia National Lab - Livermore	Enriched lithium	Yes	Lithium Salts	LL	Future use	2.000	
					SNL-Livermore Total	**2.000**	
Savannah River Site	Lithium-aluminum alloy	No		No	Disposition determination	13.500	
	Enriched lithium	Yes	Lithium	No	Disposition determination	0.850	
	Natural lithium	Yes	Lithium	No	Disposition determination	1.100	
					SRS Total	**15.450**	
					TOTAL	**511.192**	

Table B-2. Chemical Compounds.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
Fermilab	R11 Freon	Yes	Freon	No	Future use	1.100	
					Fermilab Total	**1.100**	
Hanford Site	Contaminated TBP/NPH solvent	Yes	Nitric acid, TBJ, KOH, H_2SO_4	LL	Future use	76.000	
	Purex bulk cold processing chemicals	Yes	H_2O_2, ammonium nitrate	No	Future use	100.090	
	Purex canyon acidic water heel	Yes	Acid, possible	LL	Other	194.040	
	Purex essential material tank heel	Yes	HNO_3, TBP, KOH, H_2SO_4	No	Other	5.670	
	Recovered nitric acid	Yes	Nitric acid, maybe heavy metals	LL	Future use	486.200	
					Hanford Total	**862.000**	
Idaho National Engineering Lab	15% $Al(OH)_3$, 35% $Na(NO_3)$, 50% H_20	No		No	Future use	0.416	
	Aluminum oxide calcine	No		No	Future use	22.00	
	Aluminum nitrate	Yes	Oxidizer	No	Future use	56.20	
	Boric acid solution	Yes	Acid	No	Disposition determination	24.40	
	Boric acid (enriched)	Yes	Boric acid	No	Disposition determination	0.72	
	Boric acid	Yes	Boric acid	No	Future use	0.72	
	Cadmium nitrate solution	Yes	Cd and dilute nitric acid	No	Future use	0.63	
	Cadmium nitrate	Yes	Cadmium	No	Disposition determination	11.40	
	Cadmium sulfate	Yes	Cadmium	No	Disposition determination	11.40	
	Calcine	Unknown		HL	Future use	0.05	
	Calcium nitrate	No		No	Disposition determination	58.50	
	Citric acid	Yes	Citric acid	No	Disposition determination	1.60	
	Copper (II) nitrate	No		No	Future use	0.009	
	Denitrator product	No		No	Future use	0.060	
	Fluoboric acid	Yes	Fluoboric acid	No	Disposition determination	1.800	
	Fluoboric acid (bulk)	Yes	Fluoboric acid	No	Disposition determination	3.200	
	Fluorinel material	No		No	Disposition determination	0.19	
	Gadolinium oxide	No		No	Disposition determination	1.300	
	Hydrocarbon diluent	Unknown	Maybe benzene	No	Disposition determination	1.200	
	Hydrochloric acid	Yes	HCl	No	Disposition determination	0.200	

Table B-2. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
	Hydrofluoric acid (bulk)	Yes	HF	No	Disposition determination	12.500	
	Hydrofluoric acid	Yes	HF	No	Disposition determination	0.300	
	Kerosene	Yes	Kerosene	No	Future use	68.400	
	Knox gelatin	No		No	Disposition determination	0.040	
	Methyl isobutyl ketone (hexone)	Yes	Hexone	LL	Disposition determination	0.250	
	N-Dodecane	Unknown	Maybe benzene	No	Disposition determination	2.900	
	Nickel nitrate II	Yes	Nickel nitrate	No	Future use	0.018	
	Nitric acid	Yes	Nitric acid	No	Future use	112.900	
	Oxalic acid	Yes	Oxalic acid	No	Disposition determination	1.400	
	Pilot plant calcine	Yes	Cd, Cr, Pb, Hg	No	Future use	2.40	
	Potassium permanganate	Yes	Potassium permanganate	No	Disposition determination	0.400	
	Sodium hydroxide	No		No	Disposition determination	3.200	
	Sodium carbonate	No		No	Disposition determination	1.800	
	Sulfamic acid (solid)	No		No	Future use	0.41	
	Tartaric acid	No		No	Disposition determination	1.900	
	Tri-butyl phosphate	No		No	Disposition determination	1.200	
	Turco 4324	No		No	Disposition determination	0.900	
	Turco 4502	No		No	Disposition determination	2.200	
	Z-hydroxyisobutyric acid 90%	Unknown		No	Disposition determination	0.001	
					INEL Total	409.114	
K-25 Gaseous Diffusion Plant	Aluminum fluoride	No		No	Disposition determination	0.080	
	Amberlite resin 59	No		No	Disposition determination	12.300	
	Chlorine trifluoride	No		No	Future use	0.300	
	Chromium oxyfluoride	No		LL	Future use	0.100	
	Cobaltous fluoride	No		No	Disposition determination	1.000	
	Freon 114 (low-level)	No		LL	Disposition determination	0.900	
	Freon 114 (non-radioactive)	No		No	Disposition determination	0.600	
	Lithium hydroxide monohydrate FF	No		No	Disposition determination	2081.000	
	Lithium chloride	No		LL	Future use	Classified	
	Molybdenum hexafluoride	No		LL	Future use	0.020	

Table B-2. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
	Process coolants	No		LL	Future use, disposition determination	793.000	
	Rhenium/tungsten hexafluoride	No		No	Disposition determination	0.004	
	Rhenium hexafluoride	No		No	Disposition determination	0.006	
	Spray booth nitric acid	Yes	Heavy metals	LL	Other: uranium recovery	100.000	
	Sulfur hexafluoride	No		LL	Future use	1.400	
	Tungsten hexafluoride	No		No	Disposition determination	0.020	
					K-25 Total	**2,990.730**	
Oak Ridge National Laboratory	Acetic acid, glacial	Yes	Acetic acid	No	Future use	0.0005	
	Ammonium pentaborate	No		No	Future use	0.757	
	Strontium-90 fluoride	No		LL	Other: permanent storage	0.100	
	Zinc bromide	No		No	Future use	8.950	
	Zinc bromide	No		No	Future use	1.040	
	Zinc bromide	No		No	Disposition determination	1.700	
					ORNL Total	**12.548**	
Paducah Gaseous Diffusion Plant	Fluorine cell electrolyte (melt)	Yes	HF and KHF	LL	Future use	2900.000	
					Paducah Total	**2,900.000**	
Portsmouth Gaseous Diffusion Plant	Lithium hydroxide	Yes	Mercury	No	Future use	Classified	
					Portsmouth Total	Classified	
Rocky Flats Plant	3A Alcohol (ethyl alcohol)	Yes		LL	Disposition determination	0.0010	
	Acetic acid	Yes	Acetic acid	LL	Disposition determination	0.0059	
	Acetone	Yes	Acetone	LL	Disposition determination	0.0040	
	Alumina and chromic acid	Yes	U032 chromic acid	LL	Disposition determination	0.0003	
	Alumina	No		LL	Disposition determination		0.2950
	Aluminum nitride	Yes	D001	LL	Disposition determination	0.0001	0.4540
	Aluminum oxide	No		LL	Disposition determination		1.020
	Ammonium persulfate	Yes	D001	LL	Disposition determination	0.0002	0.3630
	Barium zirconate	No		LL	Disposition determination		0.3630
	Boron carbide	No		LL	Disposition determination		0.3400
	Boron nitride	No		LL	Disposition determination		0.8510
	Calcium sulfate	No		LL	Disposition determination		0.2270

Table B-2. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
	Calcium chloride	No		LL	Disposition determination		0.2270
	Cerium zirconate	No		LL	Disposition determination		0.4090
	Cerium sulfide	No		LL	Disposition determination		0.1200
	Chromic acid	Yes	Chromium	LL	Disposition determination	0.0002	
	Chromium trioxide	Yes	Chromium	LL	Disposition determination		0.2270
	Chromium carbide	Yes	Chromium	LL	Disposition determination		0.0910
	Chromium silicide	Yes	Chromium	LL	Disposition determination		0.2270
	Cupric sulfate	No		LL	Disposition determination		0.4652
	Cupric nitrate	No		LL	Disposition determination		0.4090
	Ethyl alcohol	Yes	D001	LL	Disposition determination	0.0023	
	Ferric chloride (ferrous chloride)	No		LL	Disposition determination		0.4100
	Fluoroboric acid	Yes	D002	LL	Disposition determination		0.3000
	Glycerol	No		LL	Disposition determination	0.0044	
	Hafnium carbide	No		LL	Disposition determination	0.1140	
	Hydrochloric acid	Yes		LL	Disposition determination	0.0029	
	Hydrogen peroxide	Yes	Oxidizer	LL	Disposition determination	0.0003	
	Isopropanol	Yes		LL	Disposition determination	0.0029	
	Isopropyl alcohol	Yes		LL	Disposition determination	0.027	
	Lanthanum boride	No		LL	Disposition determination		0.0681
	Lithium chloride	No		LL	Disposition determination		0.9100
	Magnesium chloride/magnesium fluoride	No		LL	Disposition determination	0.0005	
	Methanol	Yes	U154	LL	Disposition determination	0.0010	
	Molybdenum silicide	No		LL	Disposition determination		0.1360
	Molybdenum sulfite	No		LL	Disposition determination		0.5000
	Molybdenum carbide	No		LL	Disposition determination		0.0680
	Molybdenum boride	No		LL	Disposition determination		0.1600
	Nitric acid	Yes	D002	LL	Disposition determination		0.4630
	Potassium dichromate	Yes	D003, D007	LL	Disposition determination		0.0091
	Potassium fluoride	No		LL	Disposition determination		0.4100
	Potassium chloride	No		LL	Disposition determination		0.0500
	Silicon nitride powder	No		LL	Disposition determination		0.2270
	Silicon nitride	No		LL	Disposition determination		0.6700

Table B-2. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
	Silicon carbide powder	No		LL	Disposition determination		0.3180
	Sodium sulfite	No		LL	Disposition determination		0.0227
	Sodium sulfate	No		LL	Disposition determination		0.2720
	Sodium thiosulfate	No		LL	Disposition determination		0.3630
	Sodium hydroxide	Yes	D002	LL	Disposition determination	0.022	45.8000
	Sodium stearate	No		LL	Disposition determination		0.3180
	Sodium bicarbonate	No		LL	Disposition determination	0.0006	0.5350
	Strontium sulfide	Yes	P107, D001, D003	LL	Disposition determination	0.0005	1.8160
	Tantalum silicide	No		LL	Disposition determination		0.3770
	Tantalum nitride	No		LL	Disposition determination		0.9100
	Tantalum carbide 99%	No		LL	Disposition determination		0.1140
	Tantalum carbide	No		LL	Disposition determination		0.1065
	Titanium dioxide	No		LL	Disposition determination		0.3630
	Toluene	Yes	U220	LL	Disposition determination	0.0004	
	Tungsten silicide	Yes	D001	LL	Disposition determination	0.0001	0.9100
	Tungsten boride	No		LL	Disposition determination		0.0136
	Tungsten carbide	No		LL	Disposition determination		1.8160
	Vanadium carbide	No		LL	Disposition determination		0.8600
	Vinegar	No		LL	Disposition determination	0.0004	
	Xylenes	Yes	U239, D001	LL	Disposition determination	0.0019	
	Yttrium oxide	No		LL	Disposition determination	0.0005	
	Zinc chloride	No		LL	Disposition determination		0.1000
	Zinc sulfide	No		LL	Disposition determination		0.0300
	Zirconium oxide	No		LL	Disposition determination		0.0750
	Zirconium silicide	No		LL	Disposition determination		0.0910
	Zirconium nitride	No		LL	Disposition determination		4.2680
	Zirconium carbide	Yes	D001	LL	Disposition determination		0.5680
					Rocky Flats Total	**0.1934**	**70.5162**
Savannah River Site	Acids	Yes		LL	Future use	1.000	
	Chemicals	Yes	Picric acid possible	LL	Other	Unknown	
	Excess chemicals	Yes	Lead, solvents, sodium hydroxide	No	Disposition determination	Unknown	
	Excess chemicals	No		No	Future use	0.100	
	Excess chemicals	Yes		No	Disposition determination	20.000	

Table B-2. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
	Excess chemicals	Yes		No	Disposition determination	0.500	
	Excess chemicals	Yes		No	Disposition determination		7.240
	Isopropyl alcohol	Yes		No	Future use	1.000	
	Miscellaneous chemicals	No		No	Disposition determination	4.000	
	Miscellaneous chemicals 2	Yes	Methyl ethyl ketone, toluene, toluol	No	Disposition determination	4.000	
	Miscellaneous chemicals 3	Unknown		LL	Disposition determination	5.000	
	MP-7 Manganese phospholene	Yes		No	Disposition determination	2.000	
	Oxalic acid	No		No	Disposition determination	2.000	
	Potassium permanganate	No		No	Disposition determination	1.000	
	Sodium hydroxide	Yes	NaOH	LL	Future use	1.000	
	Sodium sulfite	No		LL	Disposition determination	1.000	
					SRS Total	**42.600**	**7.240**
Y-12 Plant (Oak Ridge)	Lithium carbonate/lithium hydroxide	No		LL	Future use	56.000	
	Lithium chloride	No		LL	Future use	116.000	
	LiCl/KCl electrolyte	No		LL	Future use	43.000	
	Lithium hydroxide monohydrate	No		LL	Future use	30.000	
	Miscellaneous lithium compounds	No		LL	Future use	1.000	
	Lithium-7 compounds mixed with resin	No		LL	Future use	65.000	
	Tin 2-ethylhexanoate	Unknown	High health hazard: 4	No	Future use	0.0300	
	Unused silica gel (SiO_2)	No		No	Future use	2.000	
	Unused acetonitrile	Yes	Acetonitrile	No	Future use	2.000	
	Miscellaneous chemicals (non-RCRA, non-radioactive)	No		No	Future use	9.180	
	Unused butane gas	Yes	Butane	No	Future use	1.000	
	Unused chromium oxide powder	Yes	Chromium	No	Future use	0.010	
	Unused ethyl alcohol	Yes	Ethanol	No	Future use	2.000	
	Unused hydrofluoric acid	Yes	HF	No	Future use	0.050	

Table B-2. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
	Unused isopropanol	Yes	Isopropanol	No	Future use	2.040	
	Unused methanol	Yes	Methanol	No	Future use	0.005	
	Unused methylene chloride	Yes	Methylene chloride	No	Future use	1.000	
	Unused nitrogen tetroxide	Yes	Nitrogen tetroxide	No	Future use	1.000	
	Unused medical oxygen	No		No	Future use	4.000	
	Unused petroleum ether	Yes	Petroleum ether	No	Future use	0.005	
	Unused sodium tetrafluoborate powder	No		No	Future use	0.300	
	Unused sulfur hexafluoride gas	No		No	Future use	3.000	
	Unused methyl chloroform	Yes	Methyl chloroform	No	Future use	4.250	
	Unused trichloroethylene	Yes	Trichloroethylene	No	Future use	0.350	
					Y-12 Total	**343.220**	
					TOTAL	**7,561.505**	**77.756**

Table B-3. Elements and Metals.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
Ames Lab	Yttrium	No		No	Future use	0.044	
					Ames Total	**0.044**	
Brookhaven National Lab	Steel shielding	No		LL	Future use	2500.00	
					BNL Total	**2,500.00**	
Fermilab	Beryllium	No		LL	Future use	1.000	
					Fermilab Total	**1.000**	
Hanford Site	Mercury in AMU basement	Yes	Mercury	No	Future use	0.001	
	Zircaloy-2 alloy	No		No	Future use	219.000	
					Hanford Total	**219.001**	
K-25 Gaseous Diffusion Plant	Nickel powder	No		No	Future use Other: classified	8.000	
	Scrap metal (contaminated)	Yes	Characteristic metals	LL	Disposition determination	5000	40,000,000
	Scrap metal (nonradioactive)	Yes	Characteristic metals	No	Disposition determination	181	1450000.000
	Vanadium	No		No	Disposition determination	0.200	
	Tungsten	No		No	Future use	0.900	
					K-25 Total	**5,190.100**	
Lawrence Berkeley Lab	Mercury	Yes	Mercury	No	Disposition determination	0.067	
					LBL Total	**0.067**	
Mound Plant	Tritium components	Classified	Classified	LL	Other	90.000	
	Contaminated Ir, Pt, Pt/Rh	No		TRU	Other	1.000	
					Mound Total	**91.000**	
Oak Ridge National Lab	Beryllium	No		No	Future use	13.808	
	Beryllium reflector	No		LL	Disposition determination	2.000	
	Boron shielding	No		No	Future use	2.0	
	Cadmium shielding	Yes	Cadmium	No	Future use	0.03	
	Cadmium sleeves	Yes	Cadmium	LL	Disposition determination	0.130	
	Graphite shielding	No		No	Disposition determination	14.9	
	Scrap metal	No		No	Disposition determination	2.300	
	Scrap metal	No		No	Disposition determination	2049.000	
	Scrap metal	Yes	Lead, cadmium	LL	Disposition determination	10.500	
	Scrap metal	Yes	Lead, cadmium	LL	Disposition determination	94.400	
	Stainless steel plates	No		No	Future use	0.100	
	Tin bricks	No		No	Future use	0.300	

Table B-3. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
					ORNL Total	**2,189.468**	
Paducah Gaseous Diffusion Plant	Scrap metal	Unknown		LL	Future use	72000.000	
					Paducah Total	**72,000.000**	
Rocky Flats Plant	1100 Aluminum	No		LL	Disposition determination	0.0003	
	21-6-9 Stainless steel	No		LL	Disposition determination	0.0018	
	250 Stainless steel	No		LL	Disposition determination	0.0004	
	300 Stainless steel	No		LL	Disposition determination	0.0008	
	304 Stainless steel	No		LL	Disposition determination	0.0250	
	304L Stainless steel	No		LL	Disposition determination	0.0166	
	308L Stainless steel	No		LL	Disposition determination	0.0409	
	316 Stainless steel	No		LL	Disposition determination	0.0005	
	316L Stainless steel	No		LL	Disposition determination	0.0010	
	6061 Aluminum	No		LL	Disposition determination	0.0148	
	903 Stainless steel	No		LL	Disposition determination	0.0038	
	Aluminum	No		LL	Disposition determination	0.2050	
	Aluminum metal	No		LL	Disposition determination	0.0002	0.454
	Aluminum powder	Yes	D001	LL	Disposition determination	0.0100	
	Aluminum scrap metal	No		LL	Disposition determination	0.8900	
	Aluminum manganese	No		LL	Disposition determination	0.0003	
	Antimony metal	No		LL	Disposition determination		0.114
	Beryllium (classified) scrap metal	No		No	Other: no disposal method	25	45400.000
	Beta titanium	No		LL	Disposition determination	0.0015	
	Black iron	No		LL	Disposition determination	1.5900	
	Boron	Yes	D001 in dust form	LL	Disposition determination		0.057
	Brass	No		LL	Disposition determination	0.0008	
	Calcium powder	Unknown	D001	LL	Disposition determination	0.00008	
	Calcium metal	No		LL	Disposition determination	0.0015	
	Carbon steel scrap	No		LL	Disposition determination	345.2700	
	Chromium powder	Yes	Chromium	LL	Disposition determination		0.454
	Chromium	Yes	Chromium	LL	Disposition determination	0.0001	
	Chromium pellets	Yes	Chromium	LL	Disposition determination		0.080
	Cobalt powder	Unknown	D001	LL	Disposition determination		0.114

Table B-3. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
	Columbium powder (niobium)	Unknown		LL	Disposition determination	0.0006	5.000
	Copper (classified) scrap metal	No		LL	Other: no disposal method	0.1900	
	Copper	Unknown	D001 in dust form	LL	Disposition determination	0.0310	
	Copper	Unknown	D001	LL	Disposition determination	0.0007	5.900
	Copper metal with zirconium	Unknown	D001	LL	Disposition determination		0.227
	Galvanized steel scrap	No		LL	Disposition determination	9.400	
	Germanium powder	No		LL	Disposition determination		0.02
	Graphite	No		LL	Disposition determination	0.002	3.900
	H-13 Tool steel	No		LL	Disposition determination	0.0031	
	Iron fillings	No		LL	Disposition determination		0.114
	M-2 Tool steel	No		LL	Disposition determination	0.0014	
	M-32 Tool steel	No		LL	Disposition determination	0.0001	
	M-33 Tool steel	No		LL	Disposition determination	0.0006	
	M-34 Tool steel	No		LL	Disposition determination	0.0001	
	Manganese chips	Yes		LL	Disposition determination		0.030
	Molybdenum	No		LL	Disposition determination	0.0109	
	Nickel	Unknown	D001	LL	Disposition determination	0.0273	
	Nickel	No		LL	Disposition determination		0.114
	Nickel chromium alloy	Unknown	D007- chromium	LL	Disposition determination	0.0006	
	Nickel	Unknown	D001	LL	Disposition determination		0.463
	Niobium	No		LL	Disposition determination	0.0022	
	Scrap metal (classified)	No		No	Other: classified	0.690	
	Scrap metal (PU&D yard)	Unknown		LL		1600.000	
	Scrap metal (mixed)	No		LL	Disposition determination	310.360	
	Silicon	Unknown	D001	LL	Disposition determination	0.0004	0.910
	Silver	Yes	D011 - silver	LL	Disposition determination	0.06	629.817
	Stainless steel classified scrap	No		LL	Other: classified	24.500	
	Stainless steel	No		LL	Disposition determination	0.1199	
	Stainless steel scrap	No		LL	Disposition determination	4.320	
	Steel	No		LL	Disposition determination	0.7264	
	Tantalum	Yes	D001	LL	Disposition determination	0.0001	

Table B-3. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
	Tantalum	Yes	D001	LL	Disposition determination	0.0162	
	Tin	No		LL	Disposition determination		0.045
	Titanium	No		LL	Disposition determination	0.0007	2.971
	Titanium - 15V - 3AL	No		LL	Disposition determination	0.0001	
	Titanium	No		LL	Disposition determination	0.0970	
	Titanium - 6AL - 4V	No		LL	Disposition determination	0.0232	
	Tungsten metal	No		LL	Disposition determination	0.0008	
	Tungsten powder	Yes	D001	LL	Disposition determination	0.0001	2.270
	Tungsten	Unknown	D001	LL	Disposition determination	0.0001	
	Unidentified metal scrap	No		LL	Disposition determination	0.0500	
	Vanadium	Unknown		LL	Disposition determination	0.0046	
	Vanadium	No		LL	Disposition determination		0.227
	Yttrium metal	No		LL	Disposition determination		0.182
	Yttrium copper 20.5	No		LL	Disposition determination		0.0005
	Yttrium	Yes	D001	LL	Disposition determination	0.0002	0.700
	Zinc	Yes	D001	LL	Disposition determination		0.4015
	Zirconium/titanium	No		LL	Disposition determination	0.0028	
	Zirconium	Yes	D001, D003	LL	Disposition determination	0.0003	
	Zirconium	Yes	D001, D003	LL	Disposition determination	0.0009	
					Rocky Flats Total	**2,323.720**	**46,054.565**
Stanford Linear Accelerator Center	Copper	No		LL	Disposition determination	100.000	
					SLAC Total	**100.000**	
Savannah River Site	Cadmium in safety and control rods	Yes	Cadmium and lead	LL	Future use	2.880	
	Granular beryllium metal	Yes	Beryllium	No	Disposition determination	0.010	
	Graphite blocks	No		No	Future use	1.000	
	Indium sheets	No		No	Disposition determination	0.001	
	Metal foils, sheets, copper bead chain	Yes	Lead	No	Future use	0.010	
	Scrap metal/jumpers - jets	Unknown		LL	Future use	11	89211.00
	Scrap metal from power houses	Unknown		No	Disposition determination	Unknown	
	Scrap cadmium	Yes	Cadmium	No	Disposition determination	0.100	
	Stainless steel	No		LL	Disposition determination	537.300	

Table B-3. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
	Zirconium rods	No		No	Future use	0.100	
					SRS Total	552.401	
Y-12 Plant (Oak Ridge)	Beryllium and Beryllium compounds	No		No	Future use, disposition determination	53.000	
	Brass, unused	No		LL	Future use	0.200	
	Copper, unused oxygen free, hi-conductivity	No		No	Future use	2.000	
	Mercury, used	Yes	Mercury	No	Disposition determination	691.000	
	Mercury, used	Yes	Mercury	No	Disposition determination	35.400	
	Nickel-200 alloy	No		No	Future use	0.730	
	Unused activated carbon	Unknown		No	Future use	1.400	
	Used scrap metal	Unknown	TCLP analyses needed	No	Future use	100.000	
					Y-12 Total	883.730	
					TOTAL	86,050.531	41,585,333.065

Table B-4. Explosives.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
Mound Plant	Explosives	Yes	Explosives, lead	No	Future use	50.000	
					Mound Total	**50.000**	
Pantex Plant	High explosive powder	Yes	Explosives	No	Future use	578.900	
					Pantex Total	**578.900**	
Sandia National Lab - Alb.	Explosive components	Yes	D003, Possible TC	No	Disposition determination	250.000	
	Rockets, rocket motors, explosive components	Yes	Reactive, possible TC	No	Future use	1000.000	
	Explosive assemblies, explosives, detonators	Yes	Reactive, possible TC	No	Future use	70.000	
	Rocket motors, explosive components	Yes	Reactive, TC	No	Future use	300.000	
	Explosive pads, lenses, detonators	Yes	Reactive, possible TC	No	Future use	9.000	
	Explosive cutters and parachute assemblies	Yes	Reactive, possible TC	No	Future use	3.000	
	Explosive primers, heat powder and heat paper	Yes	Reactive and metals, possible TC	No	Future use	6.000	
	Miscellaneous explosive components	Yes	Reactive, heavy metals	No	Future use	6.000	
	Miscellaneous explosive assemblies, explosives	Yes	Reactive, possible TC	No	Future use	6.000	
	Firesets, neutron generators	Yes	Lead, explosives	LL	Disposition determination	1.000	
	Firesets	Yes	Lead, explosives	LL	Disposition determination	3.000	
					SNL-Alb. Total	**1,654.000**	
Sandia National Lab - Livermore	Explosives	Yes	Explosives, lead	No	Other	0.6000	
	Small arms ammunition	Yes	Lead, explosives	No	Future use	1.5	
					SNL-Livermore Total	**2.100**	
Y-12 Plant (Oak Ridge)	Unused explosives	Yes	Explosives	No	Future use	1.000	
					Y-12 Total	**1.000**	
					TOTAL	**2,286.000**	

Table B-5. Lead.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
Argonne National Lab - East	Lead	Yes	Lead	No	Future use	0.472	
					ANL-East Total	**0.472**	
Argonne National Lab - West	Scrap lead, clean	Yes	Lead	No	Future use	1.200	
	Scrap lead, radioactive	Yes	Lead	LL	Future use	0.940	
					ANL-West Total	**2.140**	
Brookhaven National Lab	Lead	Yes	Lead	LL	Future use	50.000	
	Contaminated lead	Yes	Lead	LL	Future use	0.480	
					BNL Total	**50.480**	
Fermilab	Lead, slightly radioactive	Yes	Lead	LL	Future use	1.000	
	Nevis shielding blocks	Yes	Lead	LL	Future use	511.000	
	Lead	Yes	Lead	No	Future use	0.006	
	Lead tubing	Yes	Lead	No	Future use	0.01	
					Fermilab Total	**512.016**	
Hanford Site	Lead bricks	Yes	Lead	No	Future use	0.033	
	Tank farm lead shielding	Yes	Lead	LL	Future use	2.00	
	Lead	Yes	Lead	No	Future use	5.43	
					Hanford Total	**7.463**	
Idaho National Engineering Lab	Clean lead	Yes	Lead	No	Future use	8.50	
	Clean lead	Yes	Lead	No	Future use	0.72	
	Contaminated lead	Yes	Lead	LL	Future use	0.30	
	Lead	Yes	Lead	LL	Future use	1.161	
	Lead weights	Yes	Lead	No	Future use	3.10	
					INEL Total	**13.781**	
Inhalation Toxicology Research Institute	Nonradioactive lead	Yes	Lead	No	Future use	2.0	22,700.000
	Contaminated Lead	Yes	Lead	LL	Future use	1.2	13,620.000
					ITRI Total	**3.200**	**36,320.000**
K-25 Gaseous Diffusion Plant	Lead tubing	Yes	Lead	No	Future use	2.000	
	Lead weights	Yes	Lead	LL	Disposition determination	0.040	
					K-25 Total	**2.040**	
Lawrence Berkeley Lab	Lead	Yes	Lead	LL	Future use	40.000	
	Unused lead	Yes	Lead	No	Future use	43.320	
					LBL Total	**83.320**	

Table B-5. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
ORISE	Lead pellets	Yes	Lead	No	Disposition determination	1.000	
	Lead pipes	Yes	Lead	LL	Disposition determination	1.000	
					ORISE Total	**2.000**	
Oak Ridge National Lab	Lead	Yes	Lead	LL	Future use	0.7	
	Lead	Yes	Lead	LL	Future use	0.200	
	Lead	Yes	Lead	LL	Disposition determination	1.000	
	Lead shielding (used)	Yes	Lead	LL	Future use	8.0	
	Lead	Yes	Lead	LL	Future use	25.27	
	Lead	Yes	Lead	No	Future use	35.70	
	Lead shielding (unused)	Yes	Lead	No	Future use	0.97	
					ORNL Total	**71.84**	
Rocky Flats Plant	Lead	Yes	Lead	LL	Disposition determination	1.000	
	Lead	Yes	Lead	LL	Disposition determination	0.0009	
	Lead bricks	Yes	Lead	LL	Disposition determination	1.000	
					Rocky Flats Total	**2.001**	
Sandia National Lab - Alb.	Lead	Yes	Lead	LL	Future use	12.080	
					SNL-Alb. Total	**12.080**	
Sandia National Lab - Livermore	Lead	Yes	Lead	No	Future use	2.000	
					SNL-Livermore Total	**2.000**	
Savannah River Site	Leaded shielding windows	Yes	Lead	No	Future use	1.000	
	Lead	Yes	Lead	No	Future use	0.250	
	Lead	Yes	Lead	No	Disposition determination	0.6009	
	Lead	Yes	Lead	No	Disposition determination	0.0195	
	Scrap lead for recycling	Yes	Lead	No	Future use	0.210	
	Roser plugs (lead filled)	Yes	Lead	LL	Future use	4.0	45400.000
	Clean lead	Yes	Lead	No	Future use	0.3	3564.000
	Lead shock absorber for control rod	Yes	Lead	LL	Disposition determination	0.0002	2.000
	Lead	Yes	Lead	No	Future use	65.000	
	Lead	Yes	Lead	LL	Future use	1.16	13620.000
					SRS Total	**72.541**	**62,586.000**
West Valley Demonstration Project	Lead	Yes	Lead	No	Future use	0.610	

Table B-5. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
					WVDP Total	**0.610**	
Y-12 Plant (Oak Ridge)	Lead	Yes	Lead	No	Future use	1.550	
					Y-12 Plant Total	**1.550**	
					TOTAL	**839.532**	**98,906.000**

Table B-6. Other Materials.

DOE Sites	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
Argonne National Lab - West	Scrap materials at RSWF, TRU	Yes	Reactive metals	TRU	Future use	8.800	
	Scrap materials at RSWF, non-TRU	No		LL	Future use	0.400	
					ANL-West Total	**9.200**	
Brookhaven National Lab	Concrete shielding	No		LL	Future use	3000.000	
					BNL Total	**3,000.000**	
Hanford Site	Borated carbon balls	No		LL	Disposition determination	17.000	
	Encapsulated cesium chloride	Unknown		LL	Disposition determination	0.025	
	Irradiated non-fuel components	No		LL	Future use	4.400	
	Miscellaneous structural scrap	No		TRU	Disposition determination	20.000	
	Purex U or Pu process solution	Yes	Cr, nitric acid	TRU	Future use	24.050	
	Purex deactivated building components	Yes	Oil, grease, cadmium, lead, mercury, etc.	LL	Disposition determination	Unknown	
	Purex deactivated equipment	Yes	Oil, grease, cadmium, lead, mercury, etc.	LL	Disposition determination	Unknown	
	WESF CsCl program material	No		LL	Disposition determination	1.000	
					Hanford Total	**66.475**	
Idaho National Engineering Lab	Simulated ZrF solution	Yes	Acid, Pb, Cd, Cr	No	Future use	4.160	
	Simulated sodium bearing solution	Yes	Acid, Lead, Ni, Cr	No	Future use	0.293	
					INEL Total	**4.453**	
K-25 Gaseous Diffusion Plant	Alumina	No		No	Future use	3.300	
	Bakelite epoxy resin	No		No	Disposition determination	3024.000	
	Capacitors	No		LL	Future use	0.200	
	Classified surplus material	No		No	Disposition determination	Classified	
	Classified surplus material	No		No	Future use, other: classified	5.400	
	Electrical equipment	No		LL	Disposition determination	740.000	

Table B-6. (continued).

DOE Sites	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
	Electrical fuses	Unknown	Lead solder	No	Other	3	16000 fuses
	Epoxy	Unknown		No	Disposition determination	0.300	
	Fomblin and krytox oils	No		No	Disposition determination	0.090	
	Gas trapping media (high-level)	Unknown		LL	Other: D&D	1.000	
	Gas trapping media (low-level)	Unknown		LL	Future use	36.000	
	Hydraulic pumps	Unknown		No	Future use	1.000	
	Light ballasts	No		LL	Disposition determination	25.000	
	Lubricating oil	Yes	Arsenic, chromium	No	Future use	757.000	
	Lubricating fluid	No		No	Disposition determination	1.200	
	Mercury switches	Yes	Mercury	No	Disposition determination	0.0500	
	Metal working machines	Unknown		LL	Disposition determination	144.000	
	Pipe threader	Unknown		No	Disposition determination	2.000	
	UF_6 process equipment	No		LL	Future use	Unknown	
	Vacuum pump oil	No		No	Future use	0.020	
					K-25 Total	**4,743.560**	
Kansas City Plant	Electronic assemblies	Yes	Lead, silver	No	Future use	Unknown	
	Electronic piece parts and assemblies	Yes	Lead, silver	LL	Future use	Unknown	
	Metal fluoride	Yes	Hexafluoride	No	Future use/ disposition determination	Unknown	
					KCP Total	**Unknown**	
Lawrence Berkeley Lab	Electromagnets	No		LL	Future use	327.000	
	Contaminated tank - radium 226	Unknown		LL	Disposition determination	15.000	
	Oil	Unknown		No	Disposition determination	7.600	
	Concrete and steel blocks	No		LL	Future use, disposition determination	14444.000	
					LBL Total	**14,793.600**	
Oak Ridge National Lab	Boron carbonate shielding	No		No	Future use		5000.000
	Concrete shielding	No		LL	Future use	287.000	
	Control plates	No		LL	Disposition determination	1.000	
	Core support components	No		LL	Disposition determination	2.000	

Table B-6. (continued).

DOE Sites	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
	Dummy CRBR fuel assemblies	No		No	Future use	10.000	
	Equipment (used, machine shop)	Unknown	Heavy metals, benzene	LL	Disposition determination	43.000	
	Fuel shipping casks	Unknown		LL	Future use	3.000	
	Ion exchange resins	Unknown		No	Future use	2.380	
	Radioluminescent (RL) lights	No		LL	Disposition determination	8.000	
	Reactor fuel racks	Unknown		LL	Future use	1.700	
	Remote shear system	No		LL	Future use	70.000	
					ORNL Total	**428.080**	**5,000.000**
Rocky Flats Plant	AB Miromet	Unknown		LL	Disposition determination	0.0002	
	Fansteel 85	No		LL	Disposition determination	0.0003	
	Aluminum putty	No		LL	Disposition determination		0.4540
	Anti-seez	Unknown		LL	Disposition determination		0.6944
	Anti-seize lube C5-A	Unknown		LL	Disposition determination		7.2600
	Aquasol	Unknown		LL	Disposition determination	0.0006	
	Bowl cleaner	No		LL	Disposition determination	0.0005	
	Carbolene neoprene adhesive	No		LL	Disposition determination	0.0034	
	Celvacene HI vacuum grease	Unknown		LL	Disposition determination		0.3630
	Chrome crystallate	Unknown	Chromium	LL	Disposition determination		0.2270
	Chromium mesh	Unknown	Chromium	LL	Disposition determination	0.0019	
	CIBA hardener	Unknown		LL	Disposition determination	0.0003	
	Colonel Clear	Unknown		LL	Disposition determination	0.0010	
	Convoil-20	Unknown		LL	Disposition determination	0.007	
	De-Solv-It	Unknown		LL	Disposition determination	0.0160	
	Die lube	Unknown		LL	Disposition determination	0.0095	
	Disinfecting solution	Unknown		LL	Disposition determination	0.0004	
	Dow Corning diffusion pump fluid	Unknown		LL	Disposition determination	0.0002	
	Dow Corning silicone compound	No		LL	Disposition determination		0.2100
	Dykem blue	Unknown		LL	Disposition determination	0.0004	
	Eutectic salt	Unknown		LL	Disposition determination		11.3500

Table B-6. (continued).

DOE Sites	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
	Ferrous final polishing solution	Unknown		LL	Disposition determination	0.0002	
	Finish polish	Unknown		LL	Disposition determination		0.1360
	Fiske BMI hot die lube	Unknown		LL	Disposition determination	0.0019	
	Glass ceramic precoat	Unknown		LL	Disposition determination	0.0152	
	HE-200 diffusion pump fluid	Unknown		LL	Disposition determination	0.0019	
	Hardener	Unknown		LL	Disposition determination	0.0019	
	HI-vacuum grease	Unknown		LL	Disposition determination		0.0710
	604 Hot die grease	Unknown		LL	Disposition determination	0.2100	
	Hydraulic oil	Unknown		LL	Disposition determination	0.0012	
	Inconel	No		LL	Disposition determination	0.0033	
	Inconel 718	No		LL	Disposition determination	0.00003	
	Inconel 903	No		LL	Disposition determination	0.0026	
	JBK-75	No		LL	Disposition determination	0.0004	
	Kerosene	Yes		LL	Disposition determination	0.0001	
	Liquid heat 810	Unknown		LL	Disposition determination		59.0000
	Low temp drawing salt	Unknown		LL	Disposition determination		34.0000
	MAR temp-salt B	Unknown		LL	Disposition determination		70.4000
	Mariko	Unknown		LL	Disposition determination	0.0185	
	Metal marker	Unknown		LL	Disposition determination		0.2130
	Moly 99	No		LL	Disposition determination		0.1100
	Moly-Dee	Unknown		LL	Disposition determination	0.0012	.0027
	Molycoat G paste	Unknown		LL	Disposition determination	0.0004	
	732 Multi-purpose sealant	Unknown		LL	Disposition determination	0.0001	0.014
	IDC 998-NMC	No		LL	Other: awaiting disposal		74.0000
	Neutral salt K-17	Unknown		LL	Disposition determination		32.0000
	Oakite NST	Unknown		LL	Disposition determination	0.0006	
	OX-OUT 536	Unknown		LL	Disposition determination	0.3390	
	Parquench	Unknown		LL	Disposition determination	0.0076	
	Paso liquid sander	Unknown		LL	Disposition determination	0.0013	
	Plastimet powder	Unknown		LL	Disposition determination		1.3600
	Primer	Unknown		LL	Disposition determination	0.0009	
	Rustoleum	Unknown	Potentially TC	LL	Disposition determination	0.0004	
	SS 304L	No		LL	Disposition determination		4.7400

Table B-6. (continued).

DOE Sites	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
	SS powder	No		LL	Disposition determination	0.0005	
	Silicon rubber	No		LL	Disposition determination		0.0600
	Soluble oil	Unknown		LL	Disposition determination	0.0022	
	Tantalum hafnium	No		LL	Disposition determination		0.1820
	Tin tech	No		LL	Disposition determination		0.0790
	Titanium sponge	No		LL	Disposition determination		0.2300
	Trim tap	Unknown		LL	Disposition determination	0.0001	
					Rocky Flats Total	**0.6532**	**297.1561**
Sandia National Laboratory - Alb.	Graphite with tritium contamination	No		LL	Disposition determination	1.000	
	Miscellaneous electronic assemblies	Unknown		No	Future use	250.000	
	Military liaison and training materials	Unknown		No	Future use	300.000	
	System design and development materials	Unknown		No	Future use	100.000	
	Weapon component hardware and fixtures	Unknown		No	Future use	250.000	
	Rocket motor hardware and equipment	Unknown		No	Future use	300.000	
	Neutron generators and subassemblies	Yes	Lead, cadmium	No	Future use	0.500	
	MC ferroelectric neutron generators	No		LL	Future use	0.500	
	Experiment cassettes	No		LL	Future use	0.0102	
					SNL-Alb. Total	**1,202.0102**	
Savannah River Site	Antifoam	Unknown		LL	Future use	1.000	
	Bird cages	No		LL	Future use	2.000	
	Electronic equipment	Unknown		LL	Future use	0.3	1362.000
	Internally contaminated valve	No		LL	Disposition determination	0.500	
	Machined cylinders for safety/control rods	Yes	Cadmium, lithium	No	Future use	1.000	
	Machined parts: paraffin filled	No		No	Future use	0.500	
	M Area basin equipment	Unknown		LL	Future use	1051.000	
	Magnetite blocks	No		No	Future use	10.000	

Table B-6. (continued).

DOE Sites	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
	Shield casks	Yes	Lead	No	Future use	2.880	
	Shields, lead-filled and paraffin-filled	Yes	Lead	No	Future use	2.000	
	Simulated sludge	Yes	Mercury	No	Disposition determination	0.250	
	Tank farm spares	Unknown		LL	Future use	Unknown	
					SRS Total	**1,071.430**	**1,362.000**
Y-12 Plant (Oak Ridge)	Magnaflux SKC-S spotcheck cleaner	Yes	Naphtha	No	Future use	0.340	
	Miscellaneous proprietary products (Non-RCRA)	No		No	Future use	0.130	
	Miscellaneous proprietary products (Unknown RCRA)	Unknown		No	Future use	14.520	
	Miscellaneous proprietary products (Unknown RCRA)	Unknown		No	Future use	1.400	
	Miscellaneous unused proprietary greases	Unknown	May contain listed substances	No	Future use	1.500	
	Miscellaneous unused proprietary oils	Unknown	May contain listed substances	No	Future use	0.600	
	Miscellaneous unused proprietary oils	Unknown		No	Future use	43.060	
	Miscellaneous unused silicone-free oils	Unknown		No	Future use	1.200	
	Sherwin RC-77 fluorescent penetrant	Unknown	Contains refined aliphatic oils, esters, and dyes	No	Future use	4.000	
	Unused 3M Super 77-N spray adhesive	Yes	Methylene chloride, 1,1,1 trichloroethaneignitable carriers	No	Future use	1.000	
	Unused Ameron Nu-klad adhesive	Yes	Ignitable carriers, may contain listed carriers	No	Future use	0.050	
	Unused Belguard Inhibitor no. 550 and 575	Unknown		No	Future use	4.300	
	Unused brazing flux	No		No	Future use	0.010	
	Unused clear coating varnish	Unknown	May have ignitable or listed carriers	No	Future use	0.020	

Table B-6. (continued).

DOE Sites	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (kg)
	Unused Durabond D500 clear tile adhesive	Yes	Methanol, xylene, petroleum distillates, mineral spirits	No	Future use	0.500	
	Unused Dykem remover and thinner 138	Yes	Denatured alcohol	No	Future use	0.020	
	Unused inks	Unknown	May have ignitable or listed carriers	No	Future use	0.1600	
	Unused Magnaflux SKL-HF/S penetrant	Unknown		No	Future use	0.030	
	Unused molecular sieve, type 13X	No		No	Future use	0.300	
	Unused Oatey 8700 primer	Unknown	May have ignitable or listed carriers	No	Future use	0.020	
	Unused parts for 7500-ton press	No		No	Future use	180.000	
	Unused radio cement	Yes	Ignitable carriers, may contain listed carriers	No	Future use	0.100	
	Unused rubber-gel mix	Yes	Lead	No	Future use	1.000	
	Unused Shell Epon resin 828	Yes	Ethers	No	Future use	0.010	
	Unused Troychem iron	Yes	Xylene, trimethyl benzenes	No	Future use	0.060	
	Unused Ucon lubricant LB-165	No		No	Future use	0.600	
	Unused yellow smoke candle	Unknown	May be ignitable	No	Future use	0.400	
	Used molecular sieve, type 5A	Yes	Oxides of silicon, sodium, calcium, aluminum	No	Future use	0.800	
	Used pipe containing ^{60}Co	No		LL	Future use	0.2500	
	Used surplus machine tools	Unknown	Possible lead in some bushings	LL	Disposition determination	741.000	
	Used Ucon-A quenchant fluid	Unknown		No	Future use	10.000	
					Y-12 Plant Total	1,007.380	
					TOTAL	26,326.8414	6,878.156

Table B-7. Nuclear Materials.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (mtu)
Brookhaven National Lab	Thorium metal	Yes	Thorium metal	LL	Disposition determiniation	0.002	
	Thorium nitrate	Yes	Thorium metal	LL	Disposition determination	0.007	
	Uranium 233	Yes	Uranyl nitrate	LL	Disposition determination	0.00002	
					BNL Total	**0.00092**	
Hanford Site	Depleted uranium alloy	Unknown		LL	Disposition determination	0.157	3.000
	Depleted uranium metal - CML	Unknown		LL	Disposition determination	4.160	
	Neptunium-237 nitrate solution	Yes	Nitric acid, maybe Cr	LL	Future use	Classified	
	Purex dissolver heels	Yes	Nitric acid	TRU	Future use	19.700	
	Purex E-cell floor debris	Yes	Chromium	LL	Disposition determination	0.960	
	Purex UNH solution	Yes	Nitric acid, maybe Cr	LL	Disposition determination	744.700	
	Residual/fuel basin sludge 2	Unknown		LL	Disposition determination	81.900	
	Residual and fuel basin sludge	Unknown		LL	Disposition determination	55.900	
	Unirradiated fuel materials	No		NF/S	Disposition determination	5.000	
	Uranium trioxide - depleted	No		LL	Future use	30.600	
	Uranium trioxide - LEU	No		LL	Disposition determination		456.04
					Hanford Total	**943.077**	**459.040**
Idaho National Engineering Lab	Rocky Flats material	No		LL	Disposition determination	0.070	
	Rover ash U & bed material (alumina)	No		LL	Disposition determination		0.150
	Uranium	Yes	Nitric acid	LL	Disposition determination	14.400	
					INEL Total	**14.470**	**0.150**
K-25 Gaseous Diffusion Plant	Converter material	Yes	TC	LL	Future use	2.530	
	K-1421 low-level waste incinerator ash	Unknown		LL	Future use	2.690	
	Uranium hexafluoride (depleted)			LL	Future use	17,000	36700.000
	Uranium hexafluoride laboratory standards			LL	Future use	2.300	
	Uranium oxides (low-level)	Unknown		LL	Future use	0.600	
	Uranium oxides (high-level)	Unknown		LL	Future use	0.060	
	Vacuum sweepings	Unknown		LL	Future use	0.600	
					K-25 Total	**17,008.780**	**36,700.000**

Table B-7. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (mtu)
Lawrence Berkeley Lab	Depleted uranium encased in steel	Yes		LL	Disposition Determination	0.600	
					LBL Total	**0.600**	
Lawrence Livermore Lab	Depleted uranium (D-38)	No		LL	Other	5.12	
					LLNL Total	**5.120**	
Los Alamos National Lab	Tritium	Unknown		LL	Future Use	Unknown	
	Deuterium	Unknown		No	Future Use	0.2	219.000
	Americium-243	Unknown		TRU	Disposition determination		0.044kg
	Enriched uranium	Unknown		LL		Unknown	
	Thorium	Unknown		LL	Disposition determination	0.1	1049.000kg
					LANL Total	**0.3**	**1049.044kg**
Mound Plant	^{238}Pu Iridium encapsulated heat sources	No		TRU	Other	1.000	
	^{238}Pu oxide	No		TRU	Other	1.000	
	^{239}Pu/beryllium neutron source	No		TRU	Other	1.000	
	Uranium-233 oxide	No		LL	Other	1.000	
					Mound Total	**4.000**	
Oak Ridge National Lab	Curium-244 oxide	No		TRU	Future use	0.01	100.000kg
	Depleted uranium	No		LL	Future use		5.440
	Thorium nitrate	No		LL	Future use	15.0	
					ORNL Total	**15.01**	**5.440** **100.000kg**
Paducah Gaseous Diffusion Plant	Uranium oxide feed, depleted	Unknown	Uranium	LL	Future use		0.675
	Uranium oxide feed, normal assay	Unknown	Uranium	LL	Future use		0.155
	Uranium oxide feed, enriched	Yes	Uranium	LL	Future use		0.021
	Depleted uranium hexafluoride			LL	Future use	30,000	68600.000
	Green salt (depleted)	Unknown	Fluoride and uranium	LL	Future use	600	3168.000
					Paducah Total	**30,600.000**	**71,768.851**
Portsmouth Gaseous Diffusion Plant	Depleted uranium hexafluoride			LL	Future use	33.200	
	Uranium oxide	No		LL	Future use	12.000	

Table B-7. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (mtu)
					Portsmouth Total	**45.200**	
Rocky Flats Plant	Plutonium oxide (IDC H61)	Unknown	May be other components in ductwork sludge	TRU	Other	0.004	40.9236 kg
	Thorium nitrate	No		LL	Other	0.630	
	Uranyl nitrate	Unknown		LL	Disposition determination	2.711	
					Rocky Flats Total	**3.345**	**40.9236 kg**
Sandia National Lab - Alb.	Americium	Unknown		LL	Disposition determination		0.006kg
	Californium	Unknown		LL	Disposition determination		0.0003 kg
	Deuterium	Unknown		No	Disposition determination	0.03	67.500kg
	Enriched uranium	Yes	Sodium	LL	Disposition determination	4.1000	
	Enriched uranium	Unknown		LL	Disposition determination	1.4199	
	Depleted uranium	Unknown		LL	Disposition determination		44920.0kg
	Neptunium	Unknown		LL	Disposition determination		0.222kg
	Normal uranium	Unknown		LL	Disposition determination		583.0kg
	Plutonium	Unknown		TRU	Other;calibration source	0.0002	
	Thorium	Unknown		LL	Disposition determination	1.2	12,233.000 kg
	Tritium	Unknown		LL	Disposition determination		.00005 kg
					SNL-Alb. Total	**6.750**	**57803.7 kg**
Sandia National Lab - Livermore	Depleted Uranium	No		LL	Future use	50.000	
	Deuterium	No		No	Future use	2.000	
					SNL-Livermore Total	**52.000**	
Savannah River Site	Depleted uranium	Yes	Uranium	LL	Future use	9,000	19410.000
					SRS Total	**9,000.000**	**19,410.000**
Y-12 Plant (Oak Ridge)	Enriched uranium tetrafluoride, COEI 712	Unknown	Could contain heavy metals such as Cr	LL	Future use	0.5700	

Table B-7. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Reason Material Held	Quantity Material (m^3)	Quantity Material (mtu)
	Enriched uranium metal	Yes	Machine turnings are pyrophoric. Could contain heavy metals such as Cr.	LL	Future use	0.0600	
	Enriched uranium alloyed metal, COEI 722	No		LL	Future use	2.8400	
	Enriched uranium mixed oxides, COEI 725	No		LL	Future use	4.9900	
	Combustibles containing enriched uranium	No		LL	Future use	31.9000	
	Solutions containing enriched uranium	Unknown	May contain heavy metals and chlorinated hydrocarbons	LL	Future use	20.300	
	Process residues containing enriched uranium	Unknown	May contain heavy metals and chlorinated hydrocarbons	LL	Future use	197.600	
	Depleted uranium/6% niobium alloy	No		LL	Future use	9.400	
	Depleted uranium/0.75% titanium alloy	No		LL	Future use	1.200	
	Depleted uranium/2% molybdenum alloy	No		LL	Future use	0.200	
					Y-12 Total	**269.060**	
					TOTAL	**57,967.72**	**129,392.520** **58,993.667** **kg**

Table B-8. Total MIN reported by each site. (Spent nuclear fuel is not included.)

DOE Site	Alkali Metals (m^3)	Chemicals (m^3)	Elements and Metals (m^3)	Explosives (m^3)	Lead (m^3)	Other Materials (m^3)	Nuclear Materials (m^3)	Total (m^3)
Ames Laboratory			0.04					0.04
Argonne National Lab - East					0.47			0.47
Argonne National Lab - West					2.14	9.20		11.34
Brookhaven National Lab	0.00		2500.00		50.48	3000.00	0.01	5550.49
Energy Technology Engineering Center	37.84							37.84
Fermilab		1.10	1.00		512.02			514.12
Hanford Site	397.00	862.00	219.00		7.46	66.48	943.08	2495.02
Idaho National Engineering Lab	0.08	409.11			13.78	4.45	14.47	441.89
Inhalation Technology Research Institute					3.2			3.20
K-25 Gaseous Diffusion Plant (Oak Ridge)		2,990.73	5,190.10		2.04	4743.56	17,008.78	29,935.21
Kansas City Plant						Unknown		Unknown
Los Alamos National Lab	0.09						0.30	0.39
Lawrence Berkeley Lab			0.07		83.32	14,793.60	0.60	14,877.59
Lawrence Livermore National Lab							5.12	5.12
Mound Plant			91.00	50.00			4.00	145.00
ORISE					2.00			2.00
Oak Ridge National Lab	58.38	12.55	2,189.47		71.84	428.08	15.01	2775.33
Paducah Gaseous Diffusion Plant		2,900.00	72,000.00				30,600	105,500.00
Portsmouth Gaseous Diffusion Plant		Classified					45.20	45.20
Pantex Plant				578.90				578.90
Rocky Flats Plant		0.19	2,323.72		2.00	0.65	3.34	2,329.90
Stanford Linear Accelerator Center			100.00					100.00
Sandia National Lab - Albuquerque	0.35			1,654.00	12.08	1,202.01	6.75	2,875.19
Sandia National Lab - Livermore	2.0			2.10	2.00		52.00	58.10
Savannah River Site	15.45	42.6	552.40		72.54	1,071.43	9000	10,754.42
West Valley Demonstration Project					0.61			0.61
Y-12 Plant (Oak Ridge)		343.22	883.73	1.00	1.55	1,007.38	269.06	2,505.94
TOTAL	**511.19**	**7,561.50**	**86,050.53**	**2,286.00**	**839.53**	**26,326.84**	**57,967.72**	**181,543.31**

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Appendix C

Survey Data Reported

by States

Table C-1. MIN reported by DOE sites in California.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
Energy Technology Engineering Center	Alkali Metals:					
	Sodium metal	Yes	Sodium	No	37.840	
	Energy Technology Engineering Center Total				**37.840**	
Lawrence Berkeley Lab	Elements and Metals:					
	Mercury	Yes	Mercury	No	0.067	
	Lead:					
	Lead	Yes	Lead	LL	40.000	
	Unused lead	Yes	Lead	No	43.320	
	Other Materials:					
	Concrete and steel blocks	No		LL	14,444.000	
	Contaminated tank - radium-226	Unknown		LL	15.000	
	Electromagnets	No		LL	327.000	
	Oil	Unknown		No	7.6000	
	Nuclear Materials:					
	Depleted uranium encased in steel	Yes		LL	0.600	
	Lawrence Berkeley Lab Total				**14,877.587**	
Lawrence Livermore National Lab	Nuclear Materials:					
	Depleted uranium (D-38)	No		LL	5.12	
	Lawrence Livermore National Lab Total				**5.12**	
Sandia National Laboratory - Livermore	Alkali Metals:					
	Enriched lithium	Yes	lithium salts	LL	2.000	
	Explosives:					
	Explosives	Yes	explosives, lead	No	0.600	
	Small arms ammunition	Yes	explosives, lead	No	1.500	
	Lead:					
	Lead	Yes	lead	No	2.000	
	Nuclear Materials:					
	Depleted uranium	No		LL	50.000	

Table C-1. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
	Deuterium	No		No	2.000	
	Sandia National Lab-Livermore Total				**58.100**	
Stanford Linear Accelerator Center	Elements and Metals:					
	Copper	No		LL	100.000	
	Stanford Linear Accelerator Center Total				**100.000**	
	TOTAL				**15,078.647**	

Table C-2. MIN reported by DOE sites in Colorado.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
Rocky Flats Plant	Chemical Compounds:					
	3A Alcohol (ethyl alcohol)	Yes		LL	0.0010	
	Acetic acid	Yes	Acetic acid	LL	0.0059	
	Acetone	Yes	Acetone	LL	0.0040	
	Alumina	No		LL		0.2950
	Alumina and chromic acid	Yes	U032 chromic acid	LL	0.0003	
	Aluminum nitride	Yes	D001	LL	0.0001	0.4540
	Aluminum oxide	No		LL		1.020
	Ammonium persulfate	Yes	D001	LL	0.0002	0.3630
	Barium zirconate	No		LL		0.3630
	Boron carbide	No		LL		0.3400
	Boron nitride	No		LL		0.8510
	Calcium chloride	No		LL		0.2270
	Calcium sulfate	No		LL		0.2270
	Cerium sulfide	No		LL		0.1200
	Cerium zirconate	No		LL		0.4090
	Chromic acid	Yes	Chromium	LL	0.0002	
	Chromium carbide	Yes	Chromium	LL		0.0910
	Chromium silicide	Yes	Chromium	LL		0.2270
	Chromium trioxide	Yes	Chromium	LL		0.2270
	Cupric nitrate	No		LL		0.4090
	Cupric sulfate	No		LL		0.4652
	Ethyl alcohol	Yes	D001	LL	0.0023	
	Ferric chloride (ferrous chloride)	No		LL		0.4100
	Fluoroboric acid	Yes	D002	LL		0.3000
	Glycerol	No		LL	0.0044	
	Hafnium carbide	No		LL	0.1140	
	Hydrochloric acid	Yes		LL	0.0029	
	Hydrogen peroxide	Yes	Oxidizer	LL	0.0003	

Table C-2. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
	Isopropanol	Yes		LL	0.0029	
	Isopropyl alcohol	Yes		LL	0.027	
	Lanthanum boride	No		LL		0.0681
	Lithium chloride	No		LL		0.9100
	Magnesium chloride/magnesium	No		LL	0.0005	
	Methanol	Yes	U154	LL	0.0010	
	Molybdenum boride	No		LL		0.1600
	Molybdenum carbide	No		LL		0.0680
	Molybdenum silicide	No		LL		0.1360
	Molybdenum sulfite	No		LL		0.5000
	Nitric acid	Yes	D002	LL		0.4630
	Potassium chloride	No		LL		0.0500
	Potassium dichromate	Yes	D003, D007	LL		0.0091
	Potassium fluoride	No		LL		0.4100
	Silicon carbide powder	No		LL		0.3180
	Silicon nitride	No		LL		0.6700
	Silicon nitride powder	No		LL		0.2270
	Sodium bicarbonate	No		LL	0.0006	0.5350
	Sodium hydroxide	Yes	D002	LL	0.022	45.8000
	Sodium stearate	No		LL		0.3180
	Sodium sulfate	No		LL		0.2720
	Sodium sulfite	No		LL		0.0227
	Sodium thiosulfate	No		LL		0.3630
	Strontium sulfide	Yes	P107, D001, D003	LL	0.0005	1.8160
	Tantalum carbide	No		LL		0.1065
	Tantalum carbide 99%	No		LL		0.1140
	Tantalum nitride	No		LL		0.9100
	Tantalum silicide	No		LL		0.3770
	Titanium dioxide	No		LL		0.3630

Table C-2. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
	Toluene	Yes	U220	LL	0.0004	
	Tungsten boride	No		LL		0.0136
	Tungsten carbide	No		LL		1.8160
	Tungsten silicide	Yes	D001	LL	0.0001	0.9100
	Vanadium carbide	No		LL		0.8600
	Vinegar	No		LL	0.0004	
	Xylenes	Yes	U239, D001	LL	0.0019	
	Yttrium oxide	No		LL	0.0005	
	Zinc chloride	No		LL		0.1000
	Zinc sulfide	No		LL		0.0300
	Zirconium carbide	Yes	D001	LL		0.5680
	Zirconium nitride	No		LL		4.2680
	Zirconium oxide	No		LL		0.0750
	Zirconium silicide	No		LL		0.0910
	Elements and Metals:					
	1100 Aluminum	No		LL	0.0003	
	21-6-9 Stainless steel	No		LL	0.0018	
	250 Stainless steel	No		LL	0.0004	
	300 Stainless steel	No		LL	0.0008	
	304 Stainless steel	No		LL	0.0250	
	304L Stainless steel	No		LL	0.0166	
	308L Stainless steel	No		LL	0.0409	
	316 Stainless steel	No		LL	0.0005	
	316L Stainless steel	No		LL	0.0010	
	6061 Aluminum	No		LL	0.0148	
	903 Stainless steel	No		LL	0.0038	
	Aluminum	No		LL	0.2050	
	Aluminum manganese	No		LL	0.0003	
	Aluminum metal	No		LL	0.0002	0.454
	Aluminum powder	Yes	D001	LL	0.0100	

Table C-2. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
	Aluminum scrap metal	No		LL	0.8900	
	Antimony metal	No		LL		0.114
	Beryllium (classified) scrap metal	No		No	25	45400.000
	Beta titanium	No		LL	0.0015	
	Black iron	No		LL	1.5900	
	Boron	Yes	D001 in dust form	LL		0.057
	Brass	No		LL	0.0008	
	Calcium metal	No		LL	0.0015	
	Calcium powder	Unknown	D001	LL	0.00008	
	Carbon steel scrap	No		LL	345.2700	
	Chromium	Yes	Chromium	LL	0.0001	
	Chromium pellets	Yes	Chromium	LL		0.080
	Chromium powder	Yes	Chromium	LL		0.454
	Cobalt powder	Unknown	D001	LL		0.114
	Columbium powder (niobium)	Unknown		LL	0.0006	5.000
	Copper	Unknown	D001 in dust form	LL	0.0310	
	Copper	Unknown	D001	LL	0.0007	5.900
	Copper (classified) scrap metal	No		LL	0.1900	
	Copper metal with zirconium	Unknown	D001	LL		0.227
	Galvanized steel scrap	No		LL	9.400	
	Germanium powder	No		LL		0.02
	Graphite	No		LL	0.002	3.900
	H-13 Tool steel	No		LL	0.0031	
	Iron fillings	No		LL		0.114
	M-2 Tool steel	No		LL	0.0014	
	M-32 Tool steel	No		LL	0.0001	
	M-33 Tool steel	No		LL	0.0006	
	M-34 Tool steel	No		LL	0.0001	
	Manganese chips	Yes		LL		0.030

Table C-2. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
	Molybdenum	No		LL	0.0109	
	Nickel	Unknown	D001	LL		0.463
	Nickel	No		LL		0.114
	Nickel	Unknown	D001	LL	0.0273	
	Nickel chromium alloy	Unknown	D007-chromium	LL	0.0006	
	Niobium	No		LL	0.0022	
	Scrap metal (classified)	No		No	0.690	
	Scrap metal (mixed)	No		LL	310.360	
	Scrap metal (PU&D yard)	Unknown		LL	1600.000	
	Silicon	Unknown	D001	LL	0.0004	0.910
	Silver	Yes	D011 - silver	LL	0.06	629.817
	Stainless steel	No		LL	0.1199	
	Stainless steel classified scrap	No		LL	24.500	
	Stainless steel scrap	No		LL	4.320	
	Steel	No		LL	0.7264	
	Tantalum	Yes	D001	LL	0.0001	
	Tantalum	Yes	D001	LL	0.0162	
	Tin	No		LL		0.045
	Titanium	No		LL	0.0007	2.971
	Titanium	No		LL	0.0970	
	Titanium - 15V - 3AL	No		LL	0.0001	
	Titanium - 6AL - 4V	No		LL	0.0232	
	Tungsten	Unknown	D001	LL	0.0001	
	Tungsten metal	No		LL	0.0008	
	Tungsten powder	Yes	D001	LL	0.0001	2.270
	Unidentified metal scrap	No		LL	0.0500	
	Vanadium	Unknown		LL	0.0046	
	Vanadium	No		LL		0.227
	Yttrium	Yes	D001	LL	0.0002	0.700

Table C-2. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
	Yttrium copper 20.5	No		LL		0.0005
	Yttrium metal	No		LL		0.182
	Zinc	Yes	D001	LL		0.4015
	Zirconium	Yes	D001, D003	LL	0.0009	
	Zirconium	Yes	D001, D003	LL	0.0003	
	Zirconium/titanium	No		LL	0.0028	
	Lead:					
	Lead	Yes	Lead	LL	0.0009	
	Lead	Yes	Lead	LL	1.000	
	Lead bricks	Yes	Lead	LL	1.000	
	Other Materials:					
	604 Hot die grease	Unknown		LL	0.2100	
	732 Multi-purpose sealant	Unknown		LL	0.0001	0.014
	AB Miromet	Unknown		LL	0.0002	
	Aluminum putty	No		LL		0.4540
	Anti-seez	Unknown		LL		0.6944
	Anti-seize lube C5-A	Unknown		LL		7.2600
	Aquasol	Unknown		LL	0.0006	
	Bowl cleaner	No		LL	0.0005	
	Carbolene neoprene adhesive	No		LL	0.0034	
	Celvacene HI vacuum grease	Unknown		LL		0.3630
	Chrome crystallate	Unknown	Chromium	LL		0.2270
	Chromium mesh	Unknown	Chromium	LL	0.0019	
	CIBA hardener	Unknown		LL	0.0003	
	Colonel Clear	Unknown		LL	0.0010	
	Convoil-20	Unknown		LL	0.007	
	De-Solv-It	Unknown		LL	0.0160	
	Die lube	Unknown		LL	0.0095	
	Disinfecting solution	Unknown		LL	0.0004	
	Dow Corning diffusion pump fluid	Unknown		LL	0.0002	

Table C-2. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
	Dow Corning silicone compound	No		LL		0.2100
	Dykem blue	Unknown		LL	0.0004	
	Eutectic salt	Unknown		LL		11.3500
	Fansteel 85	No		LL	0.0003	
	Ferrous final polishing solution	Unknown		LL	0.0002	
	Finish polish	Unknown		LL		0.1360
	Fiske BMI hot die lube	Unknown		LL	0.0019	
	Glass ceramic precoat	Unknown		LL	0.0152	
	Hardener	Unknown		LL	0.0019	
	HE-200 diffusion pump fluid	Unknown		LL	0.0019	
	HI-vacuum grease	Unknown		LL		0.0710
	Hydraulic oil	Unknown		LL	0.0012	
	IDC 998-NMC	No		LL		74.0000
	Inconel	No		LL	0.0033	
	Inconel 718	No		LL	0.00003	
	Inconel 903	No		LL	0.0026	
	JBK-75	No		LL	0.0004	
	Kerosene	Yes		LL	0.0001	
	Liquid heat 810	Unknown		LL		59.0000
	Low temp drawing salt	Unknown		LL		34.0000
	MAR temp-salt B	Unknown		LL		70.4000
	Mariko	Unknown		LL	0.0185	
	Metal marker	Unknown		LL		0.2130
	Moly 99	No		LL		0.1100
	Moly-Dee	Unknown		LL	0.0012	.0027
	Molycoat G paste	Unknown		LL	0.0004	
	Neutral salt K-17	Unknown		LL		32.0000
	Oakite NST	Unknown		LL	0.0006	
	OX-OUT 536	Unknown		LL	0.3390	
	Parquench	Unknown		LL	0.0076	

Table C-2. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
	Paso liquid sander	Unknown		LL	0.0013	
	Plastimet powder	Unknown		LL		1.3600
	Primer	Unknown		LL	0.0009	
	Rustoleum	Unknown	Potentially TC	LL	0.0004	
	Silicon rubber	No		LL		0.0600
	Soluble oil	Unknown		LL	0.0022	
	SS 304L	No		LL		4.7400
	SS powder	No		LL	0.0005	
	Tantalum hafnium	No		LL		0.1820
	Tin tech	No		LL		0.0790
	Titanium sponge	No		LL		0.2300
	Trim tap	Unknown		LL	0.0001	
	Nuclear Materials:					
	Plutonium oxide (IDC H61)	Unknown	May be other components in ductwork sludge	TRU	0.004	40.9236
	Thorium nitrate	Yes	D001,D003	LL	0.630	
	Uranyl nitrate	Unknown		LL	2.711	
	Rocky Flats Plant Total				**2,326.91**	**46,461.35**
	TOTAL				**2,329.91**	**46,461.35**

Table C-3. MIN reported by DOE sites in Idaho.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material(MTU)
Argonne National Lab - West	Lead:					
	Scrap lead, clean	Yes	Lead	No	1.200	
	Scrap lead, radioactive	Yes	Lead	LL	0.940	
	Other Materials:					
	Scrap materials at RSWF, TRU	Yes	Reactive metals	TRU	8.800	
	Scrap materials at RSWF, non-TRU	No		LL	0.400	
	Argonne National Lab-West Total				**11.340**	
Idaho National Engineering Lab	Alkali Metals:					
	Sodium potassium alloy	Yes	Na, K	No	0.079	
	Chemical Compounds:					
	15% $Al(OH)_3$, 35% $Na(NO_3)$, 50% H_20	No		No	0.416	
	Aluminum nitrate	Yes	Oxidizer	No	56.20	
	Aluminum oxide calcine	No		No	22.00	
	Boric acid	Yes	Boric acid	No	0.72	
	Boric acid (enriched)	Yes	Boric acid	No	0.72	
	Boric acid solution	Yes	Acid	No	24.40	
	Cadmium nitrate	Yes	Cadmium	No	11.40	
	Cadmium nitrate solution	Yes	Cd and dilute nitric acid	No	0.63	
	Cadmium sulfate	Yes	Cadmium	No	11.40	
	Calcine	Unknown		HL	0.05	
	Calcium nitrate	No		No	58.50	
	Citric acid	Yes	Citric acid	No	1.60	
	Copper (II) nitrate	No		No	0.009	
	Denitrator product	No		No	0.060	
	Fluoboric acid	Yes	Fluoboric acid	No	1.800	
	Fluoboric acid (bulk)	Yes	Fluoboric acid	No	3.200	
	Fluorinel material	No		No	0.19	
	Gadolinium oxide	No		No	1.300	

Table C-3. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material(MTU)
	Hydrocarbon diluent	Unknown	Maybe benzene	No	1.200	
	Hydrochloric acid	Yes	HCl	No	0.200	
	Hydrofluoric acid	Yes	HF	No	0.300	
	Hydrofluoric acid (bulk)	Yes	HF	No	12.500	
	Kerosene	Yes	Kerosene	No	68.400	
	Knox gelatin	No		No	0.040	
	Methyl isobutyl ketone (hexone)	Yes	Hexone	LL	0.250	
	N-Dodecane	Unknown	Maybe benzene	No	2.900	
	Nickel nitrate II	Yes	Nickel nitrate	No	0.018	
	Nitric acid	Yes	Nitric acid	No	112.900	
	Oxalic acid	Yes	Oxalic acid	No	1.400	
	Pilot plant calcine	Yes	Cd, Cr, Pb, Hg	No	2.40	
	Potassium permanganate	Yes	Potassium permanganate	No	0.400	
	Sodium carbonate	No		No	1.800	
	Sodium hydroxide	No		No	3.200	
	Sulfamic acid (solid)	No		No	0.41	
	Tartaric acid	No		No	1.900	
	Tri-butyl phosphate	No		No	1.200	
	Turco 4324	No		No	0.900	
	Turco 4502	No		No	2.200	
	Z-hydroxyisobutyric acid 90%	Unknown		No	0.001	
	Lead:					
	Clean lead	Yes	Lead	No	8.5	
	Clean lead	Yes	Lead	No	0.72	
	Contaminated lead	Yes	Lead	LL	0.30	
	Lead	Yes	Lead	LL	1.161	
	Lead weights	Yes	Lead	No	3.10	
	Other Materials:					
	Simulated sodium bearing solution	Yes	Acid, Lead, Ni, Cr	No	0.293	

Table C-3. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material(MTU)
	Simulated ZrF solution	Yes	Acid, Pb, Cd, Cr	No	4.160	
	Nuclear Materials:					
	Rocky Flats material	No		LL	0.070	
	Rover ash U & bed material (alumina)	No		LL		0.150
	Uranium	Yes	Nitric acid	LL	14.400	
	Idaho National Engineering Lab Total				**441.897**	2.5291
	TOTAL				**453.237**	2.5291

Table C-4. MIN reported by DOE sites in Illinois.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
Argonne National Lab - East	Lead:					
	Lead	Yes	Lead	No	0.472	
	Argonne National Lab-East Total				**0.472**	
Fermilab	Chemical Compounds:					
	R11 Freon	Yes	Freon	No	1.100	
	Elements and Metals:					
	Beryllium	No		LL	1.000	
	Lead:					
	Lead	Yes	Lead	No	0.006	
	Lead, slightly radioactive	Yes	Lead	LL	1.000	
	Lead tubing	Yes	Lead	No	0.01	
	Nevis shielding blocks	Yes	Lead	LL	511.000	
	Fermilab Total				**514.116**	
	TOTAL				**514.588**	

Table C-5. MIN reported by DOE sites in Iowa.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
Ames Laboratory	Elements and Metals:					
	Yttrium	No		No	0.044	
	Ames Laboratory Total				**0.044**	
	TOTAL				**0.044**	

Table C-6. MIN reported by DOE sites in Kentucky.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (mtu)
Paducah Gaseous Diffusion Plant	Chemical Compounds:					
	Fluorine cell electrolyte (melt)	Yes	HF and KHF	LL	2900.000	
	Elements and Metals:					
	Scrap metal	Unknown		LL	72000.000	
	Nuclear Materials:					
	Depleted uranium hexafluoride			LL	30,000	68600.000
	Green salt (depleted)	Unknown	Fluoride and uranium	LL	600	3168.000
	Uranium oxide feed, normal assay	Unknown	Uranium	LL		0.155
	Uranium oxide feed, enriched	Yes	Uranium	LL		0.021
	Uranium oxide feed, depleted	Unknown	Uranium	LL		0.675
	Paducah Gaseous Diffusion Plant Total				**105,500.000**	**71,768.851**
	TOTAL				**105,500.000**	**71,768.851**

Table C-7. MIN reported by DOE sites in Missouri.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
Kansas City Plant	Other Materials:					
	Electronic assemblies	Yes	Lead, silver	No	Unknown	
	Electronic piece parts and assemblies	Yes	Lead, silver	LL	Unknown	
	Metal fluoride	Yes	Hexafluoride	No	Unknown	
	Kansas City Plant Total				**Unknown**	
					Unknown	

Table C-8. MIN reported by DOE sites in New Mexico.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
Inhalation Toxicology Research Institute	Lead:					
	Nonradioactive lead	Yes	Lead	No	2.0	22,700.000
	Contaminated Lead	Yes	Lead	LL	1.2	13,620.000
	Inhalation Toxicology Research Institute Total				**3.200**	**36,320.000**
Los Alamos National Lab	Alkali Metals:					
	Enriched lithium	Unknown		No	0.09	42.000
	Nuclear Materials:					
	Americium 243	Unknown		TRU		0.044
	Deuterium	Unknown		No	0.2	219.000
	Enriched uranium	Unknown		LL	Unknown	
	Thorium	Unknown		LL	0.1	1049.000
	Tritium	Unknown		LL	Unknown	
	Los Alamos National Lab Total				**0.39**	**1,310.044**
	Alkali Metals:					
	Enriched lithium-6	Unknown		LL	0.35	163.000
	Explosives:					
	Explosive assemblies, explosives, detonators	Yes	Reactive, possible TC	No	70.000	
	Explosive components	Yes	D003, Possible TC	No	250.000	
	Explosive cutters and parachute assemblies	Yes	Reactive, possible TC	No	3.000	
	Explosive pads, lenses, detonators	Yes	Reactive, possible TC	No	9.000	
	Explosive primers, heat powder and heat paper	Yes	Reactive and metals, possible TC	No	6.000	
	Firesets	Yes	Lead, explosives	LL	3.000	
	Firesets, neutron generators	Yes	Lead, explosives	LL	1.000	
	Miscellaneous explosive components	Yes	Reactive, heavy metals	No	6.000	

Table C-8. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
	Miscellaneous explosive assemblies, explosives	Yes	Reactive, possible TC	No	6.000	
	Rocket motor hardware and equipment	Unknown	Reactive, possible TC	No	300.000	
	Rocket motors, explosive components	Yes	Reactive, TC	No	300.000	
	Lead:					
	Lead	Yes	Lead	LL	12.080	
	Other Materials:					
	Experiment cassettes	No		LL	0.0102	
	Graphite with tritium contamination	No		LL	1.000	
	MC ferroelectric neutron generators	No		LL	0.500	
	Military liaison and training materials	Unknown		No	300.000	
	Miscellaneous electronic assemblies	Unknown		No	250.000	
	Neutron generators and subassemblies	Yes	Lead, cadmium	No	0.500	
	Rocket motor hardware and equipment	Yes		No	1000.000	
	System design and development materials	Unknown		No	100.000	
	Weapon component hardware and fixtures	Unknown		No	250.000	
	Nuclear Materials:					
	Americium	Unknown		LL		0.0060
	Californium	Unknown		LL		0.0003
	Depleted uranium	Unknown		LL		44920.000
	Deuterium	Unknown		No	0.03	67.500
	Tritium	Unknown		LL		0.00005
	Enriched uranium	Unknown		LL	1.4199	
	Enriched uranium	Yes	Sodium	LL	4.1000	
	Neptunium	Unknown		LL		0.2220
	Normal uranium	Unknown		LL		583.000
	Plutonium	Unknown		TRU	0.0002	
	Thorium	Unknown		LL	1.2	12233.000

Table C-8. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
	Sandia National Lab-Alb. Total				2,875.1453	57,966.7283
	TOTAL				2,878.7253	95,596.7723

Table C-9. MIN reported by DOE sites in New York.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
Brookhaven National Lab	Alkali Metals:					
	Enriched lithium	Yes	Lithium	No	0.003	
	Lead:					
	Steel shielding	No		LL	2500.00	
	Lead	Yes	Lead	LL	50.000	
	Contaminated lead	Yes	Lead	LL	0.480	
	Other Materials:					
	Concrete shielding	No		LL	3000.000	
	Nuclear Materials:					
	Thorium metal	Yes	Thorium metal	LL	0.002	
	Thorium nitrate	Yes	Thorium nitrate	LL	0.007	
	Uranium 233	Yes	Uranyl nitrate	LL	0.00002	
	Brookhaven National Lab Total				**5,550.492**	
West Valley Demonstration Project	Lead:					
	Lead	Yes	Lead	No	0.6100	
	***West Valley Demonstration Project* Total**				**0.6100**	
	TOTAL				**5,551.1020**	

Table C-10. MIN reported by DOE sites in Ohio.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
Mound Plant	Elements and Metals:					
	Contaminated Ir, Pt, Pt/Rh	No		TRU	1.000	
	Tritium components	Classified	Classified	LL	90.000	
	Explosives:					
	Explosives	Yes	Explosives, lead	No	50.000	
	Nuclear Materials:					
	^{238}Pu Iridium encapsulated heat sources	No		TRU	1.000	
	^{238}Pu oxide	No		TRU	1.000	
	^{239}Pu/beryllium neutron source	No		TRU	1.000	
	Uranium-233 oxide	No		LL	1.000	
	Mound Plant Total				**145.000**	
Portsmouth Gaseous Diffusion Plant	Chemical Compounds:					
	Lithium hydroxide	Yes	Mercury	No	Classified	
	Nuclear Materials:					
	Depleted uranium hexafluoride			LL	33.200	
	Uranium oxide	No		LL	12.000	
	Portsmouth Gaseous Diffusion Plant Total				**45.200**	
	TOTAL				**190.200**	

Table C-11. MIN reported by DOE sites in South Carolina.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)	Quantity Material (MTU)
Savannah River Site	Alkali Metals:						
	Enriched lithium	Yes	Lithium	No	0.850		
	Lithium-aluminum alloy	No		No	13.500		
	Natural lithium	Yes	Lithium	No	1.100		
	Chemical Compounds:						
	Acids	Yes		LL	1.000		
	Chemicals	Yes	Picric acid possible	LL	Unknown		
	Excess chemicals	Yes		No		7.240	
	Excess chemicals	Yes	Lead, solvents, sodium hydroxide	No	Unknown		
	Excess chemicals	Yes		No	0.500		
	Excess chemicals	Yes		No	20.000		
	Excess chemicals	No		No	0.100		
	Isopropyl alcohol	Yes		No	1.000		
	Miscellaneous chemicals	No		No	4.000		
	Miscellaneous chemicals 2	Yes	Methyl ethyl ketone, toluene, toluol	No	4.000		
	Miscellaneous chemicals 3	Unknown		LL	5.000		
	MP-7 Manganese phospholene	Yes		No	2.000		
	Oxalic acid	No		No	2.000		
	Potassium permanganate	No		No	1.000		
	Sodium hydroxide	Yes	NaOH	LL	1.000		
	Sodium sulfite	No		LL	1.000		
	Elements and Metals:						
	Cadmium in safety and control rods	Yes	Cadmium and lead	LL	2.880		
	Granular beryllium metal	Yes	Beryllium	No	0.010		
	Graphite blocks	No		No	1.000		

Table C-11. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)	Quantity Material (MTU)
	Indium sheets	No		No	0.001		
	Metal foils, sheets, copper bead chain	Yes	Lead	No	0.010		
	Scrap cadmium	Yes	Cadmium	No	0.100		
	Scrap metal from power houses	Unknown		No	Unknown		
	Scrap metal/jumpers - jets	Unknown		LL	11	89211.000	
	Stainless steel	No		LL	537.300		
	Zirconium rods	No		No	0.100		
	Lead:						
	Clean lead	Yes	Lead	No	0.3	3564.000	
	Lead	Yes	Lead	LL	1.16	13620.000	
	Lead	Yes	Lead	No	65.000		
	Lead	Yes	Lead	No	0.250		
	Lead	Yes	Lead	No	0.6009		
	Lead	Yes	Lead	No	0.0195		
	Lead shock absorber for control rod	Yes	Lead	LL	0.0002	2.000	
	Leaded shielding windows	Yes	Lead	No	1.000		
	Roser plugs (lead filled)	Yes	Lead	LL	4.0	45400.000	
	Scrap lead for recycling	Yes	Lead	No	0.210		
	Other Materials:						
	Antifoam	Unknown		LL	1.000		
	Bird cages	No		LL	2.000		
	Electronic equipment	Unknown		LL	0.3	1362.000	
	Internally contaminated valve	No		LL	0.500		
	M Area basin equipment	Unknown		LL	1051.000		
	Machined cylinders for safety/control rods	Yes	Cadmium, lithium	No	1.000		
	Machined parts: paraffin filled	No		No	0.500		
	Magnetite blocks	No		No	10.000		
	Shield casks	Yes	Lead	No	2.880		
	Shields, lead-filled and paraffin-filled	Yes	Lead	No	2.000		

Table C-11. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)	Quantity Material (MTU)
	Simulated sludge	Yes	Mercury	No	0.250		
	Tank farm spares	Unknown		LL	Unknown		
	Nuclear Materials:						
	Depleted uranium	Yes	Uranium	LL	9,000		19410.000
	Savannah River Site Total				**10,754.422**	**153,166.240**	**19,410.000**
	TOTAL				**10,754.422**	**153,166.240**	**19,410.000**

Table C-12. MIN reported by DOE sites in Tennessee.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)	Quantity Material (MTU)
K-25 Gaseous Diffusion Plant	Chemical Compounds:						
	Aluminum fluoride	No		No	0.080		
	Amberlite resin 59	No		No	12.300		
	Chlorine trifluoride	No		No	0.300		
	Chromium oxyfluoride	No		LL	0.100		
	Cobaltous fluoride	No		No	1.000		
	Freon 114 (low-level)	No		LL	0.900		
	Freon 114 (non-radioactive)	No		No	0.600		
	Lithium chloride	No		LL	Classified		
	Lithium hydroxide monohydrate FF	No		No	2081.000		
	Molybdenum hexafluoride	No		LL	0.020		
	Process coolants	No		LL	793.000		
	Rhenium hexafluoride	No		No	0.006		
	Rhenium/tungsten hexafluoride	No		No	0.004		
	Spray booth nitric acid	Yes	Heavy metals	LL	100.000		
	Sulfur hexafluoride	No		LL	1.400		
	Tungsten hexafluoride	No		No	0.020		
	Elements and Metals:						
	Nickel powder	No		No	8.000		
	Scrap metal (contaminated)	Yes	Characteristic metals	LL	5000	40,000,000	
	Scrap metal (nonradioactive)	Yes	Characteristic metals	No	181	1450000.000	
	Tungsten	No		No	0.900		
	Vanadium	No		No	0.200		
	Lead:						
	Lead tubing	Yes	Lead	No	2.000		
	Lead weights	Yes	Lead	LL	0.040		
	Other Materials:						
	Alumina	No		No	3.300		

Table C-12. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)	Quantity Material (MTU)
	Bakelite epoxy resin	No		No	3024.000		
	Capacitors	No		LL	0.200		
	Classified surplus material	No		No	5.400		
	Classified surplus material	No		No	Classified		
	Electrical equipment	No		LL	740.000		
	Electrical fuses	Unknown	Lead solder	No		16000 fuses	
	Epoxy	Unknown		No	0.300		
	Fomblin and krytox oils	No		No	0.090		
	Gas trapping media (low-level)	Unknown		LL	36.000		
	Gas trapping media (high-level)	Unknown		LL	1.000		
	Hydraulic pumps	Unknown		No	1.000		
	Light ballasts	No		LL	25.000		
	Lubricating fluid	No		No	1.200		
	Lubricating oil	Yes	Arsenic, chromium	No	757.000		
	Mercury switches	Yes	Mercury	No	0.0500		
	Metal working machines	Unknown		LL	144.000		
	Pipe threader	Unknown		No	2.000		
	UF_6 process equipment	No		LL	Unknown		
	Vacuum pump oil	No		No	0.020		
	Nuclear Materials:						
	Converter material	Yes	TC	LL	2.530		
	K-1421 low-level waste incinerator ash	Unknown		LL	2.690		
	Uranium hexafluoride (depleted)			LL	17,000		36700.000
	Uranium hexafluoride laboratory standards			LL	2.300		
	Uranium oxides (high-level)	Unknown		LL	0.060		
	Uranium oxides (low-level)	Unknown		LL	0.600		
	Vacuum sweepings	Unknown		LL	0.600		
	K-25 Gaseous Diffusion Plant Total				**29,935.210**	**41,450,000.000**	**36,705.000**

Table C-12. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)	Quantity Material (MTU)
ORISE	Lead:						
	Lead pellets	Yes	Lead	No	1.000		
	Lead pipes	Yes	Lead	LL	1.000		
	ORISE Total				**2.000**		
Oak Ridge National Lab	Alkali Metals:						
	Lithium hydride shield	Yes	Lithium	No	6.98	7480.000	
	Lithium shield	Yes	Lithium	No	0.0013		
	Sodium shielding	Yes	Sodium	LL	51.4		
	Chemical Compounds:						
	Acetic acid, glacial	Yes	Acetic acid	No	0.0005		
	Ammonium pentaborate	No		No	0.757		
	Strontium-90 fluoride	No		LL	0.100		
	Zinc bromide	No		No	1.700		
	Zinc bromide	No		No	8.950		
	Zinc bromide	No		No	1.040		
	Elements and Metals:						
	Beryllium	No		No	13.808		
	Beryllium reflector	No		LL	2.000		
	Boron shielding	No		No	2.0		
	Cadmium shielding	Yes	Cadmium	No	0.03		
	Cadmium sleeves	Yes	Cadmium	LL	0.130		
	Graphite shielding	No		No	14.9		
	Scrap metal	Yes	Lead, cadmium	LL	10.500		
	Scrap metal	No		No	2.300		
	Scrap metal	No		No	2049.000		
	Scrap metal	Yes	Lead, cadmium	LL	94.400		
	Stainless steel plates	No		No	0.100		
	Tin bricks	No		No	0.300		

Table C-12. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)	Quantity Material (MTU)
	Lead:						
	Lead	Yes	Lead	LL	0.700		
	Lead	Yes	Lead	LL	0.200		
	Lead	Yes	Lead	LL	1.000		
	Lead	Yes	Lead	No	35.70		
	Lead	Yes	Lead	LL	25.27		
	Lead shielding (unused)	Yes	Lead	No	0.97		
	Lead shielding (used)	Yes	Lead	LL	8.0		
	Other Materials:						
	Boron carbonate shielding	No		No		5000.000	
	Concrete shielding	No		LL	287.000		
	Control plates	No		LL	1.000		
	Core support components	No		LL	2.000		
	Dummy CRBR fuel assemblies	No		No	10.000		
	Equipment (used, machine shop)	Unknown	Heavy metals, benzene	LL	43.000		
	Fuel shipping casks	Unknown		LL	3.000		
	Ion exchange resins	Unknown		No	2.380		
	Radioluminescent (RL) lights	No		LL	8.000		
	Reactor fuel racks	Unknown		LL	1.700		
	Remote shear system	No		LL	70.000		
	Nuclear Materials:						
	Curium-244 oxide	No		TRU	0.01	100.000	
	Depleted uranium	No		LL			5.44
	Thorium nitrate	No		LL	15.0		
	Oak Ridge National Lab Total				**2775.33**	**12,580.000**	**5.440**
Y-12 Plant (Oak Ridge)	Chemical Compounds:						
	LiCl/KCl electrolyte	No		LL	43.000		
	Lithium carbonate/lithium hydroxide	No		LL	56.000		

Table C-12. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)	Quantity Material (MTU)
	Lithium chloride	No		LL	116.000		
	Lithium hydroxide monohydrate	No		LL	30.000		
	Lithium-7 compounds mixed with resin	No		LL	65.000		
	Miscellaneous chemicals (non-RCRA, non-radioactive)	No		No	9.180		
	Miscellaneous lithium compounds	No		LL	1.000		
	Tin 2-ethylhexanoate	Unknown	High health hazard: 4	No	0.0300		
	Unused acetonitrile	Yes	Acetonitrile	No	2.000		
	Unused butane gas	Yes	Butane	No	1.000		
	Unused chromium oxide powder	Yes	Chromium	No	0.010		
	Unused hydrofluoric acid	Yes	HF	No	0.050		
	Unused isopropanol	Yes	Isopropanol	No	2.040		
	Unused medical oxygen	No		No	4.000		
	Unused methanol	Yes	Methanol	No	0.005		
	Unused methyl chloroform	Yes	Methyl chloroform	No	4.250		
	Unused methylene chloride	Yes	Methylene chloride	No	1.000		
	Unused nitrogen tetroxide	Yes	Nitrogen tetroxide	No	1.000		
	Unused petroleum ether	Yes	Petroleum ether	No	0.005		
	Unused silica gel (SiO_2)	No		No	2.000		
	Unused sodium tetrafluoborate powder	No		No	0.300		
	Unused sulfur hexafluoride gas	No		No	3.000		
	Unused trichloroethylene	Yes	Trichloroethylene	No	0.350		
	Unused ethyl alcohol	Yes	Ethanol	No	2.000		
	Elements and Metals:						
	Beryllium and Beryllium compounds	No		No	53.000		

Table C-12. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)	Quantity Material (MTU)
	Brass, unused	No		LL	0.200		
	Copper, unused oxygen free, hi-conductivity	No		No	2.000		
	Mercury, used	Yes	Mercury	No	691.000		
	Mercury, used	Yes	Mercury	No	35.400		
	Nickel-200 alloy	No		No	0.730		
	Unused activated carbon	Unknown		No	1.400		
	Used scrap metal	Unknown	TCLP analyses needed	No	100.000		
	Explosives:						
	Unused explosives	Yes	Explosives	No	1.000		
	Lead:						
	Lead	Yes	Lead	No	1.550		
	Other Materials:						
	Magnaflux SKC-S spotcheck cleaner	Yes	Naphtha	No	0.340		
	Miscellaneous chemicals (non-RCRA, non-radioactive)	No		No	9.180		
	Miscellaneous lithium compounds	No		LL	1.000		
	Miscellaneous proprietary products (Unknown RCRA)	Unknown		No	14.520		
	Miscellaneous proprietary products (Non-RCRA)	No		No	0.130		
	Miscellaneous proprietary products (Unknown RCRA)	Unknown		No	1.400		
	Miscellaneous unused proprietary greases	Unknown	May contain listed substances	No	1.500		
	Miscellaneous unused proprietary oils	Unknown	May contain listed substances	No	0.600		
	Miscellaneous unused proprietary oils	Unknown		No	43.060		

Table C-12. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)	Quantity Material (MTU)
	Miscellaneous unused silicone-free oils	Unknown		No	1.200		
	Sherwin RC-77 fluorescent penetrant	Unknown	Contains refined aliphatic oils, esters, and dyes	No	4.000		
	Unused 3M Super 77-N spray adhesive	Yes	Methylene chloride, 1,1,1 trichloroethan eignitable carriers	No	1.000		
	Unused Ameron Nu-klad adhesive	Yes	Ignitable carriers, may contain listed carriers	No	0.050		
	Unused Belguard Inhibitor no. 550 and 575	Unknown		No	4.300		
	Unused brazing flux	No		No	0.010		
	Unused clear coating varnish	Unknown	May have ignitable or listed carriers	No	0.020		
	Unused Durabond D500 clear tile adhesive	Yes	Methanol, xylene, petroleum distillates, mineral spirits	No	0.500		
	Unused Dykem remover and thinner 138	Yes	Denatured alcohol	No	0.020		
	Unused inks	Unknown	May have ignitable or listed carriers	No	0.1600		
	Unused Magnaflux SKL-HF/S penetrant	Unknown		No	0.030		
	Unused molecular sieve, type 13X	No		No	0.300		

Table C-12. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)	Quantity Material (MTU)
	Unused Oatey 8700 primer	Unknown	May have ignitable or listed carriers	No	0.020		
	Unused parts for 7500-ton press	No		No	180.000		
	Unused radio cement	Yes	Ignitable carriers, may contain listed carriers	No	0.100		
	Unused rubber-gel mix	Yes	Lead	No	1.000		
	Unused Shell Epon resin 828	Yes	Ethers	No	0.010		
	Unused Troychem iron	Yes	Xylene, trimethyl benzenes	No	0.060		
	Unused Ucon lubricant LB-165	No		No	0.600		
	Unused yellow smoke candle	Unknown	May be ignitable	No	0.400		
	Used molecular sieve, type 5A	Yes	Oxides of silicon, sodium, calcium, aluminum	No	0.800		
	Used pipe containing ^{60}Co	No		LL	0.2500		
	Used surplus machine tools	Unknown	Possible lead in some bushings	LL	741.000		
	Used Ucon-A quenchant fluid	Unknown		No	10.000		
	Nuclear Materials:						
	Combustibles containing enriched uranium	No		LL	31.9000		
	Depleted uranium/0.75% titanium alloy	No		LL	1.200		
	Depleted uranium/2% molybdenum alloy	No		LL	0.200		
	Depleted uranium/6% niobium alloy	No		LL	9.400		
	Enriched uranium alloyed metal, COEI 722	No		LL	2.8400		

Table C-12. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)	Quantity Material (MTU)
	Enriched uranium metal	Yes	Machine turnings are pyrophoric. Could contain heavy metals such as Cr.	LL	0.0600		
	Enriched uranium mixed oxides, COEI 725	No		LL	4.9900		
	Enriched uranium tetrafluoride, COEI 712	Unknown	Could contain heavy metals such as Cr	LL	0.5700		
	Process residues containing enriched uranium	Unknown	May contain heavy metals and chlorinated hydrocarbons	LL	197.600		
	Solutions containing enriched uranium	Unknown	May contain heavy metals and chlorinated hydrocarbons	LL	20.300		
	Y-12 Plant Total				**2,505.94**		
	TOTAL				**35,218.48**	**41,462,580.000**	**36,710.440**

Table C-13. MIN reported by DOE sites in Texas.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (kg)
Pantex Plant	Explosives:					
	High explosive powder	Yes	Explosives	No	578.900	
	Pantex Plant Total				**578.900**	
	TOTAL				**578.900**	

Table C-14. MIN reported by DOE sites in Washington.

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (mtu)
Hanford Site	Alkali Metals:					
	Metallic sodium	Yes	Sodium	LL	177.000	
	Non-radioactive alkali metal	Yes	Alkali metals	No	220.000	
	Chemical Compounds:					
	Contaminated TBP/NPH solvent	Yes	Nitric acid, TBJ, KOH, H_2SO_4	LL	76.000	
	Purex bulk cold processing chemicals	Yes	H_2O_2, ammonium nitrate	No	100.090	
	Purex canyon acidic water heel	Yes	Acid, possible	LL	194.040	
	Purex essential material tank heel	Yes	HNO_3, TBP, KOH, H_2SO_4	No	5.670	
	Recovered nitric acid	Yes	Nitric acid, maybe heavy metals	LL	486.200	
	Elements and Metals:					
	Mercury in AMU basement	Yes	Mercury	No	0.001	
	Zircaloy-2 alloy	No		No	219.000	
	Lead:		Lead:			
	Lead	Yes	Lead	No	5.43	
	Lead bricks	Yes	Lead	No	0.033	
	Tank farm lead shielding	Yes	Lead	LL	2.00	
	Other Materials:					
	Borated carbon balls	No		LL	17.000	
	Encapsulated cesium chloride	Unknown		LL	0.025	
	Irradiated non-fuel components	No		LL	4.400	
	Miscellaneous structural scrap	No		TRU	20.000	
	Purex deactivated building components	Yes	Oil, grease, cadmium, lead, mercury, etc.	LL	Unknown	
	Purex deactivated equipment	Yes	Oil, grease, cadmium, lead, mercury, etc.	LL	Unknown	
	Purex U or Pu process solution	Yes	Cr, nitric acid	TRU	24.050	
	WESF CsCl program material	No		LL	1.000	

Table C-14. (continued).

DOE Site	Unique Common Name	Hazardous Components	Constituents	Radio-active	Quantity Material (m^3)	Quantity Material (mtu)
	Nuclear Materials:					
	Depleted uranium alloy	Unknown		LL	0.157	3.000
	Depleted uranium metal - CML	Unknown		LL	4.160	
	Neptunium-237 nitrate solution	Yes	Nitric acid, maybe Cr	LL	Classified	
	Purex dissolver heels	Yes	Nitric acid	TRU	19.700	
	Purex E-cell floor debris	Yes	Chromium	LL	0.960	
	Purex UNH solution	Yes	Nitric acid, maybe Cr	LL	744.700	
	Residual and fuel basin sludge	Unknown		LL	55.900	
	Residual/fuel basin sludge 2	Unknown		LL	81.900	
	Unirradiated fuel materials	No		Yes	5.000	
	Uranium trioxide - depleted	No		LL	30.600	
	Uranium trioxide - LEU	No		LL		456.04
	Hanford Total				**2,495.016**	**460.060**
	TOTAL				**2,495.016**	**460.060**

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Appendix D

Spent Nuclear Fuel

Table D.1 Spent and Irradiated Nuclear Fuel.

DOE Site	Unique Common Name	Potentially Hazardous Constituents	Quantity (Metric Tons of Heavy Metal)	Quantity (cubic meters)
Argonne National Lab - East	EBR-II/FFTF	Yes/sodium	0.06	unknown
	Commercial		0.019	unknown
	Argonne National Lab-East Total		**0.079**	
Argonne National Lab - West	Stored irradiated fuel	Yes/sodium	55.611	214.04
	Argonne National Lab-West Total		**55.611**	**214.040**
Brookhaven National Lab	BMRR spent fuel	No	0.003	0.03
	HFBR spent fuel	No	0.252	3.2
	Brookhaven National Lab Total		**0.255**	**3.230**
Idaho National Engineering Lab	AI	No	0.0079	0.04
	APPR (AGE-2)	No	0.00002	0.012
	ARMF	No	0.0002	0.014
	ARMF/CFRMF	No	0.014	0.076
	ATR core	No	0.046	0.96
	ATR fuels	No	0.929	10
	ATR recycle	No	0.472	6.2
	ATR spent	No	0.094	1.3
	BCD B17	No	0.41	0.19
	BCD-LFRSB	No	0.31	0.19
	BMI	No	0.0019	0.017
	Borax V	No	0.021	0.3
	CANDU spent fuel	No	0.0026	0.03
	Connecticut Yankee	No	0.38	0.19
	Core Filter	No	0.217	0.003
	DRCT	No	21	4.54
	Dresden	No	0.165	0.13
	Dresden SA-1	No	0.0186	0.13
	EBR-II ANL-6	Yes/sodium	0.0016	0.006
	EBR-II fuels	Yes/sodium	2.03	4.81

Table D.1 (continued).

DOE Site	Unique Common Name	Potentially Hazardous Constituents	Quantity (Metric Tons of Heavy Metal)	Quantity (cubic meters)
	EMAD	No	2.2	0.94
	Fermi blanket	Yes/sodium	34.17	18.7
	Fermi core I and II	Yes/sodium	3.9	1.2
	Fort St Vrain reactor fuels	Yes/metal carbides	8.6	80
	Gap Controller	No	0.0089	0.08
	GCRE (can and pellets)	No	0.001	0.02
	Geneva, or VBWR	No	0.012	0.07
	GETR filters	No	0.0044	0.19
	H B Robinson	No	0.2633	0.57
	Halden	No	0.0068	0.14
	HFBR fuels	No	0.0634	0.94
	LOFT	No	2.2	1.3
	LOFT fines	No	0.0105	0.001
	LOFT lead rod	No	0.0035	0.02
	MAPI rods	No	0.022	0.96
	MURR fuels	No	0.038	0.54
	Naval fuels	No	6.847	95.
	OPTRAN spent fuel	No	0.0197	0.08
	ORR	No	0.0033	0.07
	Pathfinder	No	0.0534	1.36
	PBF reactor driver core	No	0.56	0.84
	PCM spent fuel	No	0.028	0.12
	Peachbottom fuels	Yes/metal carbides	3.000	52.72
	Peachbottom spent fuel	No	0.3644	0.42
	Pulstar Buffalo	No	0.252	0.1
	RIA	No	0.0061	0.08
	Saxton	No	0.0089	0.115
	Shippingport LWBR fuels	No	42.57	31.1

Table D.1 (continued).

DOE Site	Unique Common Name	Potentially Hazardous Constituents	Quantity (Metric Tons of Heavy Metal)	Quantity (cubic meters)
	Shippingport PWR	No	0.599	3.79
	SM-A1	No	0.0658	1.2
	SNAP	No	0.029	0.1
	SPEC (Orme)	No	0.002	0.005
	Spent fuel - Belgian	No	0.06	0.26
	SPSS (SPERT)	No	0.001	0.012
	Surry	No	14	6.16
	Thermocouple spent fuel	No	0.0031	0.03
	TMI-2 fuel debris	Yes/silver, cadmium	82	129
	Tory II-A	No	0.0487	0.84
	Tory II-C	No	0.059	3.5
	TRIGA (Ber-II)	No	0.009	0.24
	TRIGA aluminum	No	0.1	0.45
	TRIGA FLIP	No	0.0012	0.01
	TRIGA stainless steel	No	0.049	0.21
	U of Washington	No	0.0041	0.07
	Idaho National Engineering Lab Total		**228.3683**	**462.691**
Hanford Site	N Reactor	No	2100.06	205.
	Single Pass Reactor (SPR)	No	3.37	0.25
	TRIGA Al OSU	No	0.02	2.7
	EBR (LANL)	Yes/sodium	0.2	16.4
	GETCF and SEFOR	No	0.05	5.3
	TRIGA Al	No	0.01	0.02
	FFTF irradiated fuel	Yes/sodium	11	16.5
	TRIGA SS	No	0.01	0.04
	EBR-II	Yes/sodium	0.02	0.2
	LWR	No	0.09	4.1
	Calvert Cliffs (PWR)	No	0.67	0.37

Table D.1 (continued).

DOE Site	Unique Common Name	Potentially Hazardous Constituents	Quantity (Metric Tons of Heavy Metal)	Quantity (cubic meters)
	Cooper (BWR)	No	0.37	0.17
	H B Robinson (PWR)	No	0.03	0.005
	Point Beach-1 (PWR)		1.16	0.56
	Shippingport PWR blanket	No	15.78	9.6
	Hanford Site Total		**2,132.840**	**261.215**
Los Alamos National Lab	Omega West Nuclear Reactor	No	0.021	0.7
	Los Alamos National Lab Total		0.0210	0.7000
Miscellaneous facilities	Miscellaneous spent fuel	No	0.220	3.71
	Miscellaneous facilities Total		**0.2200**	**3.7100**
Naval Reactors Facility	Naval fuel	No	3.1	48
	Shippingport PWR C1 and C2	No	1.6	23
	Naval Reactor Facility Total		**4.700**	**71.000**
Oak Ridge National Lab	SRS U-233	No	0.07	1
	Hanford U-233	No	0.023	0.3
	BSR	No	0.003	0.2
	ORR	No	0.003	0.18
	HIFR	No	0.57	7.5
	Peachbottom	Yes/sodium	0.003	0.5
	Con Edison	No	1.215	1
	Miscellaneous commercial	No	0.007	1
	TSR Jasper	No	0.868	0.3
	MSRE	No	0.037	8.3
	TSR	No	0.0092	0.1
	Oak Ridge National Lab Total		**2.8082**	**20.380**
Public Services of Colorado	Ft. St. Vrain fuel	Yes/metal carbides	16	160
	Public Services of Colorado Total		**16.000**	**160.000**
Sandia National Lab - Albuquerque	CX	Yes/uranium carbide	0.02	0.1
	SPR-II	No	0.1	0.2

Table D.1 (continued).

DOE Site	Unique Common Name	Potentially Hazardous Constituents	Quantity (Metric Tons of Heavy Metal)	Quantity (cubic meters)
	SPR-II & III	No	0.03	0.1
	SPR-III	No	0.22	0.1
	FREC	No	0.01	0.1
	ACRR	No	0.03	1
	PNL mixed	No	0.034	0.11
	Experiments	No/Possible irradiated silver solder; D011	0.001	0.001
	Sandia National Lab - Albuquerque Total		**0.445**	**1.711**
Savannah River Site	F-Canyon target	No	22.634	5.2
	H-Canyon driver	No	0.068	0.42
	K-Basin driver	No	3.256	29
	KLP-Basin non-uranium target	No	0.059	0.38
	L-Basin driver	No	2.613	16.7
	L-Basin target	No	115.498	26.5
	P-Basin driver	No	1.408	14.8
	EBR-II target	No	17	3
	target samples	No	0.37	0.5
	Foreign from relief	No	0.06	0.2
	CANDU	No	0.0502	0.16
	CVTR	No	0.067	0.05
	Dresden	No	2.5	1.1
	ERR (Elk River Reactor)	No	0.224	3.1
	LWR Samples	No	0.012	0.03
	Nereide	No	0.035	0.4
	Saxton mixed oxide	No	0.283	0.48
	Saxton UO	No	0.089	0.5

Table D.1 (continued).

DOE Site	Unique Common Name	Potentially Hazardous Constituents	Quantity (Metric Tons of Heavy Metal)	Quantity (cubic meters)
	VBWR	No	0.012	0.003
	B & W scrap	No	0.000003	0.0004
	EBR-II (ANL and HEDL)	Yes/sodium	0.00071	0.01
	EBWR	No	11.5887	6.14
	GCRE	No	0.061	0.01
	EPR-1	No	0.000002	0.008
	HWCTR (heavy water components test reactor)	No	1.918	0.51
	H B Robinson	No	0.00005	0.008
	Sodium reactor experiment	Yes/sodium, uranium carbide	0.199	0.107
	ORR	No	0.1307	1.5
	Sterling forest	No	0.123	4
	ORNL (S1W)	No	0.00018	0.007
	ORNL Mixed Oxide	No	0.00038	0.002
	HTRE	No	0.004	0.1
	ML-1	No	0.058	1
	SPERT-3	No	0.005	0.01
	Shippingport	No	0.016	0.02
	Taiwan research reactor	No	21	3.4
	JMTR	No	0.0167	20
	RHF (reacteur a haut flux)	No	0.0255	0.3
	ANL Janus	No	0.003	0.1
	ATSR	No	0.003	0.1
	MIT	No	0.016	0.1
	MURR	No	0.0486	10
	RINC (Rhode Island Nuclear Center)	No	0.0037	0.1
	University of Michigan	No	0.0339	10
	University of Virginia	No	0.0019	4

Table D.1 (continued).

DOE Site	Unique Common Name	Potentially Hazardous Constituents	Quantity (Metric Tons of Heavy Metal)	Quantity (cubic meters)
	Savannah River Site Total		**201.4950**	**164.0554**
Universities	Miscellaneous spent fuel	No	3.874	5.4
	Universities Total		**3.874**	**5.400**
West Valley Demonstration Project	Spent fuel	No	27	4.8
	West Valley Demonstration Project Total		**27.000**	**4.800**
Y-12 Plant (Oak Ridge)	Irradiated spent fuel	No	0.209	0.14
	Y-12 Plant Total		**0.209**	**0.140**
	TOTAL		**2,673.9255**	**1,373.0724**

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