
Low-Level Waste Inventory, Characteristics, Generation, and Facility Assessment for Treatment, Storage, and Disposal Alternatives Considered in the U.S. Department of Energy Waste Management Programmatic Environmental Impact Statement

by M.L. Goyette and D.A. Dolak

Environmental Assessment Division,
Argonne National Laboratory, 9700 South Cass Avenue, Argonne, Illinois 60439

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

December 1996

Work sponsored by United States Department of Energy,
Assistant Secretary for Environmental Management

MASTER

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED *kg*

DISCLAIMER

**Portions of this document may be illegible
in electronic image products. Images are
produced from the best available original
document.**

CONTENTS

NOTATION	ix
ABSTRACT	1
1 INTRODUCTION	1
2 LOW-LEVEL WASTE INVENTORY AND GENERATION VOLUMES	3
2.1 Assumptions	3
2.1.1 Waste Stream Treatment Subgrouping Identification	3
2.1.2 Radiological Profiles	5
2.2 Low-Level Waste Volumes by Installation: Waste Management Wastes	7
3 REPRESENTATIVE LOW-LEVEL WASTE MANAGEMENT TECHNOLOGIES	15
3.1 Overview	15
3.2 Waste Management Programmatic Environmental Impact Statement Technologies	17
3.2.1 Incineration	17
3.2.2 Solidification	21
3.2.3 Vitrification	22
3.2.4 Compaction and Supercompaction	25
3.2.5 Size Reduction	30
3.2.6 Evaporation/Concentration	32
3.2.7 General Aqueous Liquid Treatment	34
3.2.8 Packaging	37
3.2.9 Interim Storage	37
3.2.10 Disposal	40
4 EXISTING LOW-LEVEL WASTE MANAGEMENT FACILITIES	46
4.1 Assumptions	46
4.2 Facility Capabilities and Capacities	48

CONTENTS (Cont.)

5	WASTE LOADS BY WASTE MANAGEMENT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT ALTERNATIVE	52
5.1	Assumptions	52
5.2	Alternative and Case Descriptions	52
5.2.1	No Action Alternative	53
5.2.2	Minimum Treatment Alternatives	53
5.2.3	Volume Reduction Alternatives	56
5.3	Waste Loads	57
5.3.1	No Action Alternative	59
5.3.2	Minimum Treatment Alternatives	61
5.3.3	Volume Reduction Alternatives	61
6	REFERENCES	68
	APPENDIX A: Waste Management Radiological Profiles	A-1
	APPENDIX B: No Action Alternative: Case 1 — Radionuclide Throughput and Air Release by Site and Technology	B-1
	APPENDIX C: Minimum Treatment Cases — Radionuclide Throughput and Air Release by Site	C-1
	APPENDIX D: Volume Reduction Cases — Radionuclide Throughput and Air Release by Site and Technology	D-1
	APPENDIX E: Volume Reduction Cases — Total Waste Management Disposal Volume and Air Release by Site	E-1

FIGURES

3.1	Low-Level Waste Management Technologies and Flow Paths	16
3.2	Incineration Flow Sheet	19
3.3	Cement-Based Solidification Flow Sheet	23

FIGURES (Cont.)

3.4	Vitrification Flow Sheet	26
3.5	Compaction Flow Sheet	29
3.6	Size Reduction Flow Sheet	32
3.7	Evaporation/Concentration Flow Sheet	35
3.8	General Aqueous Liquid LLW Treatment Flow Sheet	38
3.9	Waste Packaging Flow Sheet	40
3.10	Temporary Waste Storage Flow Sheet	42
3.11	Disposal Flow Sheet	44
4.1	Map of DOE LLW Transportation and Disposal Configuration	47
5.1	Minimum Treatment Alternatives: Annual Disposal Volume Comparison	64
5.2	Volume Reduction Alternatives: Annual Disposal Volume Comparison	67

TABLES

2.1	Representative Low-Level Waste Radiological Category Source Term Distributions	6
2.2	Site-Specific Differences in the Low-Level Waste Characterization Used in the WM PEIS from Data Presented in the Integrated Data Base and the WMIS	8
2.3	Site-Specific Low-Level Waste Characterization: Waste Management Wastes	9
3.1	Incineration Parameters	20
3.2	Cement-Based Solidification Parameters	24

TABLES (Cont.)

3.3	Vitrification Parameters	27
3.4	Drum or Box Compactor Parameters	30
3.5	Supercompaction Parameters	31
3.6	Material Sizing Parameters	33
3.7	Evaporation/Concentration Parameters	36
3.8	General Aqueous Liquid Treatment Parameters	39
3.9	Waste Packaging Parameters	41
3.10	Interim Storage Parameters	43
3.11	Disposal Parameters	45
4.1	Existing LLW Treatment, Storage, and Disposal Capabilities	49
5.1	Summary of Low-Level Waste Alternatives	54
5.2	Generator Site — Disposal Site Linkages: Minimum Treatment Alternatives	55
5.3	Pretreatment at Waste Generation Site: Minimum Treatment Alternatives	56
5.4	Regional Treatment and Disposal Sites for Volume Reduction Alternatives	57
5.5	Treatment Train at Regional or Central Treatment Site: Volume Reduction Alternatives	58
5.6	Pretreatment at Waste Generation Site: Volume Reduction Alternatives	58
5.7	No Action Alternative Waste Loads	60
5.8	Minimum Treatment Alternatives: Annual Waste Treatment Volumes by Site	62

TABLES (Cont.)

5.9	Minimum Treatment Alternatives: Annual Disposal Volumes	63
5.10	Volume Reduction Alternatives: Annual Waste Treatment Volumes by Site and Technology	65
5.11	Volume Reduction Cases: Annual Disposal Volumes	66
B.1	Savannah River Site Saltstone Disposal Activity and Air Release: No Action Alternative	B-3
B.2	No Action Alternative LLW: Radionuclide Throughput and Air Release by Site and Technology at Treatment Site	B-7
B.3	No Action Alternative: Disposal Volumes, Activities, and Air Release at Disposal Sites	B-57
C.1	Radionuclide Throughput and Air Release by Site	C-7
C.2	Total Disposal Volume and Air Release by Site, LLW Alternative: Regionalized #1	C-39
C.3	Disposal Volume and Air Release by Site, LLW Alternative: Regionalized #3	C-51
C.4	Total Disposal Volume and Air Release by Site, LLW Alternative: Regionalized #6	C-58
C.5	Total Disposal Volume and Air Release by Site, LLW Alternative: Centralized #1	C-61
D.1	Radionuclide Throughput and Air Release by Site and Technology, Alternative: Regionalized #2	D-5
D.2	Radionuclide Throughput and Air Release by Site and Technology, Alternative: Regionalized #4	D-61

TABLES (Cont.)

D.3	Radionuclide Throughput and Air Release by Site and Technology, Alternative: Regionalized #5	D-105
D.4	Radionuclide Throughput and Air Release by Site and Technology, Alternative: Centralized #5	D-123
E.1	Total Disposal Volume and Air Release by Site, LLW Alternative: Regionalized #4	E-5
E.2	Total Disposal Volume and Air Release by Site, LLW Alternative: Regionalized #5	E-13
E.3	Total Disposal Volume and Air Release by Site, LLW Alternative: Centralized #3	E-21
E.4	Total Disposal Volume and Air Release by Site, LLW Alternative: Centralized #5	E-23

NOTATION

The following is a list of acronyms and abbreviations (including units of measure) used in this document.

ACRONYMS

Ac	actinium
Am	americium
ANL-E	Argonne National Laboratory-East
ANL-W	Argonne National Laboratory-West
Ba	barium
BAPL	Bettis Atomic Power Laboratory
BCL	Battelle Columbus Laboratories
Bi	bismuth
BNL	Brookhaven National Laboratory
C	carbon
Ce	cerium
CIF	Consolidated Incinerator Facility
Cm	curium
CO	carbon monoxide
CO ₂	carbon dioxide
Co	cobalt
Cr	chromium
Cs	cesium
D&D	decontamination and decommissioning
DOE	U.S. Department of Energy
EM	Environmental Management
EPA	U.S. Environmental Protection Agency
ER	environmental restoration
Eu	europium
Fe	iron
FEMP	Fernald Environmental Management Project
H	hydrogen
H ₂ O	water
HEPA	high efficiency particulate air filter
HLW	high-level waste
I	iodine
IAEA	International Atomic Energy Agency
IDB	Integrated Data Base
INEL	Idaho National Engineering Laboratory

ITRI	Inhalation Toxicology Research Institute
K-25	K-25 Plant, ORR
KAPL	Knolls Atomic Power Laboratory
KCP	Kansas City Plant
LANL	Los Alamos National Laboratory
LBL	Lawrence Berkeley Laboratory
LLMW	low-level mixed waste
LLNL	Lawrence Livermore National Laboratory
LLW	low-level waste
Mn	manganese
Nb	niobium
Ni	nickel
NO _x	nitrogen oxide
Np	neptunium
NRC	U.S. Nuclear Regulatory Commission
NRF	Naval Reactor Facility
NTS	Nevada Test Site
ORISE	Oak Ridge Institute for Science and Education
ORNL	Oak Ridge National Laboratory
ORR	Oak Ridge Reservation
P	phosphorus
Pa	protactinium
Pb	lead
PEIS	Programmatic Environmental Impact Statement
PGDP	Paducah Gaseous Diffusion Plant
Pm	promethium
PORTS	Portsmouth Gaseous Diffusion Plant
Pr	praseodymium
PM ₁₀	particulate matter less than 10 micrometers in diameter
PNL	Pacific Northwest Laboratory
Po	polonium
PPPL	Princeton Plasma Physics Laboratory
Pu	plutonium
Ra	radium
RFETS	Rocky Flats Environmental Technology Site (formerly Rocky Flats Plant [RFP])
Rh	rhodium
RMI	Reactive Metals, Inc.
Ru	ruthenium
S	sulfur
Sb	antimony
SLAC	Stanford Linear Accelerator Center
Sm	samarium
SNL-CA	Sandia National Laboratories - CA

SNL-NM	Sandia National Laboratories - New Mexico
SO ₂	sulfur dioxide
Sr	strontium
SRS	Savannah River Site
Tc	technetium
Te	tellurium
Th	thorium
Tl	thallium
TRUW	transuranic waste
TSD	treatment, storage, and disposal
U	uranium
WERF	Waste Experimental Reduction Facility
WHC	Westinghouse Hanford Company
WM	waste management
WMIS	Waste Management Information System
WVDP	West Valley Demonstration Project
Y	yttrium
Y-12	Y-12 Plant, ORR
Zr	zirconium

UNITS OF MEASURE

Ci	curie(s)
cm ²	square centimeter(s)
cm ³	cubic centimeter(s)
d	day(s)
ft ³	cubic foot(feet)
g	gram(s)
gal	gallon(s)
h	hour(s)
kg	kilogram(s)
L	liter(s)
m	meter(s)
m ²	square meter(s)
m ³	cubic meter(s)
min	minute(s)
mrem	millirem(s)
nCi	nanocurie(s)
pCi	picocurie(s)
t	ton(s)
yr	year(s)

1

**LOW-LEVEL WASTE INVENTORY, CHARACTERISTICS, GENERATION, AND
FACILITY ASSESSMENT FOR TREATMENT, STORAGE, AND DISPOSAL
ALTERNATIVES CONSIDERED IN THE U.S. DEPARTMENT OF ENERGY
WASTE MANAGEMENT PROGRAMMATIC ENVIRONMENTAL
IMPACT STATEMENT**

by

M.L. Goyette and D.A. Dolak

ABSTRACT

This report provides technical support information for use in analyzing environmental impacts associated with U.S. Department of Energy (DOE) low-level radioactive waste (LLW) management alternatives in the Waste Management (WM) Programmatic Environmental Impact Statement (PEIS). Waste loads treated and disposed of for each of the LLW alternatives considered in the DOE WM PEIS are presented. Waste loads are presented for DOE Waste Management (WM) wastes, which are generated from routine operations. Radioactivity concentrations and waste quantities for treatment and disposal under the different LLW alternatives are described for WM waste.

1 INTRODUCTION

Low-level waste (LLW) is radioactive waste that is not high-level waste (HLW), spent fuel, transuranic waste (TRUW) (greater than 100 nanocuries [nCi]/gram [g]), or by-product material as defined in Section 11e(2) of the Atomic Energy Act of 1954. Low-level waste is produced in a variety of forms by defense and research activities. U.S. Department of Energy (DOE) LLW results from daily handling and processing of radioactive materials involved in DOE's defense activities, uranium enrichment operations, naval nuclear propulsion program, and various research and development activities. Low-level waste can contain many different radionuclides in activities ranging from trace quantities to several thousand curies. Low-level waste is present in several physical forms as well, including liquids, wet solids or sludge, and dry solids. Solid LLW includes contaminated compactible and combustible materials, contaminated equipment and irradiated hardware, and contaminated soil, sediment, concrete, brick, and rock. Liquid LLW is treated to concentrate the radioactive contaminants into a sludge or solid that may also require packaging prior to disposal.

Currently, all LLW generated by DOE activities must be buried at DOE sites. Disposal of DOE-generated LLW is authorized at the following six sites: Hanford, Idaho National Engineering Laboratory (INEL), Los Alamos National Laboratory (LANL), Nevada Test Site (NTS), Oak Ridge Reservation (ORR), and the Savannah River Site (SRS) (DOE 1993b). More than 30 sites within the DOE complex generate LLW (Waste Management Information System [WMIS] 1992). Wastes from sites without disposal authorization are transported to one of the six authorized sites for disposal. In 1994, approximately $52,170 \text{ m}^3$ ($1,840,000 \text{ ft}^3$) of LLW (containing 621,300 Ci) was buried (DOE 1995). Of the six disposal sites, NTS disposed of the largest volume of LLW in 1994 (approximately $22,900 \text{ m}^3$ [$80,900 \text{ ft}^3$]). Both NTS and Hanford receive the largest volume of wastes from off-site, and in 1994, they disposed of the first and second largest quantities of LLW (44% and 26%, respectively) (DOE 1995).

2 LOW-LEVEL WASTE INVENTORY AND GENERATION VOLUMES

Low-level waste can contain many different radionuclides in many different combinations. Activity can be present in trace quantities up to thousands of curies. Low-level waste can also take many physical forms, ranging from dilute liquids to activated metal equipment. Because of this, it was necessary to develop representative source terms and treatability categories for DOE LLW, which are presented in Section 2.1. Section 2.2 presents site-specific LLW characterization data.

2.1 ASSUMPTIONS

Previously buried or disposed of LLW and LLW generated by environmental restoration activities or by decontamination and decommissioning (D&D) operations are not included in the LLW inventory presented in this report. For the purposes of the Waste Management Programmatic Environmental Impact Statement (WM PEIS), future LLW generation, storage, and burial rates are assumed to be the same as those identified in Section 2.2. This assumption does not take into consideration several factors that could change the current quantities of LLW generated within DOE. Factors that could reduce the quantities of LLW are waste minimization, reconfiguration of the DOE Nuclear Weapons Complex, cancellation and no replacement of existing weapon programs, and the phasing out of spent nuclear fuel reprocessing. Factors that could increase the quantities of LLW are reclassification of TRUW as LLW and/or reclassification of mixed waste as LLW on the basis of improved waste analysis, dismantlement of weapons, and LLW generated from the treatment of other wastes types such as HLW or mixed waste.

Low-level waste inventories, generation rates, and radiological and physical characterization used in the WM PEIS were developed from existing DOE data bases. The Integrated Data Base (IDB) (DOE 1992c, 1995) is an annual report that summarizes inventories, projections, and characteristics for all types of radioactive waste across the DOE complex. Its primary purpose is to provide background information for program planning within DOE. The Waste Management Information System data base (WMIS 1992) is a computerized data base that includes site-specific information about generation rates, inventories, and physical and radiological characteristics of DOE wastes. The data in WMIS are developed from questionnaires sent to the individual waste generating sites within DOE.

2.1.1 Waste Stream Treatment Subgrouping Identification

Low-level waste physical characteristics were divided into six categories in the 1992 Integrated Data Base (DOE 1992c): (1) biological — sewage sludge, animal carcasses, excreta, etc.; (2) contaminated equipment — components, maintenance wastes, etc.; (3) decontamination debris — waste resulting from D&D efforts, construction debris, etc.; (4) dry solids — normal plant wastes, blotting paper, combustible materials, etc.; (5) solidified sludge — wastes solidified from

a process sludge such as evaporator bottoms, solidification of precipitated salts, etc.; and (6) other — materials outside the previous categories. The classification of waste type is further subdivided in terms of "generated on-site," "stored," and "buried." A summary of the total waste quantity and activity for these six different physical characteristics of DOE LLW is presented in the IDB. This summary is DOE complexwide and is not sufficiently detailed to conduct the treatment, storage, and disposal (TSD) alternative analysis needed for the WM PEIS.

To perform the TSD alternative analysis, LLW was first classified according to the method of treatment, packaging, or disposal that was appropriate for the physical waste type, that is, by treatability category. Waste treatment is intended to either (1) reduce waste volume; (2) increase the safety associated with handling, storing, or disposing of the waste; and/or (3) reduce the mobility of the waste following disposal.

Low-level waste can be a liquid, wet solid (e.g., sludge), or dry solid. Several assumptions were made to develop representative treatability categories from the many different LLW streams in the DOE waste management system.

It was assumed that all liquid LLW is treated at the site of generation. Residuals are then managed as solid LLW. It was also assumed that treated liquids that can be reused or discharged are managed in such a manner at the generation site. Liquid waste management practices include the following:

- General aqueous treatment to include suspended solids removal and dissolved solids removal (e.g., by filtration, ion exchange, and membrane technologies) with the residual wastes managed as solid LLW,
- Concentration (evaporation) with the concentrated wastes managed by immobilization,
- Immobilization by solidification or absorption, and
- Incineration (for organic liquid).

It was assumed that wet solid LLW is pretreated at the site of generation to remove excess free liquids prior to shipment for further treatment or disposal. Treatment of wet solid wastes will generate residual waste streams. It was assumed that any wet solid waste that can be reused or regenerated is managed in such a manner and is not considered further. Wet solid waste management practices include the following:

- Concentration (evaporation), and
- Conditioning for disposal by immobilization (vitrification or solidification).

Management of dry solid LLW is dependent upon the physical characteristics of the waste and the particular treatment that can be applied to the waste. The two principal LLW management pathways are minimal treatment and volume reduction treatment. Volume reduction consists of technologies that reduce the volume of waste prior to disposal. Minimal treatment is applied to those waste streams that are not amenable to volume reduction methods. Minimal treatment is assumed to always be done at the site that generates the LLW. Treatment of some dry solid wastes will generate residual waste streams. Dry solid waste management practices include the following:

- Volume reduction by incineration,
- Volume reduction by size reduction (e.g., shredding or crushing),
- Volume reduction by compaction,
- Minimal treatment by immobilization by solidification or vitrification, and
- Minimal treatment by packaging.

On the basis of the above discussion and the LLW management technologies identified in Section 3, 10 different LLW treatability categories were developed. Treatability categories for solid waste (both wet and dry) and the designated treatability identifying numbers are (1) combustible; (2) noncombustible, noncompactible; (3) noncombustible, compactible; (4) surface-contaminated bulk metal/equipment; (5) activated bulk metal/equipment; (6) sludge/resin; and (7) other (wastes that do not fit into the previous categories). Treatability categories for liquid wastes are (8) dilute/aqueous and (9) organic. The tenth LLW treatability category is identified simply as remote-handled, independent of its physical characteristics. These wastes are managed with a minimum of handling to reduce worker exposures. As considered in this report minimal treatment is applied to categories 2, 3, and 7.

2.1.2 Radiological Profiles

The 1992 IDB (DOE 1992c) also classifies LLW in the DOE waste management system according to radionuclide characteristics. Radiological characteristics are divided into six categories: (1) uranium/thorium — waste materials for which the principal hazard results from naturally occurring uranium and thorium isotopes; (2) fission product — waste materials contaminated with beta-gamma-emitting radionuclides that originate as a result of fission processes, primary examples are cesium-137 and strontium-90; (3) induced activity — waste materials contaminated with beta-gamma-emitting isotopes that are generated through neutron activation, of major concern is cobalt-60; (4) tritium — waste materials for which the principal hazard results from tritium; (5) alpha — waste material contaminated with low levels (<100 nCi/g) of transuranic isotopes, excluding alpha-emitting radionuclides listed under uranium/thorium; and (6) other — mixture or not defined (DOE 1992c). Table 2.1 lists the source terms for the activity categories. These source terms are assumed to be representative of the nuclides found in representative DOE LLW.

TABLE 2.1 Representative Low-Level Waste Radiological Category Source Term Distributions

Nuclide	% Activity	Nuclide	% Activity	Nuclide	% Activity
<i>Uranium/Thorium^a</i>		<i>Other^b</i>		<i>Induced Activity^c</i>	
Thallium (Tl)-208	0.0017	Hydrogen (H)-3	1.22	Chromium (Cr)-51	2.18
Lead (Pb)-212	0.0045	Carbon (C)-14	0.06	Manganese (Mn)-54	4.15
Bismuth (Bi)-212	0.0045	Manganese-54	6.76	Iron (Fe)-55	15.49
Polonium (Po)-212	0.0029	Cobalt (Co)-58	6.24	Cobalt (Co)-58	5.57
Po-216	0.0045	Co-60	18.03	Fe-59	0.14
Radium (Ra)-224	0.0045	Sr-90	8.48	Nickel (Ni)-59	0.20
Ra-228	0.0269	Y-90	8.48	Co-60	43.67
Actinium (Ac)-228	0.0269	Tc-99	0.12	Ni-63	28.43
Thorium (Th)-228	0.0045	Cesium (Cs)-134	13.98	Zirconium (Zr)-95	0.17
Th-231	0.0259	Cs-137	18.45	Total	100
Th-232	0.273	Barium (Ba)-137m	17.45		
Th-234	33.197	U-238	0.73		
Protactinium (Pa)-234m	33.197	Total	100		
Pa-234	0.0034				
Uranium (U)-235	0.0258				
U-238	33.197				
Total	100				
<i>Fission Product^d</i>		<i>Fission Product—Cont.</i>		<i>Alpha (<100 nCi/g)^e</i>	
H-3	0.020	Praseodymium (Pr)-144	5.490	Plutonium (Pu)-238	2.62
Co-60	0.095	Pr-144m	0.066	Pu-239	0.2
Ni-63	0.189	Promethium (Pm)-147	13.40	Pu-240	0.7
Strontium (Sr)-90	16.80	Samarium (Sm)-151	0.131	Pu-241	96.4
Yttrium (Y)-90	16.80	Europium (Eu)-152	0.002	Americium (Am)-241	0.004
Technetium (Tc)-99	0.003	Eu-154	0.343	Curium (Cm)-242	0.056
Ruthenium (Ru)-106	1.640	Eu-155	0.272	Cm-244	0.02
Rhodium (Rh)-106	1.640	Pu-238	0.413	Total	100
Antimony (Sb)-125	0.471	Pu-239	0.004		
Tellurium (Te)-125m	0.115	Pu-240	0.002	<i>Tritium</i>	
Cs-134	1.907	Pu-241	0.462		
Cs-137	17.60	Am-241	0.006	H-3	100
Ba-137m	16.66	Total	100		
Cerium (Ce)-144	5.490				

^a Based on the representative uranium/thorium nuclide distribution in DOE (1992c).

^b Based on the representative "other" distribution in DOE (1992c).

^c Based on the distribution of activation products in LLW disposed of in 1990 (DOE 1993a).

^d Based on the isotopic distribution for fission product waste at SRS, decayed for five years (Cook et al. 1987). Total adds to slightly more than 100% due to rounding.

^e Based on the representative alpha nuclide distribution in DOE (1992c).

2.2 LOW-LEVEL WASTE VOLUMES BY INSTALLATION: WASTE MANAGEMENT WASTES

Low-level waste generation is reported at about 30 sites in the DOE complex (DOE 1992c, DOE 1995, WMIS 1992). Many other DOE sites are or will be generating LLW as a result of ER or D&D activities. This report only concentrates on the LLW generated by waste management operations. Most LLW is not stored for extended periods or in large quantities but is instead sent to disposal.

Site-specific waste streams were identified in the WMIS data base (WMIS 1992). The quality of data in the WMIS is unknown, and the data presented are inconsistent across the sites reporting (see Table 2.2 and the discussion below). However, these data represent the best available on a complexwide basis and are considered sufficient for comparison of programmatic alternatives. Waste generation quantities and waste form descriptions provided in the WMIS were used to identify treatability categories for each waste stream at each site. The waste streams were then grouped by treatability category for each site. The WMIS also indicated the nuclides present in each waste stream.

Because the information in the WMIS represents a "snapshot" of waste generation on the basis of the data from a specific reporting period, the Integrated Data Base was used to establish the baseline site total waste generation rate and activity distribution. The information derived from the WMIS as described in the previous paragraph (i.e., wastes grouped into waste streams according to treatability category) was then scaled, using weighted averages, to produce site totals consistent with the data presented in the IDB. For those smaller sites where waste volumes were not shown in the IDB the applicable WMIS waste volumes were used.

Several assumptions concerning the physical characteristics and activity mix distributions of LLW were required to correlate the total volumes and activities for each LLW-generating site, as identified in the Integrated Data Base, with the representative treatability categories, as developed from the WMIS.

For some sites, the WMIS data were either unavailable or inconsistent (e.g., the WMIS indicated only mixed waste present at a site). In these cases, site-generated data were used and/or several assumptions were made to develop the inventory characterization. The sites where the total volume or activity used in the WM PEIS (Table 2.3) differs from the totals presented in the Integrated Data Base are identified and explained in Table 2.2.

The representative waste stream characterization for WM wastes that was used in the WM PEIS is summarized in Table 2.3. These data have an associated uncertainty because of the assumptions required to generate the necessary detail for the WM PEIS analysis and the inherent uncertainty in the available data from the WMIS and the Integrated Data Base. Generation rates are

TABLE 2.2 Site-Specific Differences in the Low-Level Waste Characterization Used in the WM PEIS from Data Presented in the Integrated Data Base and the WMIS

Site	Comments
SRS	Total volumes and activities are the same as in the Integrated Data Base. The WM PEIS inventory excludes SRS saltstone (waste treatability category 7). The saltstone values presented are based on averages for the projections from 1992 through 2030 as reported in the Integrated Data Base.
INEL	Site data used in the WM PEIS were developed by INEL (Litteer 1991) because these data identified waste streams at Argonne National Laboratory West (ANL-W) and the Naval Reactor Facility (NRF) separately. INEL data presented in Table 2.3 exclude ANL-W and NRF. ANL-W site data are also from Litteer (1991). For both INEL and ANL-W, liquid wastes reported in Litteer (1991) are included in the WM PEIS LLW inventory. Liquid wastes were not reported in the Integrated Data Base or WMIS.
ORR	Large changes in LLW activity reported in the 1995 Integrated Data Base (DOE 1995) necessitated revising the ORNL data. To maintain data consistency, the combined ORR sites (ORNL, U-25, Y-12, ORISE) were evaluated in the WM PEIS using the updated 1995 Integrated Data Base inventories.
Hanford	Total volumes and activities are the same as in the Integrated Data Base. The WM PEIS inventory also includes Hanford grouted waste assumed to be from the treatment of the double-shell tanks (waste treatability category 7). Grout values presented were based on calculated activities and volumes for one grout vault and assuming 4 grout campaigns (filled vaults) per year. Recent modifications to the Hanford Site waste management plans indicate that this waste will be treated by vitrification. Thus, waste volumes would be significantly reduced.
LANL	The WMIS indicated only mixed waste at the site. Because this is erroneous, the site was contacted directly, and staff provided a detailed listing of LLW for the site. These data were used rather than the Integrated Data Base or WMIS data.
Naval Reactor Sites	The data given in the Integrated Data Base combined the activities and volumes for the Knolls Atomic Power Laboratory (KAPL), the Bettis Atomic Power Laboratory (BAPL), and the NRF into one wastestream. Because this was not useful for transportation risk calculations (the sites are in different parts of the country), information was solicited directly from the Naval Reactor program. The data provided are the same as for the 1993 Integrated Data Base.
BNL, NTS, WVDP	The 1992 Integrated Data Base reported zero LLW volume generation for these sites. Therefore, the WM PEIS analysis used the values reported in the 1995 Integrated Data Base (DOE 1995).
Pantex	Data reported for Pantex inventory in the Waste Management Information System database (WMIS 1992) were erroneous. Waste volumes for this site were taken from the 1995 Integrated Data Base for use in the WM PEIS analysis.

TABLE 2.3 Site-Specific Low-Level Waste Characterization: Waste Management Wastes

Site ^a	Treatability Category ^b	Inventory ^c (m ³)	Generation ^d Rate (m ³ /yr)	Total Activity (Ci/yr)	Activity Concentration (Ci/m ³)	Activity Mix ^e
LLNL	1	1.25E+01	2.50E+00	2.60E+02	1.04E+02	H-3, FP, alpha, other
	2	5.51E+00	1.20E+00	1.30E+02	1.08E+02	H-3, FP, alpha, other
	3	2.11E+02	2.23E+01	2.34E+03	1.05E+02	H-3, FP, alpha, other
	4	7.15E+01	1.61E+01	1.69E+03	1.05E+02	H-3, FP, alpha, other
	6	4.28E+02	8.18E+01	8.58E+03	1.05E+02	H-3, FP, alpha, other
Total		7.29E+02	1.24E+02	1.30E+04		
RFETS	1	1.68E+03	1.31E+03	7.46E+00	5.69E-03	Alpha, U/Th
	2	3.46E+02	3.55E+02	2.02E+00	5.69E-03	Alpha, U/Th
	3	4.39E+01	7.42E-01	4.22E-03	5.69E-03	Alpha, U/Th
	4	2.74E+02	1.95E+02	1.11E+00	5.69E-03	Alpha, U/Th
	6	6.30E-01	6.76E+01	3.85E-01	5.69E-03	Alpha, U/Th
Total	9	1.26E+00	1.93E+00	1.10E-02	5.69E-03	Alpha, U/Th
INEL	1	1.43E+03	7.10E+02	7.00E+00	9.86E-03	IA, FP
	2	1.84E+02	9.42E+02	2.46E+03	2.61E+00	IA, FP
	3	4.79E+02	2.94E+02	5.70E-01	1.94E-03	IA, FP
	4	1.40E+03	3.71E+02	4.30E-01	1.16E-03	IA, FP
Total		3.49E+03	2.32E+03	2.47E+03		
Mound	1	7.28E+02	3.43E+02	6.06E+03	1.76E+01	H-3
	2	8.15E+02	1.25E+03	2.27E+00	1.81E-03	Alpha, H-3
	6	4.35E+01	2.49E+02	1.50E+00	6.01E-03	Alpha
Total		1.58E+03	1.84E+03	6.06E+03		
SNL	1	1.26E+00	0.00E+00	2.78E+01	2.21E+01	H-3, Co-60, Fe-55, U/Th
	2	4.00E+01	1.32E+01	7.51E+00	1.41E-01	H-3, U/Th
	3	1.13E+00	0.00E+00	1.71E+03	1.52E+03	H-3
	9	6.20E+00	7.14E-01	9.76E+03	1.41E+03	H-3
Total		4.86E+01	1.40E+01	1.15E+04		
ORNL ^{f,g}	1	1.12E+01	8.00E+01	5.04E+00	6.30E-02	Other
	2	1.77E+03	2.48E+02	1.80E+03	7.26E+00	FP
	3	2.50E+01	3.00E+00	3.60E-03	1.20E-03	FP, IA,
	6	3.70E+01	3.30E+01	1.00E+00	3.03E-02	U/Th, alpha
	7	1.55E+03	9.50E+02	3.62E+03	3.81E+00	Other
Total		3.39E+03	1.31E+03	5.43E+03		
SRS	1	1.10E+04	1.77E+02	1.58E+01	8.93E-02	U/Th, FP, IA (storage volume is 100% alpha)
	2	4.54E+01	1.76E+04	1.41E+04	8.01E-01	FP, IA, H-3, Other
	3	0.00E+00	4.62E+03	6.05E+01	1.31E-02	Other, FP
	4	0.00E+00	4.57E+02	3.04E+01	6.65E-02	Alpha, FP, U/Th
	6	0.00E+00	9.66E+02	1.27E-01	1.31E-04	H-3

TABLE 2.3 (Cont.)

Site ^a	Treatability Category ^b	Inventory ^c (m ³)	Generation ^d Rate (m ³ /yr)	Total Activity (Ci/yr)	Activity Concentration (Ci/m ³)	Activity Mix ^e
	7	0.00E+00	2.96E+04	1.40E+03	4.73E-02	Saltstone, average for 1992-2030 projections: H-3, Sr-90, Y-90, Tc-99, Ru-106, Sb-125, Cs-137, Ba-137m, Pm-147
	9	2.96E+01	0.00E+00	1.27E+02	4.29E+00	H-3
	10	0.00E+00	1.32E+03	6.52E+04	4.93E+01	FP, IA, H-3
Total		1.11E+04	5.48E+04	8.10E+04		
Hanford	1	0.00E+00	1.93E+00	3.11E+00	1.61E+00	FP, IA
	2	0.00E+00	4.57E+02	7.36E+02	1.61E+00	FP, IA
	3	0.00E+00	2.41E+03	3.88E+03	1.61E+00	FP, IA
	4	0.00E+00	1.49E+03	2.41E+03	1.61E+00	FP, IA
	5	0.00E+00	4.18E+01	6.88E+02	1.64E+01	IA
	6	0.00E+00	1.92E+01	3.10E+01	1.61E+00	FP, IA
	7	0.00E+00	2.12E+04	1.15E+07	5.42E+02	Grouted waste from double-shell tanks, assuming four grout vaults filled per year. ^h Cs-137, Ba-137m, Ru-106, Rh-106, Sr-90, and Y-90
	9	0.00E+00	7.05E-01	1.13E+00	1.61E+00	FP, IA
Total		0.00E+00	2.56E+04	1.15E+07		
NRF	5	0.00E+00	5.88E+02	5.31E+04	9.03E+01	IA
KAPL	2	0.00E+00	7.95E+01	1.15E-01	1.45E-03	IA
	5	0.00E+00	8.31E+02	2.60E+05	3.13E+02	IA
	7	0.00E+00	1.66E+01	8.94E-02	5.39E-03	Other, FP
Total		0.00E+00	9.27E+02	2.60E+05		
ANL-E	2	8.84E+02	2.90E+02	2.29E+02	7.90E-01	FP, IA, H3, other
ANL-W	1	0.00E+00	7.34E+01	7.66E-02	1.04E-03	IA
	2	0.00E+00	3.01E+01	8.23E+04	2.73E+03	IA
	3	0.00E+00	2.26E+01	1.06E-01	4.70E-03	IA, FP
	5	0.00E+00	1.03E+01	2.06E-01	2.00E-02	Cs-137, IA, FP
	8	0.00E+00	2.05E+03	8.41E-02	3.90E-05	H3
Total		0.00E+00	2.19E+03	8.23E+04		
LBL	1	7.40E+00	1.01E+01	2.11E+02	2.09E+01	Other
	2	8.60E+00	5.17E+00	4.64E+02	8.98E+01	H-3, other
	3	2.12E+01	2.44E+01	5.10E+02	2.09E+01	Other
	5	1.26E+01	1.73E+01	1.40E+00	8.09E-02	IA
	8	3.30E+00	4.80E+00	4.19E+02	8.73E+01	H-3
Total		5.31E+01	6.20E+01	1.60E+03		

TABLE 2.3 (Cont.)

Site ^a	Treatability Category ^b	Inventory ^c (m ³)	Generation ^d Rate (m ³ /yr)	Total Activity (Ci/yr)	Activity Concentration (Ci/m ³)	Activity Mix ^e
K-25 ^g	1	2.30E+03	1.85E+03	1.85E+00	1.00E-03	U/Th
	2	3.50E+03	1.49E+03	1.49E+00	1.00E-03	U/Th
	3	8.70E+01	2.90E+01	2.80E-02	9.60E-04	U/Th
	4	5.84E+03	4.19E+03	4.19E+00	1.00E-03	U/Th
	6	1.00E+00		1.00E-03	1.00E-03	U/Th
	7		5.83E+02	5.83E-01	1.00E-03	U/Th
	8		4.44E+02	4.44E-01	1.00E-03	U/Th
Total		1.172E+04	8.58E+03	8.73E+00		
PORTS	1	1.32E+03	5.50E+02	1.15E-02	2.09E-05	U/Th
	4	0.00E+00	4.19E+03	8.75E-02	2.09E-05	U/Th
	6	5.37E+01	1.91E+01	4.00E-04	2.09E-05	U/Th
	9	1.09E+02	3.35E+01	7.00E-04	2.09E-05	U/Th
Total		1.48E+03	4.79E+03	1.00E-01		
Pinellas	3	1.60E+01	6.30E+01	9.83E+03	1.56E+02	H-3
PGDP	1	1.76E+03	1.65E+02	7.40E-02	4.48E-04	U/Th, Tc-99, Np-237, Pu-239
	2	2.35E+03	1.70E+03	7.63E-01	4.48E-04	U/Th, Tc-99, Np-237, Pu-239
	3	7.90E+02	2.50E+02	1.12E-01	4.48E-04	U/Th, Tc-99, Np-237, Pu-239
	4	8.99E+01	4.24E+01	1.90E-02	4.48E-04	U/Th, Tc-99, Np-237, Pu-239
	6	2.07E+02	6.72E-01	3.01E-04	4.48E-04	U/Th, Tc-99, Np-237, Pu-239
	7	2.34E+00	0.00E+00	0.00E+00	0.00E+00	Uranium metal — in storage only
	8	5.48E+01	5.14E+01	2.30E-02	4.48E-04	U/Th, Tc-99, Np-237, Pu-239
	9	1.78E+01	1.78E+01	8.00E-03	4.48E-04	U/Th, Tc-99, Np-237, Pu-239
Total		5.27E+03	2.23E+03	9.99E-01		
LANL	1	0.00E+00	2.81E+03	6.61E+02	2.35E-01	U/Th, FP, alpha
	2	0.00E+00	1.78E+03	3.39E+02	1.90E-01	FP, IA
	3	0.00E+00	2.36E+03	3.84E+05	1.63E+02	FP, H-3
	5	0.00E+00	5.36E+02	5.57E+02	1.04E+00	IA
Total		0.00E+00	7.48E+03	3.85E+05		
Ames	1	0.00E+00	3.33E-01	1.66E-03	5.00E-03	U/Th, alpha
	2	2.60E+01	3.66E+00	1.83E-02	5.00E-03	U/Th, alpha
Total		2.60E+01	4.00E+00	2.00E-02		
FNAL	2	1.18E+00	1.12E+00	2.02E-02	1.80E-02	IA, H-3, U/Th
	3	3.32E+01	1.24E+01	2.19E-01	1.77E-02	IA, H-3, U/Th
	5	0.00E+00	5.08E+01	7.70E-01	1.52E-02	IA
	6	3.06E+00	2.81E+00	4.91E-02	1.75E-02	IA, H-3, U/Th
	8	3.70E+00	1.48E+00	1.60E-02	1.08E-02	H-3
	9	3.50E+00	3.22E+00	3.50E-02	1.09E-02	H-3
Total		4.47E+01	7.20E+01	1.11E+00		

TABLE 2.3 (Cont.)

Site ^a	Treatability Category ^b	Inventory ^c (m ³)	Generation ^d Rate (m ³ /yr)	Total Activity (Ci/yr)	Activity Concentration (Ci/m ³)	Activity Mix ^e
KCP	2	3.37E+00	1.00E+00	1.10E-01	1.10E-01	Other, H-3
ITRI	2	1.70E+02	1.70E+01	6.66E+01	3.92E+00	Other
	3	1.00E+02	3.40E+01	1.33E+02	3.92E+00	Other
Total		2.70E+02	5.10E+01	2.00E+02		
Pantex ^g	2	2.07E+02	1.22E+02	9.32E-04	7.64E-06	H-3, U/Th
	4	1.87E+00	0.00E+00	5.00E-01	2.67E-01	H-3, U/Th
	8	0.00E+00	3.15E+01	1.97E+00	6.25E-02	H-3, U/Th
Total		2.09E+02	1.59E+02	2.48E+00		
PPPL	2	2.00E+00	1.05E-01	1.09E-02	1.04E-01	IA, H-3
	3	0.00E+00	1.05E+01	9.60E-02	9.12E-03	H-3
	7	1.00E-01	5.26E-02	1.00E-02	1.90E-01	Sealed sources
	9	0.00E+00	3.16E-01	2.90E-03	9.18E-03	H-3
Total		2.10E+00	1.10E+01	1.19E-01		
RMI	1	7.87E+01	7.47E+01	3.09E-04	4.16E-06	U/Th
	2	2.28E+03	2.16E+03	8.99E-03	4.16E-06	U/Th
	3	2.38E+01	2.26E+01	9.37E-05	4.16E-06	U/Th
	6	1.18E+02	1.12E+02	4.65E-04	4.16E-06	U/Th
	9	3.49E+01	3.31E+01	1.37E-04	4.16E-06	U/Th
Total		2.54E+03	2.41E+03	1.00E-02		
SNL-NM	2	3.60E+02	3.60E+01	2.01E+00	5.58E-02	H-3, alpha
	4	1.80E+00	1.79E-01	1.00E-01	5.58E-01	U/Th
	5	4.80E+01	4.79E+00	1.00E-02	2.09E-03	IA
Total		4.10E+02	4.10E+01	2.12E+00		
SLAC	2	2.20E+03	1.39E+01	9.98E-03	7.14E-04	IA
	6	4.20E+00	2.66E-02	1.90E-05	7.14E-04	IA
	9	1.20E-01	7.62E-04	5.44E-07	7.14E-04	IA
Total		2.20E+03	1.40E+01	1.00E-02		
ORISE ^g	6	0.00E+00	1.20E+01	5.94E-04	4.95E-05	U/Th, H-3, other
Total		0.00E+00	1.20E+01	5.94E-04		
Y-12 ^g	1	3.43E+02	9.12E+02	2.74E-01	3.00E-04	U/Th
	2	9.10E+01	1.09E+03	3.26E-01	3.00E-04	U/Th
	3	1.00E+00	6.70E+01	2.01E-02	3.00E-04	U/Th
	4	2.01E+02	8.04E+02	2.41E-01	3.00E-04	U/Th
	7	1.89E+02	2.61E+02	2.83E-02	1.08E-04	U/Th
	8		1.94E+03	5.82E-01	3.00E-04	U/Th
Total		8.25E+02	5.07E+03	1.42E+00		
BAPL	2	0.00E+00	1.81E+02	6.41E+00	3.54E-02	FP, U/Th
	5	0.00E+00	4.01E+02	1.09E+05	2.72E+02	IA
Total		0.00E+00	5.82E+02	1.09E+05		

TABLE 2.3 (Cont.)

Site ^a	Treatability Category ^b	Inventory ^c (m ³)	Generation ^d Rate (m ³ /yr)	Total Activity (Ci/yr)	Activity Concentration (Ci/m ³)	Activity Mix ^e
BNL ^g	1	5.70E-01	7.60E+00	6.44E-02	8.47E-03	FP, IA, H3, other
	2	6.50E+01	1.05E+01	7.44E-04	7.09E-05	FP, IA, H3, other
	3	1.73E+02	3.63E+01	2.16E-01	5.95E-03	FP, IA, H3, other
	4	9.89E+01	9.14E+01	5.74E+02	6.28E+00	FP, IA, H3, other
	5	9.80E+00	5.10E+01	1.21E-01	2.37E-03	FP, IA, H3, other
	6	1.80E-01	3.00E-01	7.87E-02	2.62E-01	FP, IA, H3, other
	7	2.09E+02	5.64E+01	4.55E-03	8.07E-05	FP, IA, H3, other
Total		5.56E+02	2.54E+02	5.74E+02	2.27E+00	
NTS ^g	1	0.00E+00	2.44E+00	2.08E-04	8.52E-05	FP
	2	6.66E+01	0.00E+00	2.20E-02	3.30E-04	FP
	3	2.83E+00	6.84E+01	9.00E-02	1.32E-03	FP
	4	2.00E+02	0.00E+00	2.00E-03	1.00E-05	FP
Total		2.69E+02	7.08E+01	1.14E-01	1.61E-03	
WVDP ^g	1	1.00E+00	4.10E+01	1.39E+01	3.40E-01	FP
	2	0.00E+00	5.54E+02	1.88E+02	3.40E-01	FP
	3	0.00E+00	7.10E+01	2.41E+01	3.40E-01	FP
	4	1.52E+03	1.10E+01	3.74E+00	3.40E-01	FP
	6	5.76E+03	6.87E+02	2.34E+02	3.40E-01	FP
	7	6.99E+03	9.00E+00	3.06E+00	3.40E-01	FP
	9	0.00E+00	2.10E+01	9.00E+00	4.29E-01	FP
Total		1.43E+04	1.39E+03	4.76E+02	3.41E-01	

^a Abbreviations: FNAL = Fermi National Accelerator Laboratory; KCP = Kansas City Plant; ITRI = Inhalation Toxicology Research Institute; K-25 = K-25 Plant (part of Oak Ridge Reservation); LBL = Lawrence Berkeley Laboratory; ORISE = Oak Ridge Institute for Science and Education; ORNL = Oak Ridge National Laboratory (part of Oak Ridge Reservation); PGDP = Paducah Gaseous Diffusion Plant; PORTS = Portsmouth Gaseous Diffusion Plant; RFETS = Rocky Flats Environmental Technology Site; RMI = Reactive Metals, Inc.; SLAC = Stanford Linear Accelerator Center; SNL-NM = Sandia National Laboratories - New Mexico; SNL-CA = Sandia National Laboratories - California; Y-12 = Y-12 Plant (part of Oak Ridge Reservation).

^b Treatability categories are defined as follows: (1) solid, combustible; (2) solid, noncombustible, noncompactible; (3) solid, noncombustible, compactible; (4) solid, metal, surface-contaminated; (5) solid, metal, activated; (6) solid, sludge/resin; (7) solid, other; (8) liquid, aqueous; (9) liquid, organic; and (10) solid, remote-handled.

^c Cumulative inventory in storage as of 1992 based on the WMIS (WMIS 1992).

^d Unless noted, generation rate is derived from IDB (DOE 1992c) and WMIS.

^e Activity mix categories are defined as follows: IA = induced activity, FP = fission product, H-3 = tritium, U/Th = uranium/thorium, and alpha = alpha <100 nCi/g. Specific nuclides are as noted, a detailed source term is presented in Appendix A.

^f Approximately 950 m³ of remote-handled liquid LLW is in storage at ORNL. The impacts of handling this waste are bounded by the remote-handled LLMW analysis and are not evaluated separately as part of the LLW analysis.

^g These sites (BNL, NTS, ORISE, ORNL, K-25, Y-12, WVDP, and Pantex) use data reported in the 1995 Integrated Data Base (DOE 1995).

^h The plans for Hanford tank wastes have recently been changed to assume that this waste is vitrified. It is also probable that this waste will be categorized as mixed LLW. Estimates for grout waste are conservative.

presented for each site in terms of treatability categories for one year. These values are assumed to represent a baseline annual LLW-WM generation rate. Wastes in storage (inventory) are assumed to be the cumulative volume of waste in storage as of 1992 on the basis of the WMIS (1992). Activity concentration indicates the average curies per cubic meter for the treatability category at that site, and the activity mix identifies the radiological characterization. A detail listing of the radiological source terms used in the WM PEIS is provided in Appendix A.

3 REPRESENTATIVE LOW-LEVEL WASTE MANAGEMENT TECHNOLOGIES

This section identifies and describes LLW management technologies. Technologies are described as a function of input waste feed in terms of emissions, residual wastes, and waste volume changes. The technology descriptions provide the basis for developing estimates of waste loads, emissions, and resource requirements for a spectrum of LLW management technologies that are applied to the LLW inventories (Section 2) for the alternative analysis in the WM PEIS. This methodology is used because of the generic or representative nature of the analysis. It is appropriate for deciding among alternatives for a programmatic analysis, which does not require as detailed information as would be utilized in an analysis for a specific site or waste management facility. The level of complexity of the evaluation is also consistent with the level of detail in the data that can be generalized for the entire DOE LLW management system. More detailed calculations and procedures would be appropriate for analyzing the potential impacts of a specific facility where a significant level of detail and specific facility designs would be available. However, for an analysis that supports determination of the relative costs and benefits of programmatic alternative actions, the methodology described here was considered appropriate for the WM PEIS.

3.1 OVERVIEW

Several technologies are used for the management of LLW. Selection of a particular technology depends primarily on the physical characteristics of the waste. Treatment technologies for LLW are primarily used for volume reduction or for rendering the waste more suitable for disposal. Each of the twelve representative technologies discussed below is referred to in this section as a LLW management module. These modules are based on existing representative facilities, where available, and can be assembled in various ways to create different TSD scenarios for the different alternatives.

The technologies evaluated in the WM PEIS were selected from the many possible technologies on the basis of current usage and acceptability. Throughout the DOE complex, LLW treatment technologies are used for volume reduction of solid LLW and removal and solidification of radionuclides from liquid LLW. Current treatment technologies used in the DOE complex include incineration, vitrification, compaction, supercompaction, evaporation, size reduction (e.g., shredding), and packaging. Disposal technologies include shallow land burial, belowground vaults, tumulus (earth mounded aboveground vaults), and greater confinement disposal (enhanced containment barriers with or without disposal at greater depths).

Ten representative technologies, with associated process options, for the TSD of LLW were developed for the WM PEIS (1) incineration, (2) solidification, (3) vitrification, (4) compaction and supercompaction, (5) size reduction, (6) evaporation, (7) general aqueous treatment, (8) packaging,

(9) interim storage, and (10) disposal. These technologies are in general use for LLW within DOE and have been described in three reports that address integrated LLW management technologies (Darnell et al. 1988; Darnell 1990; and Feizollahi and Shropshire 1992).

Figure 3.1 identifies the waste treatment technologies and flow paths for the representative physical waste types identified in Section 2. Wastes identified as "other" in the figure are those that have physical, chemical, or radiological properties incompatible with standard technologies. Treatment of these wastes is outside the scope of the generic processes defined here. "Other" waste is handled on a site-by-site, case-by-case basis. The final waste form after treatment, as identified in Figure 3.1, is then sent to disposal. Figure 3.1 was developed on the basis of the following assumptions: (1) LLW is sorted into the various treatability groups at the generation site; (2) solid "other" LLW is packaged and disposed of and liquid "other" LLW is stabilized as required for disposal according to disposal site waste acceptance criteria; (3) organic liquid LLW (e.g., used oil) is incinerated (this category excludes organic liquid wastes classified as mixed waste); (4) interim storage of LLW can occur at any point within the waste management process, either before or after

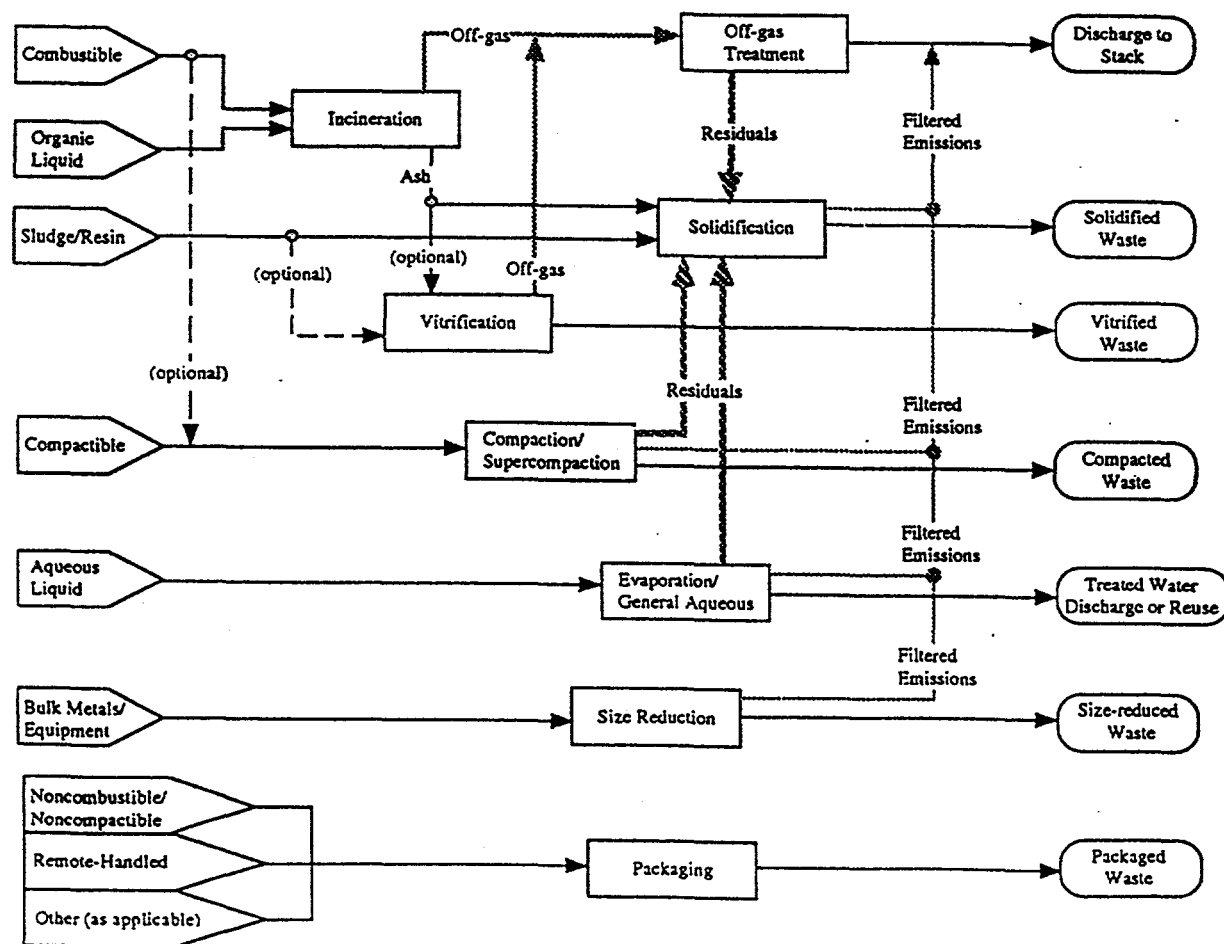


FIGURE 3.1 Low-Level Waste Management Technologies and Flow Paths

treatment while waiting for available disposal capacity; (5) dilute aqueous liquid LLW is assumed to be treated to generate a "clean" liquid that can be released or reused, and the treatment residual solids are managed as solid LLW; and (6) each treatment module includes or assumes all necessary pretreatment (e.g., incineration includes shredding of solid input). Each waste management module has associated emissions and residual wastes that are described in detail in Section 3.2.

3.2 WASTE MANAGEMENT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT TECHNOLOGIES

Each of the LLW management modules used in the WM PEIS is described in Sections 3.2.1 through 3.2.10. Waste volume reduction (or increase) and routine operation emissions for a generic input waste stream in terms of the input waste stream properties are identified. Appropriate emissions control devices are assumed for all airborne emissions. The representative waste streams developed in Section 2 and the inventories developed for each waste management alternative can then be applied to each module, as appropriate, to generate expected waste volumes, emissions, and resource requirements for a given WM PEIS alternative. This is discussed further in Section 5.

3.2.1 Incineration

Incineration is the use of high temperatures to burn and subsequently reduce the volume of a variety of wastes. Incineration of LLW is primarily a volume-reduction technique, although it has the secondary benefit of destroying organic contaminants that may be present in the waste (as opposed to incineration of mixed waste for which incineration is used primarily for destruction of organic contaminants). Incineration yields a product (i.e., ash) that has a higher radionuclide concentration than the input feed waste.

The primary incentives for using incineration are to convert wastes to an inert chemical form and to reduce the volume of the wastes that must be stored or disposed of. The goal of incineration design is to maximize volume reduction and desirable reactions that ultimately lead to innocuous end products, while minimizing undesirable reactions that result in acid gases, hazardous gases, or materials detrimental to the atmosphere (Magleby 1988). Over the years, incineration has become a means of treating or disposing of various types of waste materials. This technology is applicable to wastes other than LLW and has been used for municipal solid waste, institutional waste, industrial waste, and hazardous waste. Major differences in applying incinerator technology to LLW are the need for radiation shielding and high efficiency particulate air (HEPA) filters, as well as special disposal methods for the radioactive ash (Magleby 1988).

Incinerators are available in a variety of designs, configurations, and sizes, ranging from single-chambered systems to complex multichambered units. Incinerators are classified by various

characteristics such as shape (e.g., multichamber), amount of air used (e.g., controlled-air), and moving parts (e.g., rotary-kiln). Major incinerator technologies are rotary-kiln, excess-air, controlled-air, and fluidized-bed (Magleby 1988).

The most common and widely used of these methods are excess-air and controlled-air incineration. These methods result in the production of ash that must be solidified and/or packaged before transportation and disposal and an off-gas stream that must be scrubbed, filtered, and monitored before being released to the atmosphere (Long 1990). While incineration results in a high level of volume reduction, the overall reduction can be considerably lower when the liquid residuals, filters, and maintenance and decommissioning wastes are taken into account.

The off-gas from incineration contains carbon monoxide (CO), sulfur dioxide (SO₂), and nitrogen oxides (NO_x). Engineered emission control systems can be used to meet existing emissions limits. To achieve compliance with exhaust gas regulations, acid gases are typically removed by scrubbing. Maintaining proper temperature, residence time, and turbulence in the incinerator minimizes production of CO and NO_x (Magleby 1988). Radioactivity is released directly in off-gas as volatilized radionuclides (iodine, ruthenium, and cesium) or radioactive gases (carbon dioxide [CO₂], water [H₂O], and SO₂ formed with carbon-14, tritium, and sulfur-35 [C-14, H-3, and S-35], respectively). Radioactivity is also released indirectly in combination with particulates (Long 1990). Particulates are removed by off-gas scrubbing and filtering technologies. Major incinerator and off-gas system design considerations are construction materials, capacity requirements, radioactivity concentration, chloride effects, sulfur and nitrogen oxide effects, ash handling, and process safety (Trigilio 1981).

The representative LLW incineration facility treatment module is described in Figure 3.2 and Table 3.1. Such a facility is intended for treatment of combustible solid waste, organic liquid waste, and organic sludge. The ash content of the waste should be less than 15% of the input waste by weight. Waste is fed to the incinerator after input waste preparation (shredding, as required). All combustible materials are destroyed, while inert materials become ash. The incineration facility produces four residual waste streams: bottom ash, fly ash, liquid, and off-gas. The incinerator off-gas treatment unit is designed to reduce emissions of particulates, SO₂, CO, and NO_x to allowable levels. Treated gases are released to the atmosphere. Liquid waste from off-gas treatment is processed through a treatment unit where dissolved and suspended solids are removed. The treated wastewater is recycled to the incineration off-gas treatment unit and any resultant sludge or other wet solids are solidified (Feizollahi and Shropshire 1992).

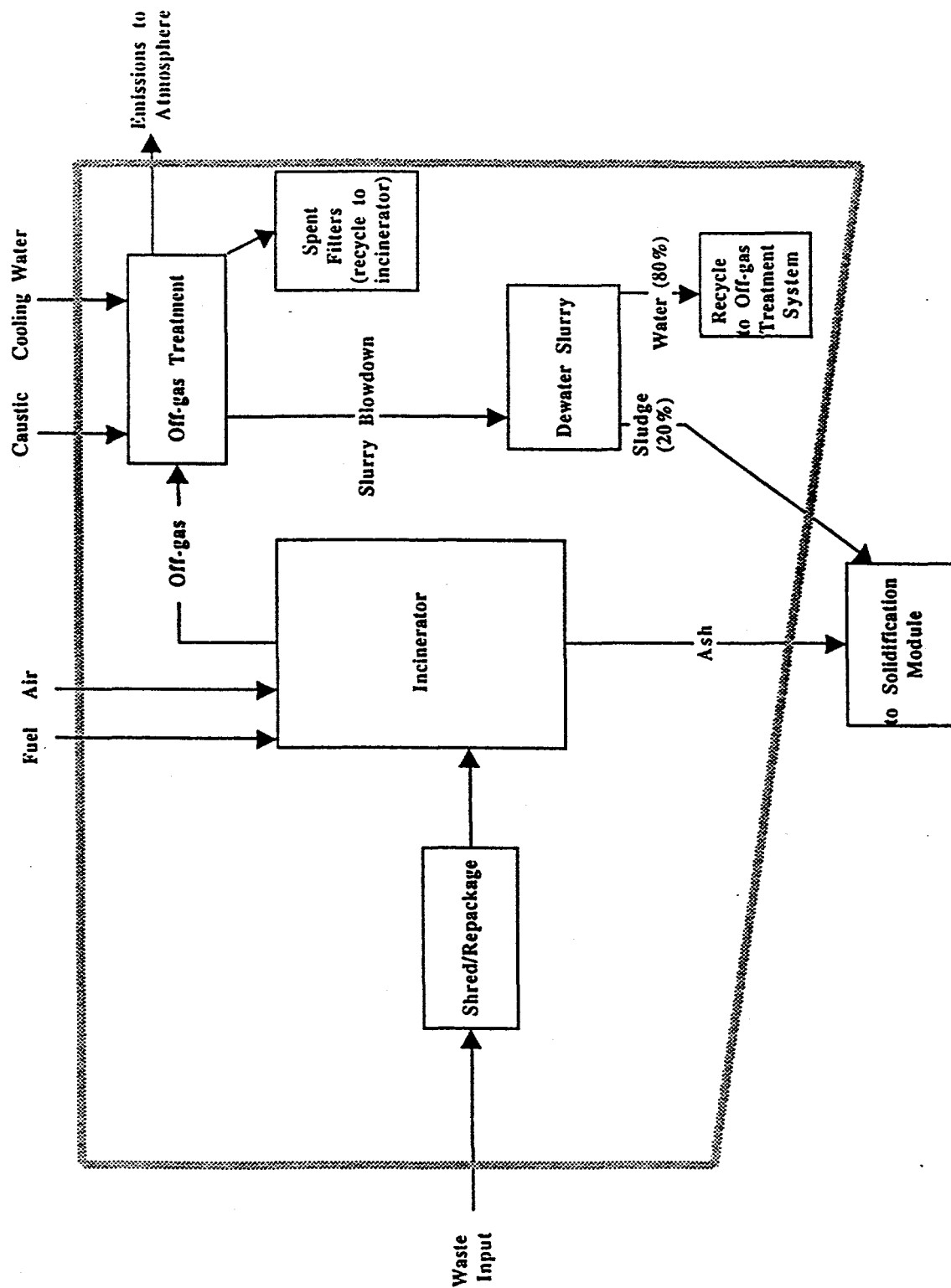


FIGURE 3.2 Incineration Flow Sheet

TABLE 3.1 Incineration Parameters

Parameter	Quantity	Comments or Assumptions	Reference
Air emissions: output mass as function of input mass feed rate	10.2 kg/kg	NA ^a	Feizollahi and Shropshire (1992)
Air emissions: output activity as function of input activity (Ci_{out}/Ci_{in})	0.983 for tritium ~1.0 for C-14 2.8E-5 all others	Based on estimated Ci/yr in process feed and Ci/yr emitted for both LLW and LLMW incineration at the SRS Consolidated Incinerator Facility (CIF).	DOE (1992a)
Air emissions: nonradioactive	SO _x : 0.15 t/yr CO: 0.02 t/yr NO _x : 24.8 t/yr PM ₁₀ : 11.2 t/yr	Based on CIF.	DOE (1992a)
Liquid residuals: output mass as function of input mass (kg/kg)	0.248	Assumes a liquid residual density of 1,900 kg/m ³ and is based on the mass of solids in the off-gas lime-water slurry. Liquid residuals are approximately 20% solids (Klingler 1983).	Adapted from Feizollahi and Shropshire (1992)
Liquid residuals: output activity as function of input activity (Ci_{out}/Ci_{in})	1.0E-3	NA	DOE (1979)
Solid residuals: output volume as function of input volume	None	Spent filters are assumed to be recycled to the incinerator. If not recycled, the number of filters depends on the off-gas system design; each filter is about 0.15 m ³ .	NA
Solid residuals: output activity as function of input activity	None	Spent filters are assumed to be recycled to the incinerator. If not recycled, the activity is assumed to be about 1.0E-6 times the activity of the input waste feed. This is based on the "combustible and compactible" residual waste generated from incineration as noted in the stated reference.	DOE (1979)
Treated product (ash) bulk density	0.3 to 0.9 g/cm ³	The ash product is always solidified prior to disposal, thus changing the density.	Treat et al. (1983); Westsik (1984)

TABLE 3.1 (Cont.)

Parameter	Quantity	Comments or Assumptions	Reference
Treated product leach rate/leach characteristics	See solidification module	Ash not disposed of unless treated by solidification due to the high leachability of the ash product. Leachability is therefore that of solidified waste.	NA
Mass output: kg of ash/kg processed waste	0.118	Mass of final waste product is different because ash undergoes further treatment by solidification prior to disposal.	Feizollahi and Shropshire (1992)
Volume output: m ³ of ash/m ³ of processed waste	0.025	Volume reduction factor taken to be 40. Greater volume reduction factors can be achieved with significant waste sorting prior to incinerator feed. Volume reduction does not include solidification of ash or generation of residual wastes. Ash waste goes to solidification module.	Several references report varying volume reduction factors. Trigilio (1981); U.S. Nuclear Regulatory Commission (NRC) (1981, Vol. 3), Bechtel, (1982), Long (1990); Feizollahi and Shropshire (1992)
Activity output: activity (Ci) in ash/activity (Ci) in processed waste	≈ 1	Unit activity will increase due to volume decrease. A small fraction of activity goes to the off-gas and the liquid residual waste stream.	NA

^a NA = not applicable.

3.2.2 Solidification

The process whereby LLW is converted to a single solid mass is referred to as solidification. Prior to solidification, the waste can be in a variety of forms (e.g., liquid, slurry, sludge, or dry solid particulate). Solidification is accomplished by mixing the waste with a solidification agent (reagents). A monolithic solid is formed by reaction of the solidification reagent(s) with the waste or by encapsulation of the wet waste or individual particles of the dry waste (Sargent & Lundy 1983).

A solidification reagent is any material that is added to the waste in any form for the purpose of converting it into a solid. Cement was one of the first LLW solidification agents and is still a commonly used solidification agent for stabilizing radioactive wastes (Magleby 1988). It was one of the first materials used for LLW solidification because of its long history of documented performance. In early LLW applications, cement was used only to solidify liquids or to provide shielding for solid waste. Vendors then developed additives to adjust the setting characteristics of

cement, thus allowing it to be used with dispersible solids and some waste streams. The additives also improved waste loading efficiency (Magleby 1988). Other solidification materials include bitumen and extruded polymer. Cement-based solidification is described here as a representative solidification method.

Cement solidifies waste by both chemical reaction (hydration) and physical encapsulation of the waste. It is the hydration reaction that causes cement to harden into a free standing monolith. As cement cures, free water in the cement mixture is chemically bound until essentially all the water is incorporated into the hardened matrix. Three general types of cement can be used to solidify LLW: Portland, gypsum, and masonry (Magleby 1998).

Most LLW solidification is accomplished by using Portland cement (MK-Ferguson 1992). Portland cement absorbs significant amounts of water during hydration reactions, thus minimizing the quantity of drainable water in a solidified mass. Siliceous compounds, including fly ash, blast furnace slag, soluble sodium or potassium silicates, and proprietary agents are commonly used in combination with Portland cement. A mixture of silicates and cement can be used to stabilize a wide range of materials, including metals, oils, and solvents. Cement alone is generally not effective in immobilizing organic compounds. Solidification formulations are determined by treatability testing for specific waste streams. The cementitious reactions that occur during cement-based solidification result in a significant loss of permeability. Contaminant mobility is also attenuated as a result of adsorption onto hydroxide precipitates, precipitation in the form of relatively insoluble hydroxide compounds, and/or encapsulation in the cementitious mineral structure (MK-Ferguson 1992).

The representative cement-based solidification module is described in Figure 3.3 and Table 3.2. The primary purpose of this facility is the solidification of noncombustible solids and inorganic liquid wastes and sludge that arrive directly from storage facilities or generators. The facility receives liquid waste that is concentrated and fed to the solidification unit. Solid waste is shredded or crushed, as required, prior to being fed to the solidification unit. The solidification unit can solidify either liquid or solid waste, or a combination of the two. No solid or liquid residual wastes are generated by this process.

3.2.3 Vitrification

Vitrification is the process of converting materials into a glass or glassy substance through a thermal process. Vitrification destroys organic contaminants via pyrolysis or combustion. Vitrification also immobilizes inorganics by incorporating them into the glass structure or by encapsulating them in the product glass. Vitrification is increasingly being considered for various wastes (U.S. Environmental Protection Agency [EPA] 1992). Vitrification is attractive because of the potential long-term durability of the product and the flexibility of the process for treating a wide variety of waste streams and contaminants. Vitrification technology development has been primarily

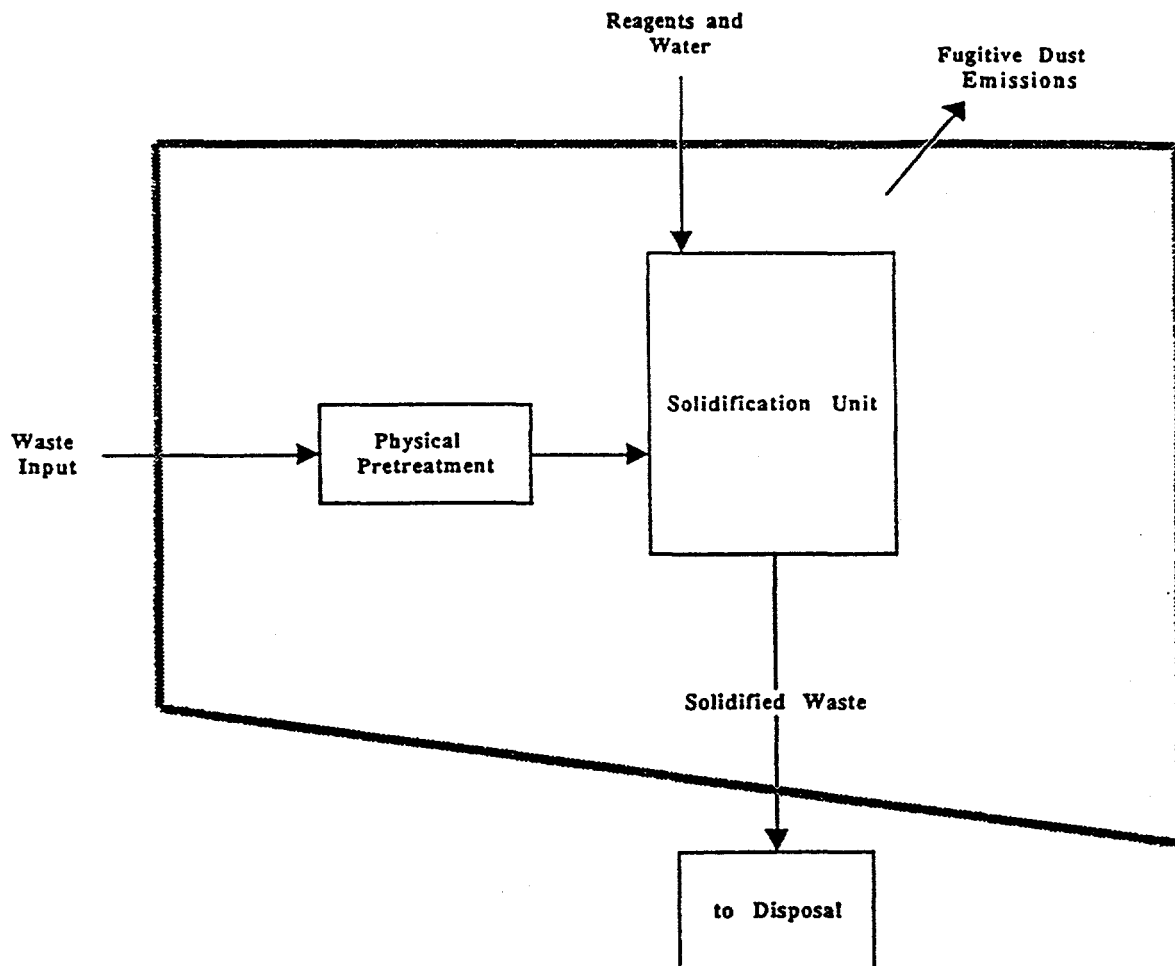


FIGURE 3.3 Cement-Based Solidification Flow Sheet

oriented toward immobilization of HLW. However, this technology is flexible since HLW has such a wide variety of properties. Thus, vitrification could be applied to all radioactive wastes (Pacific Northwest Laboratory [PNL] 1983).

Glasses are nonstoichiometric materials; that is, their chemical constituents do not exist in a fixed ratio as they do in crystals (PNL 1983). This material property is an advantage when glasses are used to immobilize wastes of indefinite and variable chemical compositions. The structure of glass permits the individual atoms of radioactive waste to become chemically linked to the glass structure. The waste is not just encapsulated in the glass, each waste atom is separately bound in the glass structure by a chemical bond (some contaminants will not bond, however). Glass formulation is an empirical process because of the nonstoichiometric nature of glass. Radioactive waste glasses from vitrification are formulated by combining a mixture of glass-forming additives with the waste. Additives are selected on the basis of the specific composition of the waste to be vitrified and the properties desired in the vitrified waste (PNL 1983).

TABLE 3.2 Cement-Based Solidification Parameters

Parameter	Quantity	Comments or Assumptions	Reference
Air emissions: volume or mass as function of input	Total volume: 106 m ³ /m ³ of waste input Particulate load: 1.5E-8 kg/kg input	Volume from Hanford grout treatment facility (20.1 m ³ /min operating at 190 L/min of waste input). Particulate load from particulate emission for cement manufacture plants with a control efficiency of 99.97%.	Crummel et al. (1991); DOE (1992b)
Air emissions: output activity as function of input activity (C _{i out} /C _{i in})	H-3: 1.5E-2 All others: 6.8E-14	Derived for Hanford grout treatment facility.	Adapted from Hendrickson (1991)
Liquid residuals	None	NA ^a	NA
Solid residuals	None	NA	NA
Solidified product density	1,794 kg/m ³	NA	Feizollahi and Shropshire (1992)
Mass output: kg solidified waste/kg waste input	2.96	NA	Feizollahi and Shropshire (1992)
Volume output: m ³ solidified waste/m ³ waste input	1.3	Volume increase of about 30%. Actual volume increase factor depends on waste to cement ratio and site-specific treatability testing.	Magleby (1988)
Activity output: C _i in solidified waste/C _i in waste input	1	No change in activity. Unit activity will decrease due to volume increase.	NA
Treated product leach characteristics (leachability index) ^b	H-3: 7.4-9.0 C-14: 12.9-14.2 Mn-54: 11.9-16.6 Fe-55: 10.0-17.2 Co-60: 9.2-16.9 Sr-90: 7-14 Tc-99: 8.3-14.3 Cs-137: 6-11.1 Cs-134: 8.2-10.2 Pu-241: 6.9-12.9 Co-58: 8.2-11.9 Ni-63: 8.4-14.6 Zn-65: 10.2-13.7 Sb-125: 10.4-11.2 Nitrate: 7.6-10.2	Leach characteristics depend on the nuclide, waste stream, and cement mixture. A high degree of variability is possible. Leaching also depends on the leachant. The data at left are combined from the several references listed at right.	Westsik (1984); Mitchell et al. (1989); Langton (1990); Cowgill (1991); Del Cul et al. (1991); McIsaac and Akers (1991); Serne et al. (1992); Boomer (1992); McIsaac et al. (1992); Lomenick (1992)

^a NA = not applicable.^b The leachability index is the negative logarithm of the effective diffusivity of a contaminant.

This technology is commercially available and is useable for both incineration and vitrification of combustible and noncombustible wastes. Both solid and liquid wastes can be accommodated. Waste is charged onto a pool of molten glass (created from crushed nonradioactive waste glass) in a refractory-lined electrically heated furnace. Glass formers are usually premixed with the waste before being fed to the melter. Heat from the molten glass will evaporate liquids, decompose chemicals, combust organics, and melt the waste materials. As the waste melts, gases are generated by liquid evaporation and waste feed decomposition. The steam, gases, and entrained particulates are routed to an off-gas treatment system where particulates and volatiles are removed. The waste glass product is then drained into a receiving container (PNL 1983).

Chlorides in the waste feed up to about 2% would be absorbed into the glass, higher percentages would be carried in the off-gas (International Atomic Energy Agency [IAEA] 1989). Metals are not readily vitrified unless they can be readily oxidized, for example, in small pieces. The oxides will dissolve in the melt; metals will form a separate molten phase. Small pieces of metal would not pose a problem because they would become encased in the glass. Larger pieces of metal can short out electrically heated melters that melt the waste by passing an electric current through it. Sulfates will evaporate and will be captured in scrubber solutions that must then be solidified. Thus, there is essentially no volume reduction for sulfate wastes (Sargent & Lundy 1980).

The representative vitrification facility module is described in Figure 3.4 and Table 3.3. The vitrification facility can process noncombustible wastes such as inorganic sludge, ash, soil, brick, rock, concrete, oil, glassware, rubber, plastics, ion-exchange resins, nonmetallic filter elements, and other similar material. The facility can process solid waste of various shapes and forms. Wastes are presized by shredding or crushing as required. Incoming waste can contain up to 10% combustibles (Feizollahi and Shropshire 1992). Predrying of wet sludge feed is required. The off-gas treatment system will reduce emissions of particulates, SO_2 , CO, and NO_x to allowable levels. Secondary liquid waste is processed through a treatment unit where dissolved and suspended solids are removed. The treated wastewater is recycled to the system and the resultant sludge and other wet solids are solidified (Feizollahi and Shropshire 1992).

3.2.4 Compaction and Supercompaction

Compaction is a process whereby material is physically compressed into a smaller volume. Compaction is one of the simplest and most effective techniques for reducing the volume of dry solid LLW. The processing of LLW by compaction for volume reduction is prevalent throughout the nuclear industry (Gillins et al. 1986). It is particularly suitable for generators of large volumes of lightly contaminated compactible wastes.

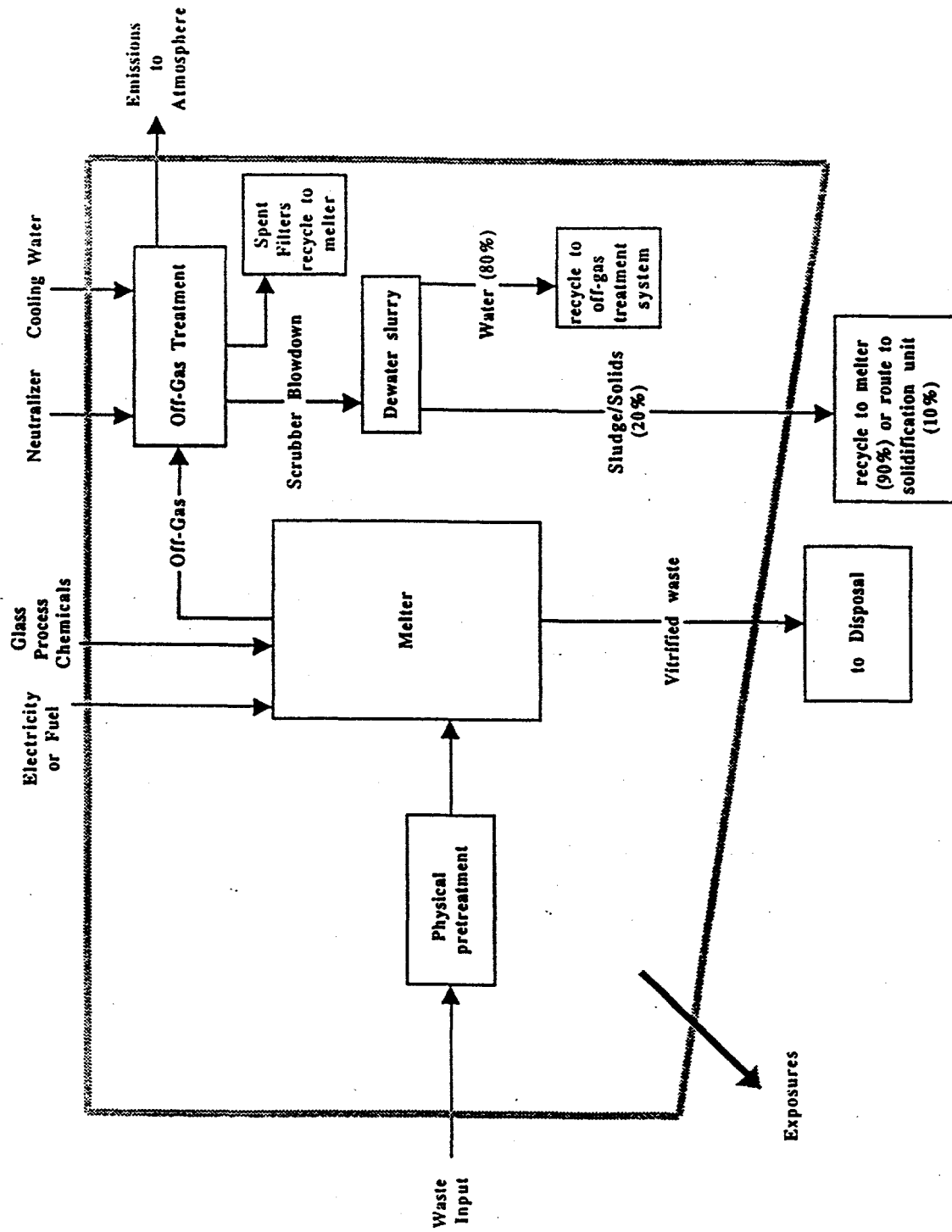


FIGURE 3.4 Vitrification Flow Sheet

TABLE 3.3 Vitrification Parameters

Parameter	Quantity	Comments or Assumptions	Reference
Air emissions: flow rate and output mass as a function of input mass	28.3 m ³ /min 0.96 kg/kg input waste	Based on a 159 kg/h system. Feizollahi and Shropshire flow sheets.	PNL (1983) Feizollahi and Shropshire (1992)
Air emissions: output activity as function of input activity ($C_{i_{out}}/C_{i_{in}}$)	Particulates: 2.5E-8 Volatiles: 5.0E-4	Overall total curie release fractions. Data vary among different systems and are highly site-specific. This estimate is conservative.	Adapted from PNL (1983)
Liquid residuals: output mass as function of input mass (kg/kg)	0.094	Total liquid waste treatment sludge. Typically, about 90% can be recycled to the melter and only 10% would require solidification (0.0094 kg/kg).	Feizollahi and Shropshire (1992)
Liquid residuals: output activity as function of input activity ($C_{i_{out}}/C_{i_{in}}$)	0.10	Assumes 10% of total activity is in scrubber sludge. This is a conservative estimate for most nuclides. Some species can be present in higher percentages, e.g., mercury.	PNL (1983); DOE (1992b)
Solid residuals: output volume as function of input volume	None	Spent filters are assumed to be recycled to the melter for vitrification. If not recycled, the number of filters depends on the off-gas system design; each filter is about 0.15 m ³ .	NA ^a
Solid residuals: output activity as function of input activity	None	Spent filters are assumed to be recycled to the melter for vitrification. If not recycled, the activity is assumed to be 3% of the 10% of activity that is captured in the off-gas system; thus, 0.003 Ci/Ci is processed.	EPA (1992)
Treated product leach rate/leach characteristics (leachability index or g/m ² -d)	Leach index generally greater than 14; leach rate about 1.0E-5 to 1.0E-7 g/cm ² -d	NA	PNL (1983); DOE (1992b)
Mass output: vitrified product mass/input waste mass	0.985 kg/kg	NA	Feizollahi and Shropshire (1992)

TABLE 3.3 (Cont.)

Parameter	Quantity	Comments or Assumptions	Reference
Volume output: vitrified product volume/input waste volume	0.20 m ³ /m ³	Volume reduction of 80%.	Chapman (1991); Feizollahi and Shropshire (1992)
Activity output: vitrified product activity/input waste activity	0.90 Ci/Ci	Assumes 10% loss to off-gas treatment system residuals.	PNL (1983)

^a NA = not applicable.

Three types of compactors are commonly used to reduce LLW volumes: drum compactors, box compactors, and supercompactors. Drum compactors compact wastes directly into 55-gal (208-L) drums. Some rigid materials are acceptable as long as the drum maintains its shape (Gillins et al. 1986). Box compactors are similar to drum compactors except that waste is compacted into a reinforced metal box. Box compactors are capable of accepting larger objects; many rigid materials, including lighter metal components, are acceptable (Gillins et al. 1986). Drum and box compactors are similar in that each involves compacting material into an open container. Compaction occurs in cycles; additional material is added between cycles until the drum or box is filled to capacity. Supercompactors differ from the drum and box compactors because they compact an already loaded container. Supercompactors require overpack containers for disposal since they often rupture the container (drum or box) during compaction (Gillins et al. 1986). Supercompactors exert great forces and are capable of compacting nearly all dry solid LLW, including steel piping and metal components that fit into the final disposal container (Magleby 1988). Supercompactors compact essentially all the material that may be loaded into a drum or box by compacting the drum or box and its contents at the same time.

The volume reduction obtained from compacting waste depends on the applied force, the bulk density of the waste material, and the springback of the material when the pressure is released (drum and box compactors) (Trigilio 1981). Size reduction by shredding prior to compression tends to increase the volume reduction (by about 10% [LLNL 1992]) achieved by compaction. Compactors have many applications and, therefore, vary greatly in size and design. Size and power requirements are determined by throughput, size of items to be processed, size of the disposal or storage container, volume reduction desired, and material to be compressed.

A variety of solid LLW is compactible, including paper, fragments of plastic or rubber, rags, glassware, and small metallic items. Compaction should not be applied to items so dense or hard that there would be insignificant reduction in volume, items capable of damaging the press, such as odd-shaped pieces and pyrophoric or explosive substances, and waste containing free liquids (Trigilio 1981). A typical compactible waste stream consists of 70% paper, plastics, and cloth; 15% composite and other material; and 15% small pieces and metal shavings (LLNL 1992).

The most common volume reduction system for dry compactible waste has been simple drum or box compactors (Gilbert/Commonwealth 1980). Drum compactors usually consist of a hydraulically operated ram, a support frame, and an air filtration system containing roughing filters and/or HEPA filters. The representative drum or box compactor module is described in Figure 3.5 and Table 3.4. The drum or box compactor does not generate any liquid residuals because wastes with free liquids are excluded from compaction.

The representative supercompactor module is described in Table 3.5. Its primary input is contaminated drummed waste from the generators. Filled drums are placed in the supercompactor, which compresses the drums and transfers the drum to a staging conveyor. The compressed drum is placed in an overpack. A liquid residual may be generated by supercompaction; any liquid would be directed to a sump (Feizollahi and Shropshire 1992). It is assumed that the air filtration system on the representative LLW compaction system contains HEPA filters.

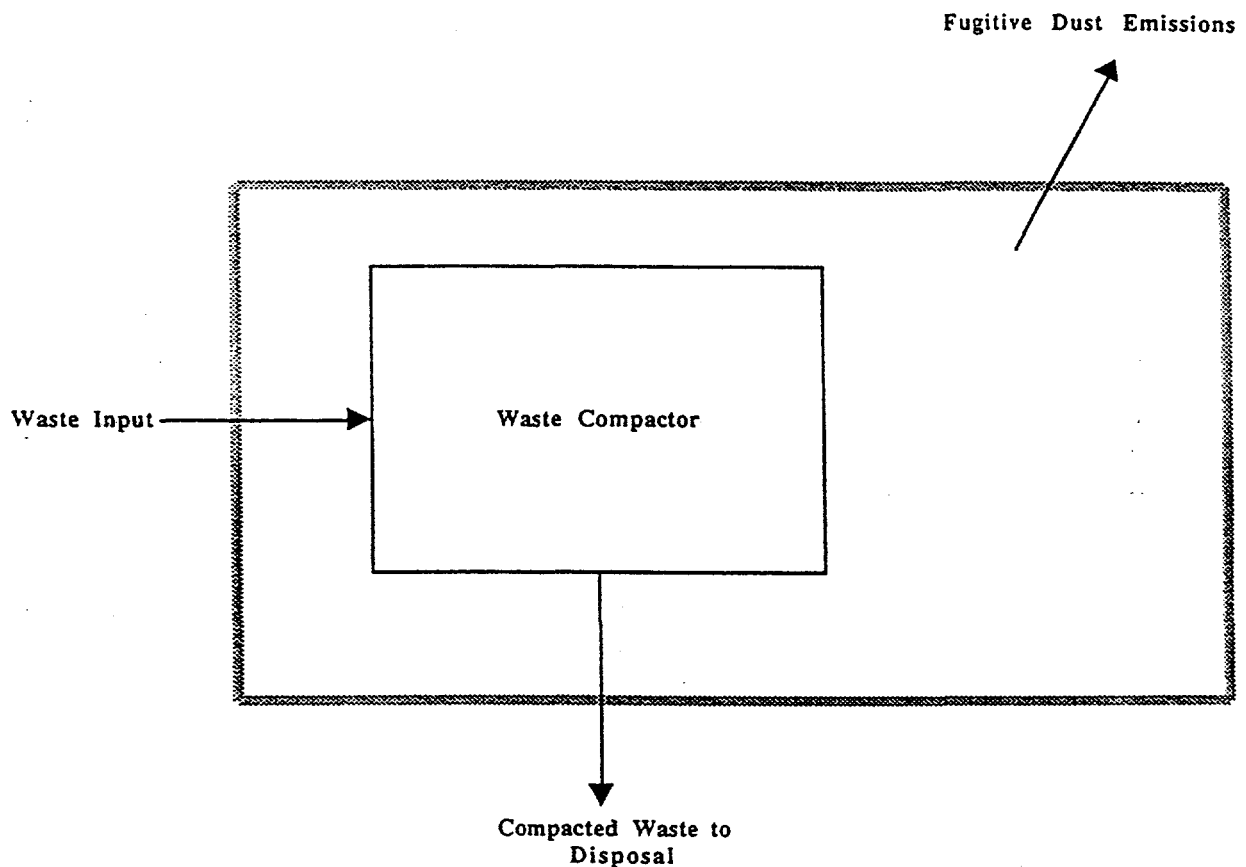


FIGURE 3.5 Compaction Flow Sheet

TABLE 3.4 Drum or Box Compactor Parameters

Parameter	Quantity	Comments or Assumptions	Reference
Air emissions: flow rate	56.6 m ³ /min	NA ^a	Adapted from WHC (1991)
Air emissions: output activity as function of input activity ($C_{i_{out}}/C_{i_{in}}$)	1.5E-10	Based on Hanford compactor data.	Adapted from WHC (1991)
Liquid residuals: output volume as function of input volume	None	Liquid discharges are typically not generated during operation of box and drum compactors.	Bodily (1993); Deschane (1993)
Liquid residuals: output activity as function of input activity	None	Liquid discharges are typically not generated during operation of box and drum compactors.	Bodily (1993); Deschane (1993)
Treated product leach rate/leach characteristics (leachability index)	6	Assumes minimum acceptable leachability index for NRC waste form stability acceptance criteria.	NRC (1991)
Mass output: compacted waste mass /input waste mass (kg_{out}/kg_{in})	1	Mass remains the same. Volume decrease results in increased density.	NA
Volume output: compacted waste volume/input waste volume (m^3_{out}/m^3_{in})	0.20	Conventional compactors typically have volume reduction factors of 4 to 5. The shredding of waste prior to compaction can increase volume reduction by about 10%.	LLNL (1992)
Activity output: compacted waste activity/input waste activity ($C_{i_{out}}/C_{i_{in}}$)	1	Activity remains the same. Unit activity increases due to volume decrease.	NA

^a NA = not applicable.

3.2.5 Size Reduction

Size reduction (i.e., sizing) of radioactive waste has been conducted for over 20 years in Europe and for over 10 years in the United States (Magleby 1988). Size reduction devices tear, rip, shatter, and/or crush waste materials into smaller pieces. Size reduction is used in conjunction with compactors or land disposal to reduce void spaces between individual waste objects, thus reducing the volume of the disposed waste. The effectiveness of an individual size reduction method depends on the composition of the waste and the desired method of processing or disposing of the waste after sizing (Magleby 1988).

TABLE 3.5 Supercompaction Parameters

Parameter	Quantity	Comments or Assumptions	Reference
Air emissions: volume flow rate	0.71 m ³ /h	NA ^a	Magleby (1988)
Air emissions: output activity as function of input activity (C _i /C _i)	1.5E-10	Based on Hanford compactor data.	Adapted from WHC (1991)
Liquid residuals: output mass as function of input mass (kg/kg) ^b	0.02	Liquid residuals assumed to be 2% of input mass flow rate. This is conservative; 1% would be more typical.	Feizollahi and Shropshire (1992)
Liquid residuals: output activity as function of input activity (C _i /C _i) ^b	0.02	Assumes activity is distributed uniformly from waste feed. This is conservative.	NA
Treated product density	1,280 kg/m ³	A range of densities has been reported: 961 kg/m ³ - 1,730 kg/m ³ .	Gillins et al. (1986); Magleby (1988)
Treated product leach rate/leach characteristics (leachability index)	6	Assumes minimum acceptable leachability index for NRC waste form stability acceptance criteria. Supercompaction actually reduces leachability due to decreased surface area.	NRC (1991)
Mass output as a function of input (kg _{out} /kg _{in})	1	Mass remains the same. Volume decrease results in increased density.	NA
Volume output as a function of input (m ³ _{out} /m ³ _{in})	0.10	On average, overpacks are 90% filled. Volume reduction factors can vary depending on the waste sorting and waste mix. Volume reduction factors in the range of 6 to 15 have been reported.	Gillins et al. (1986); EG&G (1987b); Magleby (1988); Feizollahi and Shropshire (1992)
Activity output as a function of input (C _i _{out} /C _i _{in})	0.98	Assumes activity remains the same with the loss of 2% to liquid generation. Minor losses to air emissions. Unit activity increases due to volume decrease.	NA

^a NA = not applicable.

^b Liquid residuals can be generated during supercompaction but are not shown in the generic compaction flow diagram (Figure 3.5).

Sizing of materials results in an overall decrease in the waste volume. Sizing of materials also facilitates handling and subsequent placement in a disposal facility. The sizing process will generate fugitive dusts. To control dust dispersion, process equipment should be housed in an enclosed structure with a filtered ventilation system. Local dust control at the processing equipment itself is also advisable. Sizing equipment consists of crushers, impactors, rotary shear shredders, hammer mill shredders, shears, and cutting torches. Together, this equipment can process rock, concrete, asphalt, brick, slag, general building debris, structural shapes, steel and alloy fabricated plate shapes, rebar, pipes, vehicles and parts, process equipment, metal turnings, electric motors, electrical switch gears and controls, conduits, and transformers (MK-Ferguson 1992). The representative size reduction facility module is described in Figure 3.6 and Table 3.6. Unit size reduction processes are utilized as necessary, either singly or in series, to reduce the size of dry solid waste that is input to the facility.

3.2.6 Evaporation/Concentration

Evaporation is a technique used to concentrate a liquid effluent by using heat to drive off relatively volatile components. It is normally used to concentrate LLW solutions. Evaporation is

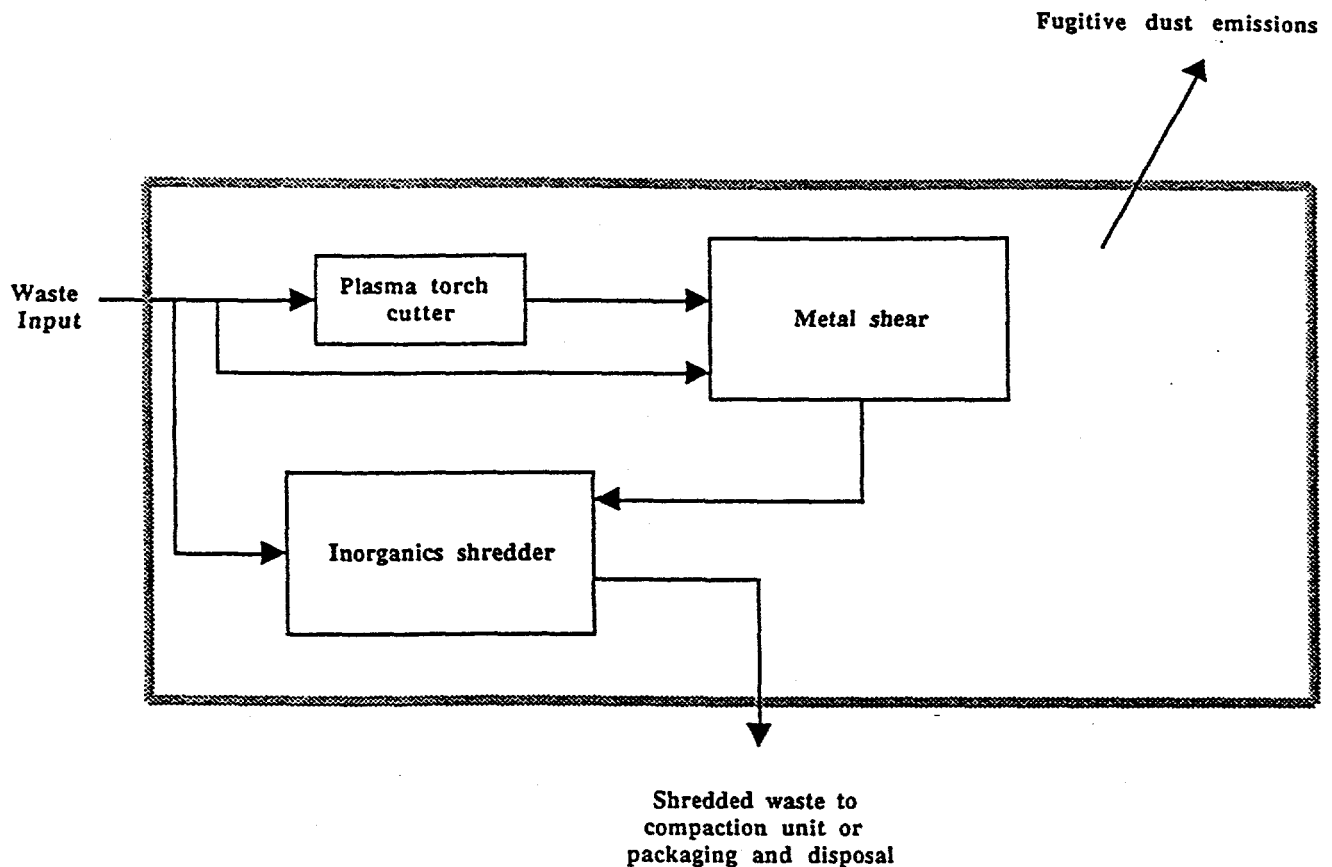


FIGURE 3.6 Size Reduction Flow Sheet

TABLE 3.6 Material Sizing Parameters

Parameter	Quantity	Comments or Assumptions	Reference
Air emissions	170 m ³ /min	Based on contact size-reduction facility at the West Valley Demonstration Project.	Frank et al. (1988)
Air emissions: output activity as function of input activity ($C_{i_{out}}/C_{i_{in}}$)	4.3E-8	Based on WERF south stack data and the compactor/metal processing feed information. An alternate calculation is to determine the bulk contamination concentration in pCi/g and multiply by 4.3E-7 to give pCi emitted per gram of waste processed (adapted from DOE 1992a, Vol. 2).	Litteer et al. (1991)
Liquid residuals: output volume as function of input volume	None	Free liquids are excluded from the feed to the material sizing technology.	NA ^a
Solid residuals: output volume as function of input volume	None	HEPA filters from ventilation system would generate an additional waste stream. Assume filters are replaced annually.	NA
Treated product leach rate/leach characteristics (leachability index)	6	Assumes minimum acceptable leachability index for NRC waste form stability acceptance criteria.	NRC (1991)
Mass output: size reduced waste mass/input waste mass (kg_{out}/kg_{in})	1	Mass unchanged by size reduction.	
Volume output: size reduced waste volume/input waste volume (m^3_{out}/m^3_{in})	0.167	Based on the reported average volume reduction factor for the contact size-reduction facility at West Valley Demonstration Project (volume reduction factor of 6).	Frank et al. (1988)
Activity output: size reduced waste activity/input waste activity ($C_{i_{out}}/C_{i_{in}}$)	1	Activity is unchanged by size reduction activities. An increase in unit activity would result due to volume decrease. Minor losses of radioactivity to the ventilation system.	NA

^a NA = not applicable.

conducted by vaporizing a portion of a solvent (typically water) to produce a concentrated solution or thick liquor of radioactive material (often called evaporator bottoms). The residue is usually a liquor (Trigilio 1981). The vaporized solvent, which is usually water, can be condensed and reused in process applications or can be discharged (Magleby 1988).

Evaporation is a widely used technique for reducing the volume of liquid radioactive wastes in fuel cycle facilities and the nuclear industry (Trigilio 1981). Unlike filters and ion exchangers, which remove small amounts of impurities from large amounts of water, evaporators remove the water from the impurities. Evaporation can be used on a wide range of waste compositions and concentrations; however, it is most effective on solutions having relatively high concentrations of impurities. As the dissolved solids concentration of the feed is decreased, general aqueous treatment technologies (e.g., ion exchange and reverse osmosis; see Section 3.2.7) become more economically competitive with evaporation (Gilbert/Commonwealth 1980).

Most evaporators are heated by low pressure steam condensing on the outer surface of metal tubes. In most cases, the material to be evaporated flows inside the tubes. All evaporators require a steam source such as a low pressure boiler. A bleed stream is continuously purged to remove the concentrated product from the evaporator. The solution or slurry is never concentrated so much that it loses its fluid-like properties; further solvent removal can be accomplished in a dryer. The concentrate from the evaporator may require further treatment before final disposal. Evaporation is a proven, well-developed process for concentrating most liquid or semi-liquid wastes, including sludges (PNL 1992).

Evaporators provide the capability for a high degree of separation for most radioactive materials. Tritium, iodine, ruthenium, and any other relatively volatile contaminants are exceptions because they volatilize and are either emitted to the air or incorporated in the recovered wastes fraction. Liquid waste treatment methods other than evaporation (general aqueous treatment, e.g., ion exchange, flocculation, filtration) are generally favored for large volume treatment of liquid LLW unless other chemicals are present (e.g., concentrated caustic solutions) (Trigilio 1981).

The representative evaporation/concentration facility technology module is described in Figure 3.7 and Table 3.7. The influent is high total-dissolved-solids liquid LLW. Recovered water can be reused or discharged. The concentrate requires solidification prior to disposal. The WM PEIS only assesses the impacts for management of the solids resulting from aqueous treatment, not the impacts of the evaporation technology.

3.2.7 General Aqueous Liquid Treatment

General aqueous liquid treatment refers to those unit processes that are used in combination to treat relatively dilute aqueous liquid LLW to produce a releasable treated water and solid residual

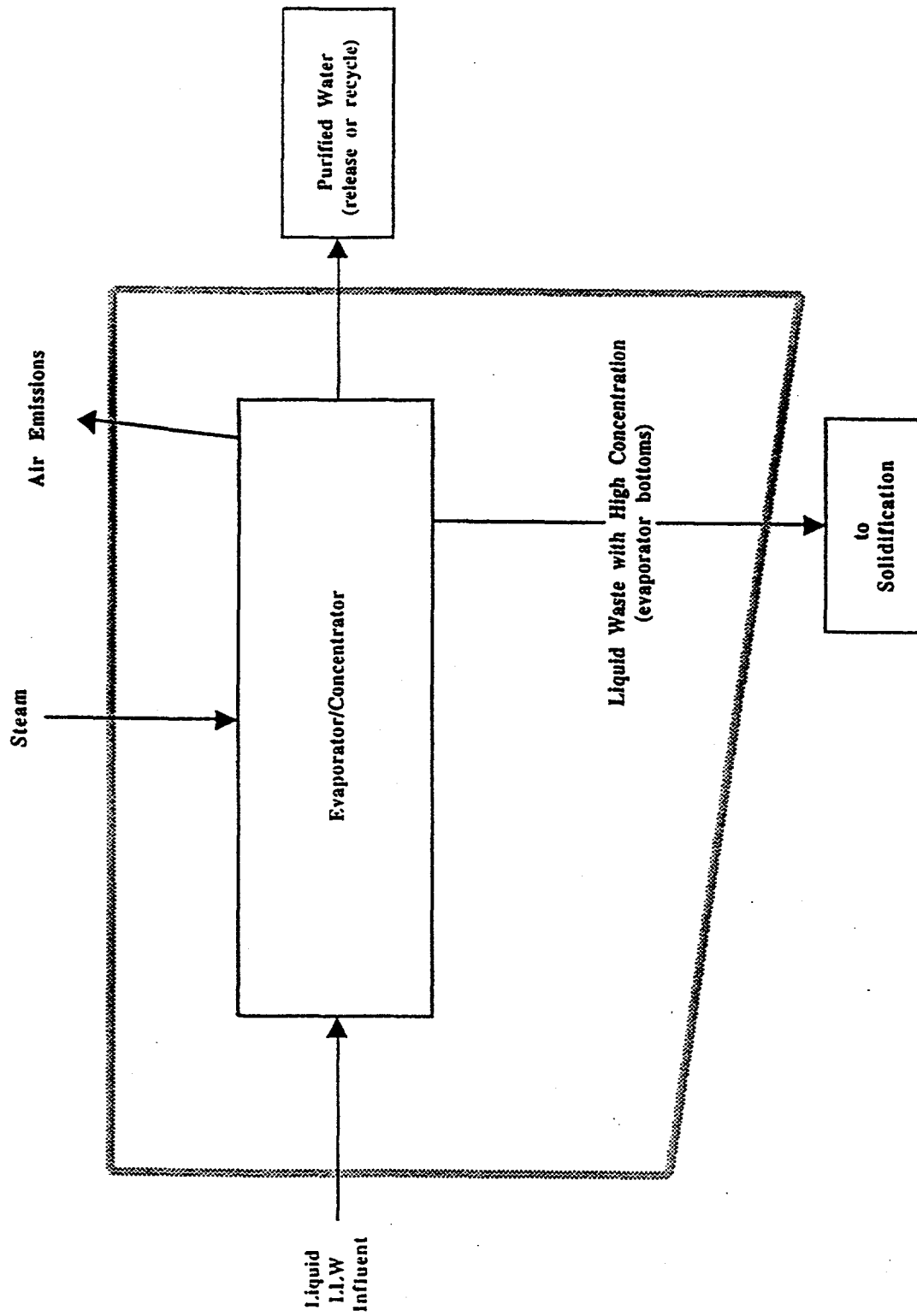


FIGURE 3.7 Evaporation/Concentration Flow Sheet

TABLE 3.7 Evaporation/Concentration Parameters

Parameter	Quantity	Comments or Assumptions	Reference
Air emissions: output volume as function of input volume	35 m ³ /m ³	Assumed to be similar to general aqueous treatment system. Based on Hanford effluent treatment facility stack data (198 m ³ /min for a 0.57 m ³ /min [150 gal/min] treatment facility)	Crummel and Gustavson (1991)
Air emissions: output activity as function of input activity (C _{i_out} /C _{i_in})	H-3: 0.72 C-14: 1.0E-8 I-129: 1.0E-5 Others: 1.0E-11	Based on estimated radionuclide fractions in evaporator emissions at fuel storage, reprocessing, and fabrication facilities.	Adapted from DOE (1979)
Evaporator bottoms (solid residuals): output volume as function of input volume	0.05	Based on a 95% water recovery/wastewater volume reduction percentage.	Adapted from PNL (1992)
Evaporator bottoms: output activity as function of input activity (C _{i_out} /C _{i_in})	≈ 1	Essentially all activity is in the evaporator bottoms.	DOE (1979)
Evaporator bottoms: concentration	200,000 to 300,000 mg/L	Dissolved solids concentration. Typically 20 to 25 wt % dissolved solids. Density is typically 1.2 g/cm ³ .	Gilbert/Commonwealth (1980); Magleby (1988); PNL (1992)
Evaporator bottoms: leach rate	See solidification module	Not applicable. Waste not disposed of until treated by solidification. Leachability is therefore that of solidified waste.	NA ^a
Recovered water: output volume as function of input volume (m ³ _{out} /m ³ _{in})	0.95	Based on a 95% water recovery/ wastewater volume reduction percentage.	Adapted from PNL (1992)
Recovered water: output activity as a function of input activity (C _{i_out} /C _{i_in})	1.0E-4 all nuclides except I-129, which is 1.0E-3, and H-3, which is 0.28	Activity is distributed into evaporator bottoms; some remains in recovered water. Some losses to air emissions also result.	Trigilio (1981); Magleby (1988)
Recovered water: concentration	1 to 10 mg/L	Dissolved solids concentration. Typically <0.001 mg/L dissolved solids concentration.	Magleby (1988); PNL (1992)

^a NA = not applicable.

wastes. General aqueous unit treatment technologies remove small amounts of impurities from large amounts of water. They are most effective for solutions that have relatively low concentrations of impurities. When the dissolved solids concentration is high, evaporation is more appropriate.

The major unit treatment technologies include ion exchange, filtration, coagulation/flocculation, and reverse osmosis. A general aqueous treatment system (made up of one or more unit processes in series) would be designed according to the characteristics of the specific waste to be treated and the discharge requirements for the site. Thus, the actual design of one facility to the next can vary significantly.

The representative general aqueous treatment facility module is described in Figure 3.8 and Table 3.8. Such a facility accepts dilute aqueous LLW and produces a treated water that can be discharged to a local surface water or to a sewer system. The contaminants in the water are concentrated into the solid residual wastes generated during treatment.

3.2.8 Packaging

Low-level radioactive wastes are packaged in various kinds of containers, ranging from 55-gal (208-L) drums to large steel cask liners, and occasionally concrete casks. Cask liners are flat-bottomed carbon steel tanks that are used as burial containers.

The representative waste packaging facility module is described in Figure 3.9 and Table 3.9. This facility accepts all wastes that have not been packaged at the treatment facility and any special wastes that are not treated but are packaged before disposal or storage.

3.2.9 Interim Storage

The representative LLW temporary or interim storage facility module is described in Figure 3.10 and Table 3.10. The facility consists of three operations: storage of arriving waste at a specific location, monitoring of the stored waste, and spill response and cleanup, as required. Ultimately, LLW will be retrieved and shipped from the interim storage facility. Low-level waste storage can occur at any time in the sequence of LLW management; however, it is more typical for the waste to be stored after treatment while awaiting final disposal. The storage facility includes area monitors for gamma and alpha radiation control (Feizollahi and Shropshire 1992).

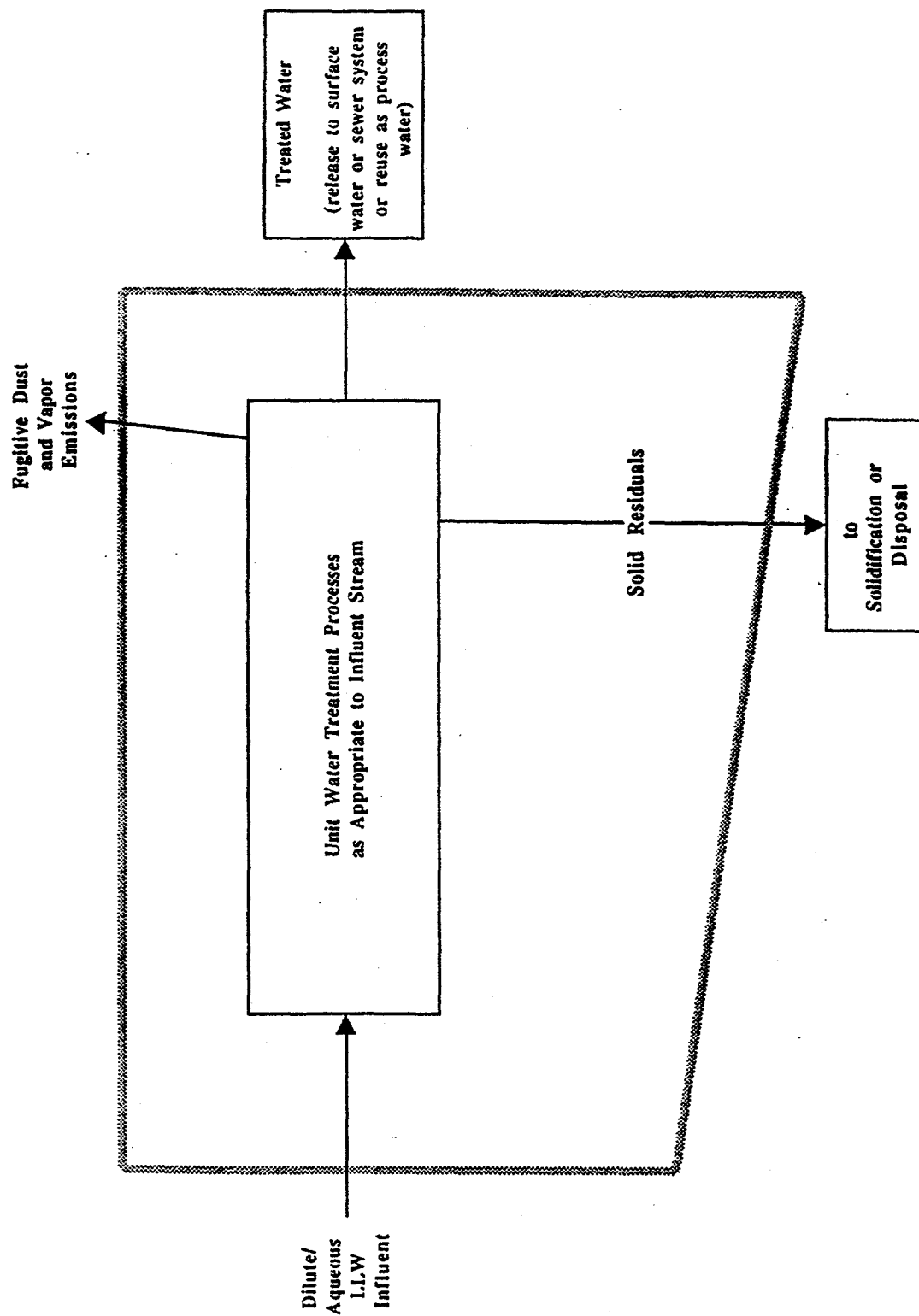


FIGURE 3.8 General Aqueous Liquid LLW Treatment Flow Sheet

TABLE 3.8 General Aqueous Liquid Treatment Parameters

Parameter	Quantity	Comments or Assumptions	Reference
Air emissions: output volume as function of input volume	35 m ³ /m ³	From Hanford effluent treatment facility (198 m ³ /min for a 0.57 m ³ /min [150 gal/min] treatment facility)	Crummel and Gustavson (1991)
Air emissions: output activity as function of input activity (C _{i,out} /C _{i,in})	H-3 and I-129: 1.0E-3 Others: 3.3E-7	Assumes HEPA efficiency of 99.97% and a 0.1% entrainment loss. More conservative than estimates for emissions from zeolite ion-exchange units.	Hill (1981); Crummel and Gustavson (1991)
Liquid effluent discharge: output volume as function of input volume	1	Assumes discharge rate same as throughput rate.	NA ^a
Solid residuals: output volume as function of input volume (m ³ /m ³)	Current: 8.8E-4 Future: 4.5E-4	Based on ORNL system. Residuals currently generated are filter cake and metal sludge. In the future, residuals will be filter cake and spent zeolite, assuming that the plant will generate the same quantity of residuals in the future.	Peterson (1993); Scott (1993)
Solid residuals: output activity as function of input activity (C _{i,out} /C _{i,in})	0.99	Assumes activity removed from liquid influent is removed to the solid residuals.	NA
Liquid effluent discharge: output activity as function of input activity (C _{i,out} /C _{i,in})	H-3: 0.99 I-129: 0.99 Co-60: 1.5E-1 Sr-89,90: 4.8E-5 Y-90: 4.8E-5 Ru-106: 2.0E-5 Rh-106: 2.0E-5 Sn-113: 2.0E-5 Cs-134: 4.8E-5 Cs-137: 4.8E-5 Ba-137m: 4.8E-5 Pm-147: 5.3E-4 Eu-155: 5.3E-4 U-gross: 5.3E-4 Pu-239: 5.3E-4 Am-241: 5.3E-4 Gross α: 1.1E-1 Gross β: 4.1E-2	Depends on the specific treatment units employed. Those indicated here are based on the assumed decontamination factors for microfiltration, reverse osmosis, and ion-exchange processes except as noted here. The Co-60 value is based on the decontamination factor assumed for the ORNL system. Gross alpha and beta values are based on pilot-scale tests for the ORNL zeolite system. The Cs-134 value was assumed to be the same as Cs-137.	Ryan and Stimson (1984); Robinson and Parrot (1989); Robinson et al. (1990); and Robinson (1991)

^a NA = not applicable.

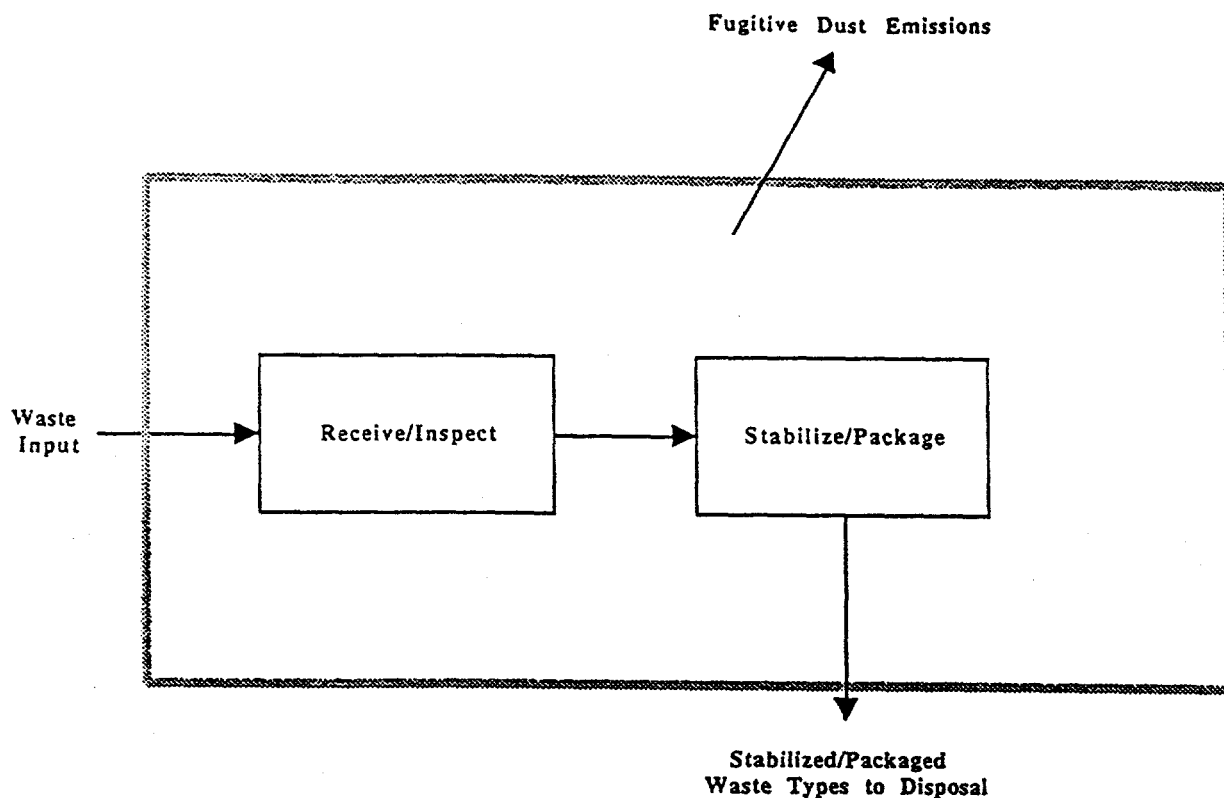


FIGURE 3.9 Waste Packaging Flow Sheet

3.2.10 Disposal

Near-surface land disposal of LLW is the terminal emplacement of wastes on or near the earth's surface. Radioactive wastes disposed of in near-surface facilities, when compared with those in deep geological repositories, are more likely to be subject to deleterious effects from natural processes such as erosion, flooding, freeze-thaw cycles, and plant and animal intrusion. Near-surface disposal of radioactive wastes is used only for wastes with acceptably low radionuclide concentrations. Near-surface disposal facilities include shallow land burial, earth-covered aboveground vaults (tumuli), and belowground vaults.

Greater confinement disposal generally consists of waste burial with enhanced engineered barriers and includes disposal in deeper trenches or augered shafts. Greater confinement disposal is considered a subset of shallow land burial in the WM PEIS. Near-surface land disposal of low-level radioactive wastes has been practiced since the early 1940s. To date, the most extensive experience is with shallow land burial and tumuli (Kittel 1989).

Shallow land burial consists of placing waste containers in an excavated trench, backfilling voids between containers with sand or other earthen material, compacting the backfill material, and covering the waste with a cover or cap of earthen material. The cap is multilayered and serves as

TABLE 3.9 Waste Packaging Parameters

Parameter	Quantity	Comments or Assumptions	Reference
Air emissions: flow rate	170 m ³ /min	Assumed to be similar to compaction and material sizing. Based on contact size reduction facility at the West Valley Demonstration Project.	Frank et al. (1988)
Air emissions: output activity as function of input activity ($C_{i_{out}}/C_{i_{in}}$)	4.3E-8	Assumed to be similar to compaction and material sizing. Based on WERF south stack data and the compactor/metal processing feed information.	Litteer et al. (1991)
Treated product density as a function of input waste density	1	Actual waste density unchanged by packaging. Overall disposal density decreases due to volume increase from packaging.	Treat et al. (1983)
Treated product leach rate/leach characteristics	NA ^a	Waste leaching would be determined by waste form in package following package breach.	NA
Mass output: packaged waste mass/input waste mass (kg_{out}/kg_{in})	1	Mass unchanged by packaging.	Feizollahi and Shropshire (1992)
Volume output: packaged waste volume/input waste volume (m^3_{out}/m^3_{in})	1.1	Actual waste volume unchanged by packaging. Overpacks assumed to be 90% filled. This results in an overall volume increase.	NA
Activity output: packaged waste activity/input waste activity ($C_{i_{out}}/C_{i_{in}}$)	1	Activity not changed by packaging. Surface exposure rate reduced due to increased shielding. Volume increase due to packaging will result in a decrease in unit activity.	NA

^a NA = not applicable.

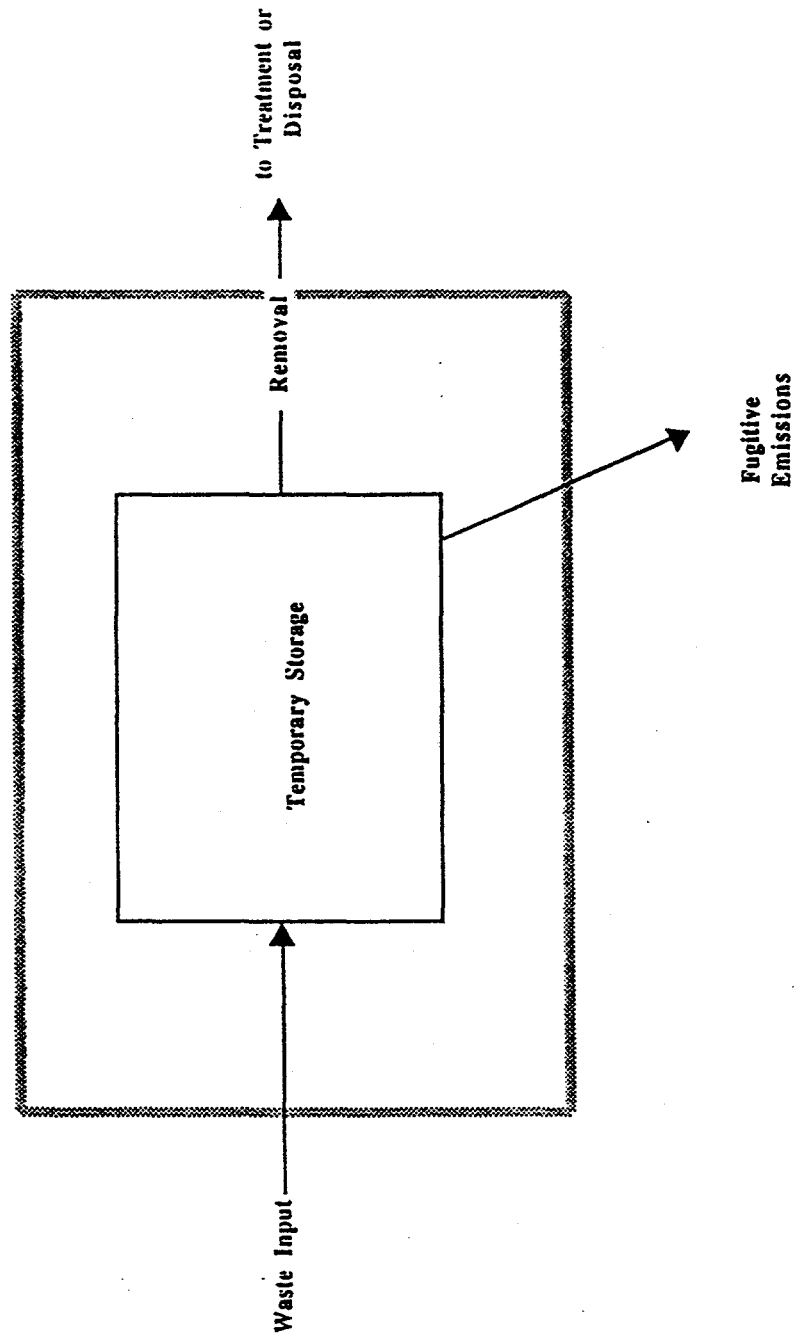


FIGURE 3.10 Temporary Waste Storage Flow Sheet

TABLE 3.10 Interim Storage Parameters

Parameter	Quantity	Comments or Assumptions	Reference
Air emissions: volume or mass as function of input	56.6 m ³ /min	Would be vented to storage building exhaust. Assumes exhaust volume similar to that for compaction.	See compaction module.
Air emissions: activity as function of input ($C_{i_{out}}/C_{i_{in}}$)	1.0E-4	Assumes 1% is released and 1% of that becomes airborne. Does not include any filtering of releases.	DOE (1988)
Liquid residuals	None	Assumed incidental. Spills would be cleaned up as they occur.	NA ^a
Treated product leach rate	NA	Wastes would be stored in a manner to preclude contact with infiltrating water.	NA
Mass output (kg_{out}/kg_{in})	1	Mass unchanged by storage.	NA
Volume output (m^3_{out}/m^3_{in})	1	Volume unchanged by storage.	NA
Activity output ($C_{i_{out}}/C_{i_{in}}$)	1	Assumes activity unchanged by storage.	NA
Land area required as function of capacity	0.15 m ² /m ³	Assumes waste is stacked up to 6.1 m. A small capacity storage facility is about 11,300 m ³ , medium about 25,200 m ³ , and large about 198,200 m ³ . Capacity is for 20 years worth of waste input.	Feizollahi and Shropshire (1992)

^a NA = not applicable.

a low permeability barrier to restrict the infiltration of water into the disposal trenches. The cover system also restricts human, plant, and animal intrusion into the waste and reduces surface exposure rates (EG&G 1987a).

For greater confinement disposal, the enhanced engineered barriers and greater depth of placement improves the isolation of the waste from the environment over that of shallow land burial.

Belowground vault disposal consists of placing the wastes in engineered concrete structures that are located below the natural grade of the disposal site. Because the vault is below grade, it is covered with an earthen cover that may be similar to that used for shallow land burial. The inclusion

of both a concrete vault and an earthen cover in this design further restricts water infiltration into the waste, preventing human or biological intrusion, and reducing surface gamma exposures (EG&G 1987a). In tumulus disposal, wastes are placed in an engineered concrete structure located above the natural grade of the disposal site. Each disposal unit is filled with waste containers and then backfilled and sealed with concrete. A concrete cover is constructed over the sealed cells. The cells are then capped with an outer layer of earthen materials such as soil, clay, or rocks; the layer is engineered to withstand long-term environmental weathering effects (Feizollahi and Shropshire 1992). A below-grade bunker can be co-located with the tumulus for higher activity wastes (EG&G 1987a). The representative LLW disposal modules are described in Figure 3.11 and Table 3.11.

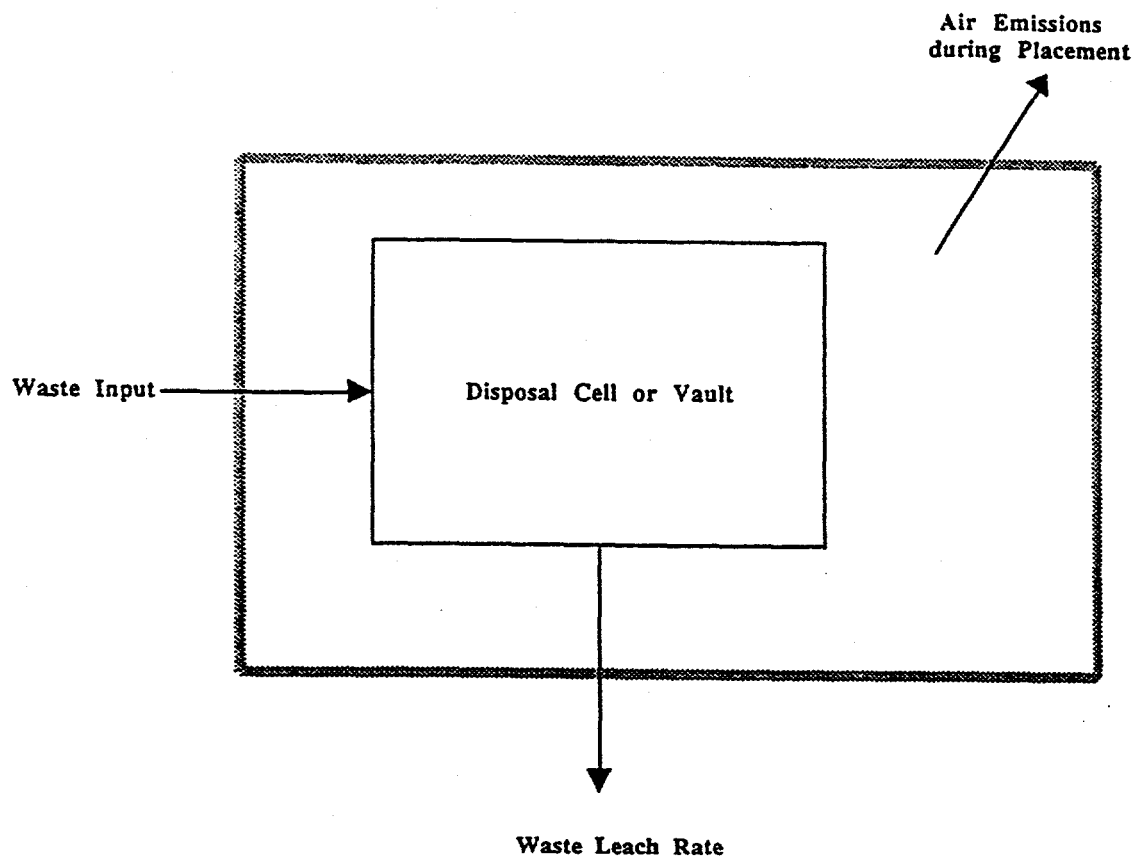


FIGURE 3.11 Disposal Flow Sheet

TABLE 3.11 Disposal Parameters^a

Parameter	Quantity	Comments or Assumptions	Reference
Air emissions: output mass as function of input mass	6.0E-7 kg/kg	Particulate emissions during placement of waste. Based on aggregate handling and storage piles.	DOE (1992a)
Air emissions: output activity as function of input activity ($C_{i_{out}}/C_{i_{in}}$)	H-3: 0.175 for grout waste while setting (adapted from Choi and Fowler 1990) Following closure surface exposure rates limited to <5 mrem/h	Following closure, only surface exposure rates would represent air emission impacts. Grout waste placed wet into a vault will release tritium vapor. Following closure, no routine emissions would be expected.	NA ^b
Land area required as function of capacity	SLB: 1.97 m ² /m ³ GCD: 2.17 m ² /m ³ BGV: 2.79 m ² /m ³ TUM: 4.20 m ² /m ³	Total area utilized includes buffer zone requirements, space for adjacent trench units, allowance for cover, and space for equipment. The estimate does not include allowances for site- specific terrain or geology.	Adapted from EG&G (1987a)

^a Disposal options are shallow land burial (SLB), greater confinement disposal (GCD), belowground vault (BGV), and tumulus (TUM).

^b NA = not applicable.

4 EXISTING LOW-LEVEL WASTE MANAGEMENT FACILITIES

The six sites authorized for disposal of DOE-generated LLW are the Hanford Site near Richland, Washington; INEL at Idaho Falls, Idaho; LANL at Los Alamos, New Mexico; NTS at Mercury, Nevada; ORR, which includes ORNL, Y-12 Plant, and K-25 Plant at Oak Ridge, Tennessee; and SRS at Aiken, South Carolina. More than 30 sites within the DOE complex have reported LLW generation rates. All these wastes are currently being transported to one of the six authorized sites for disposal. Most wastes requiring off-site disposal are currently sent to Hanford or to the NTS (Figure 4.1).

The LLW management practices at the major LLW generating sites are summarized in this section. The major sites consist of the six disposal sites identified above plus 12 other sites that generate, in combination, a total of about 98% of the volume and activity of LLW in the DOE complex. The 12 additional sites are LLNL, RFETS, Mound, SNL-CA, NRF, KAPL, BAPL, LBL, Pinellas, PGDP, Portsmouth, and RMI (Section 4.2).

4.1 ASSUMPTIONS

The LLW management facilities identified in this section are limited to planned or approved and existing facilities. Facilities that are planned or approved include only those facilities that have completed conceptual design and have authorization to proceed with detail design. Existing facilities that are not currently operating were also included on the basis of the assumption that they could become operational, as required, and that they represent a nonrecoverable cost for the purposes of cost analysis.

The available capacity for waste treatment and disposal facilities was assumed to equal the physical capacity of the system, whether or not this contradicts any limits imposed by current site permits. In addition, available capacities represent a summation of all corresponding facilities at a given site; that is, where several facilities with similar capabilities exist, the total capacity reported is equivalent to the sum of the capacities for the individual facilities at the site.

Technical limitations related to waste characteristics for site-specific facilities were not taken into account in the WM PEIS analysis. For example, facilities restricted by specific radionuclide or metal content were assumed to be adequate to treat a more diversified waste stream than may currently be the practice. This assumption does not affect the comparison of programmatic alternatives.

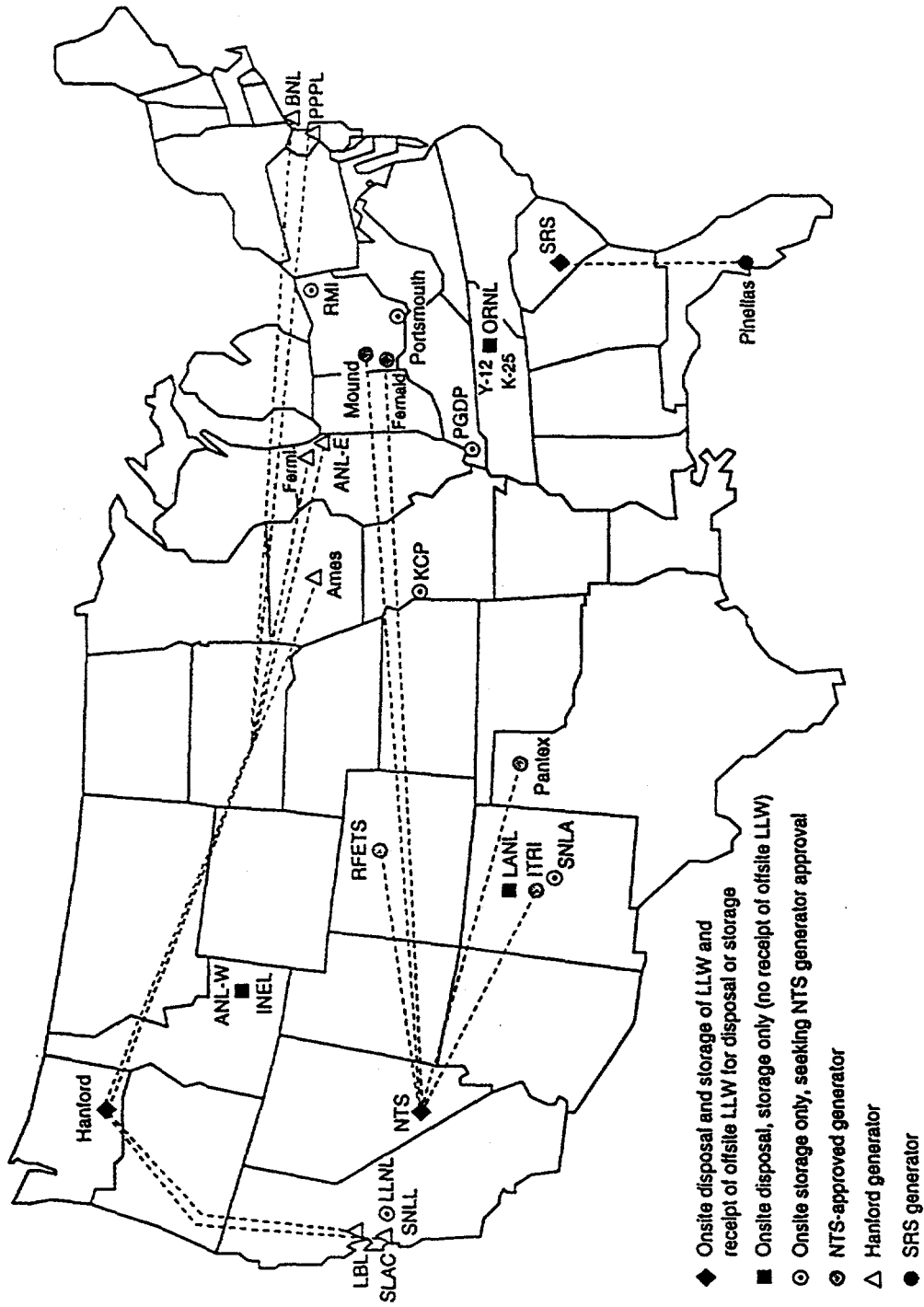


FIGURE 4.1 Map of Existing DOE LLW Transportation and Disposal Configuration (Source: Modified from DOE 1993b).

For aqueous waste treatment processes, it was assumed that existing capacities are adequate to treat current and projected aqueous waste inventories because they are dedicated to specific waste streams at the individual sites and there will be no shipping of aqueous wastes under regionalized or centralized alternatives. For all treatment technologies, hourly processing rates were converted to annual capacities, where required, assuming an annual average operating time of 4,032 hours, which assumes three shifts per day, five days per week, 48 weeks per year, and a 70% availability.

It was also assumed that the available storage capacity for LLW at each of the major sites is sufficient for all current operations; for the no action alternative, it was assumed that current storage capacities will be adequate for 30 years. This assumption is based on the fact that most LLW is not stored for extended periods of time but is routinely disposed of. Storage that does occur is typically limited to the temporary staging of wastes before disposal. Disposal capacities are provided on an annual basis. These annual capacities are based on total available capacity assuming a 10-year operational period for waste disposal.

Because of the differing levels of detail in facility data reported among sites and assumptions made for the WM PEIS, there is a potential for inconsistencies among the data reported in this section and corresponding information being compiled by DOE for other uses.

4.2 FACILITY CAPABILITIES AND CAPACITIES

In Table 4.1, LLW treatment, storage, and disposal capabilities are identified by site.

TABLE 4.1 Existing LLW Treatment, Storage, and Disposal Capabilities^a

Site	TSD Capability ^b	Capacity (m ³ /yr)	Comments
LLNL	Compaction	1,500	Shredding and compaction.
	Size reduction	115	Planned facility.
RFETS	Compaction	5,600	Two compactor/baler facilities.
INEL/ANL-W	Incineration	2,170	WERF incinerator. Also has capability for mixed waste.
	Solidification	2,770	WERF waste stabilization unit.
	Compaction	5,700	WERF compaction facility.
	Size reduction	5,000	WERF size reduction facility.
	Aqueous treatment	20,000	Includes general aqueous treatment technologies as well as evaporation. Evaporation in ponds is practiced at INEL.
	Disposal	3,900	Shallow land burial at the Radioactive Waste Management Complex.
Mound	Solidification	Not available ^c	Solidification of sludge waste is performed in the WD building at the site.
SNL-CA	Compaction	Not available ^c	LLW is compacted in Building 961.
ORNL/Y-12/ K-25	Compaction	1,400	ORNL compactor, Building 7831.
	General aqueous	398,000	Process Waste Treatment Plant.
	Evaporation	39,800	ORNL liquid LLW Evaporation facility.
	Disposal	600	Interim Waste Management Facility (Solid Waste Storage Area 6). Capacity available from future expansions not included.

TABLE 4.1 (Cont.)

Site	TSD Capability ^b	Capacity (m ³ /yr)	Comments
SRS	Incineration	7,950	Consolidated Incineration Facility (CIF) (planned); also has capability for mixed waste.
	Compaction	20,000	Two compactors operating at 10,000 m ³ /yr each.
	Solidification	210	CIF ash solidification facility.
	Disposal	5,370	Low activity waste vaults (4,800 m ³ /yr) plus intermediate level waste vaults (planned, 570 m ³ /yr). Capacity available from future expansions not included.
Hanford	Compaction	4,040	Two compactors, 213-W and Reading.
	Disposal	8,500	Shallow land burial in the LLW Burial Grounds, 200-W Area.
NRF	NA ^d	NA	Waste management at the Naval Reactor Sites is outside the scope of the WM PEIS; waste from the Naval Reactor Sites is transported to the disposal site in an already treated and packaged form.
KAPL	NA	NA	See NRF above.
BAPL	NA	NA	See NRF above.
LBL	Compaction Solidification	Not available ^c 105	LLW is compacted in Building 75A. Solidification in Building 75.
Pinellas	None	NA	No LLW treatment or disposal takes place at the Pinellas plant.
PGDP	Solidification	Not available ^c	Treatment capacity assumed adequate.

TABLE 4.1 (Cont.)

Site	TSD Capability ^b	Capacity (m ³ /yr)	Comments
PORTS	None	NA	No LLW treatment or disposal takes place at Portsmouth.
LANL	Disposal	1,300	Shallow land burial, TA-54.
NTS	Disposal	44,900	Shallow land burial, Area 3 (6,700 m ³ /yr), Area 5 (38,200 m ³ /yr).
RMI	Compaction	Not available ^c	LLW treatment limited to compaction.

^a Sites listed are the 6 disposal sites plus 12 additional sites that together (18 sites) generate and/or dispose of 98% of the LLW volume and activity in the DOE complex. For the no action alternative evaluation, other DOE sites were assumed to package waste for disposal only, except FNAL and the Pantex plant, which were assumed to treat liquid wastes by evaporation and compactible wastes by compaction.

^b All sites are assumed to have waste packaging capability.

^c Capacity information for these treatment facilities is not available. For the purpose of alternative evaluation, they were assumed to accommodate projected waste loads.

^d NA = not applicable.

Source: EG&G (1994).

5 WASTE LOADS BY WASTE MANAGEMENT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT ALTERNATIVE

This section identifies the waste loads that are managed at each site and for each treatability category and corresponding waste management process under the WM PEIS alternatives. Section 5.1 addresses assumptions used, and Section 5.2 discusses the alternatives analyzed. Section 5.3 identifies the waste loads and also describes the methodology used to estimate waste loads.

5.1 ASSUMPTIONS

Low-level waste loads were determined for each site and treatability category, as defined in Section 2, and for each LLW management technology module, as defined in Section 3, for each WM PEIS alternative. The representative LLW inventories and treatment modules were used to develop the volumes of LLW treated and disposed of for various alternative configurations of the DOE complex.

Several assumptions were made in deriving the waste loads. Assumptions inherent in the no action alternative are identified in Section 4. For all other alternatives, waste loads were derived from representative LLW management technology modules, assuming that wastes are produced at the identified annual generation rate over a 20-year period and are treated over a 10-year period. Exceptions to this assumption are the Hanford grout waste, the SRS saltstone, and aqueous wastes. These wastes are assumed to be treated annually, as generated, over the entire 20-year analysis period. As indicated in Section 2.2, recent modifications to the Hanford site waste management plans indicate that the "grout waste" will instead be vitrified, significantly reducing waste volumes. The assumption of grout waste for the WM PEIS analysis is therefore conservative. Additional assumptions are outlined in Section 5.2.

5.2 ALTERNATIVE AND CASE DESCRIPTIONS

The WM PEIS alternatives for LLW management are (1) no action, (2) decentralized, (3) regionalized, and (4) centralized. The no action alternative is described in Section 5.2.1. The decentralized, regionalized, and centralized alternatives are defined by several different treatment method and disposal site configurations that examine areas of interest to DOE for LLW management. Each configuration defines a separate subalternative for analysis.

The decentralized alternative involves decentralized treatment, which is limited to stabilizing liquids and fines and decentralized disposal at 16 sites.

The regionalized alternatives involve either regional treatment and disposal or regional disposal. The number of treatment sites ranges from 11 to 4 regional centers. Regionalized disposal was evaluated for 12, 6, and 2 sites.

The centralized alternatives involve centralized disposal with either decentralized, regional, or centralized treatment options. Table 5.1 provides a summary of the LLW alternatives evaluated in the WM PEIS.

For purposes of discussion and comparison, it is convenient to divide the alternatives into those that only include decentralized, minimum treatment (which consists of stabilization of liquid wastes and packaging of solid wastes in preparation for transportation or disposal), and those that include regionalized treatment for volume reduction (which includes incineration, compaction, size reduction, and solidification) of amenable solid LLW. Minimum treatment takes place at the site of waste generation, whereas volume reduction takes place at regional treatment centers. Further description of the minimum treatment and volume reduction alternatives is provided in Sections 5.2.2 and 5.2.3.

5.2.1 No Action Alternative

The no action alternative assumes all sites use existing and approved treatment facilities as identified in Section 4. The existing facilities have been modeled by using the representative technology modules described in Section 3. Where existing treatment capacity is insufficient to manage all the LLW at a given installation, it is assumed that the excess waste is sent to disposal without treatment. Under the no action alternative, disposal takes place at the six existing disposal sites (Hanford, INEL, NTS, LANL, ORR [includes K-25, ORNL, and Y-12], and SRS) (see Figure 4.1). It was assumed that requests for generator status at NTS and Hanford have been approved. Where disposal capacity is insufficient, it is assumed that capacity will be expanded to accommodate the required LLW disposal volume.

5.2.2 Minimum Treatment Alternatives

The decentralized alternative; regionalized alternatives 1, 3, 6, and 7; and centralized alternatives 1 and 2 involve minimal on-site treatment of all wastes with shipment to disposal sites as specified in Table 5.2. The minimal treatment consists of evaporation of aqueous liquids, incineration of organic liquids, solidification of sludges, and packaging of solid LLW. For the regionalized alternatives, disposal takes place at 16, 12, 6, 2, and 2 sites, respectively. For the centralized alternatives, disposal is at 1 site. The following disposal technologies are assumed: shallow land burial at Hanford, INEL, LLNL, NTS, LANL, RFETS, and Pantex; tumulus disposal

TABLE 5.1 Summary of Low-Level Waste Alternatives

Alternative	Description
No action	All sites use existing and approved treatment facilities and dispose of waste at 6 sites, per current arrangements.
Decentralized	All sites minimum-treat (stabilize liquids and fines, package solid LLW), and dispose of wastes at 16 sites.
Regionalized 1	All sites minimum-treat and dispose of wastes at 12 sites.
Regionalized 2	Regional treatment for volume reduction at 11 sites (incineration, supercompaction, and size reduction); all sites minimum-treat other wastes and dispose of waste at 12 sites.
Regionalized 3	All sites minimum-treat and dispose of wastes at 6 sites.
Regionalized 4	Regional treatment for volume reduction at 7 sites; all sites minimum-treat other wastes and dispose of waste at 6 sites.
Regionalized 5	Regional treatment for volume reduction at 4 sites; all sites minimum-treat other wastes and dispose of waste at 6 sites.
Regionalized 6	All sites minimum-treat and dispose of wastes at 2 sites (SRS and Hanford).
Regionalized 7	All sites minimum-treat and dispose of wastes at 2 sites (SRS and NTS).
Centralized 1	All sites minimum-treat and dispose of waste at 1 site (Hanford).
Centralized 2	All sites minimum-treat and dispose of waste at 1 site (NTS).
Centralized 3	Regional treatment for volume reduction at 7 sites, dispose of all waste at 1 site (Hanford).
Centralized 4	Regional treatment for volume reduction at 7 sites, dispose of all waste at 1 site (NTS).
Centralized 5	One site (Hanford) incinerates, size reduces, and supercompacts all volume-reducible wastes; all sites minimum-treat all other wastes; 1 site (Hanford) disposes of all waste.

TABLE 5.2 Generator Site—Disposal Site Linkages: Minimum Treatment Alternatives

Generator Site	Disposal Site				
	Decentralized (16 Sites) ^a	Regionalized 1 (12 Sites)	Regionalized 3 (6 Sites)	Regionalized 7 ^b (2 Sites: NTS, SRS)	Centralized 2 ^c (1 Site: NTS)
Hanford	Hanford	Hanford	Hanford	NTS	NTS
INEL	INEL	INEL	INEL	NTS	NTS
NRF	INEL	INEL	INEL	NTS	NTS
ANL-W	INEL	INEL	INEL	NTS	NTS
NTS	NTS	NTS	NTS	NTS	NTS
LANL	LANL	LANL	LANL	NTS	NTS
ORNL	ORR	ORR	ORR	SRS	NTS
K-25	ORR	ORR	ORR	SRS	NTS
Y-12	ORR	ORR	ORR	SRS	NTS
SRS	SRS	SRS	SRS	SRS	NTS
Mound	PORTS	PORTS	ORR	SRS	NTS
LLNL	LLNL	LLNL	NTS	NTS	NTS
SNL-CA	LLNL	LLNL	NTS	NTS	NTS
Pantex	Pantex	Pantex	LANL	NTS	NTS
RFETS	RFETS	RFETS	LANL	NTS	NTS
RMI	PORTS	PORTS	ORR	SRS	NTS
SNL-NM	SNL-NM	LANL	LANL	NTS	NTS
KCP	PGDP	PGDP	ORR	SRS	NTS
ITRI	SNL-NM	LANL	LANL	NTS	NTS
Ames	ANL-E	PORTS	ORR	SRS	NTS
ANL-E	ANL-E	PORTS	ORR	SRS	NTS
BNL	BNL	PORTS	ORR	SRS	NTS
Fermi	ANL-E	PORTS	ORR	SRS	NTS
LBL	LLNL	LLNL	NTS	NTS	NTS
KAPL	PORTS	PORTS	ORR	SRS	NTS
BAPL	PORTS	PORTS	ORR	SRS	NTS
PGDP	PGDP	PGDP	ORR	SRS	NTS
PORTS	PORTS	PORTS	ORR	SRS	NTS
PPPL	PORTS	PORTS	ORR	SRS	NTS
SLAC	LLNL	LLNL	NTS	NTS	NTS
Pinellas	SRS	SRS	SRS	SRS	NTS
WVDP	WVDP	PORTS	ORR	SRS	NTS

^a Decentralized and regionalized 1 alternatives include FEMP as a disposal site. However, FEMP only disposes of its own waste under Case 3; no WM LLW was reported generated at FEMP.

^b Regionalized 6 disposal sites are the same as regionalized 7 except wastes disposed at NTS are disposed at Hanford.

^c Centralized 1 disposal site is Hanford.

at FEMP, ORR, Portsmouth, and Paducah; and belowground vault at SRS. Table 5.3 shows the treatment trains that apply for all sites that generate LLW for the minimum treatment cases.

5.2.3 Volume Reduction Alternatives

Regionalized alternatives 2, 4, and 5 and centralized alternatives 3, 4, and 5 assume regional or centralized volume reduction of combustible, compactible, or size-reducible waste for varying configurations. Wastes that are not amenable to volume reduction treatment are either packaged (for solid LLW) or solidified (for liquid and sludge LLW) at the generating site and then transported directly to the disposal sites identified in Table 5.2. Table 5.4 identifies the sites assumed for treatment and disposal for the regional and central treatment alternatives. In general, wastes are transported to treatment sites and disposal sites on the basis of proximity. If the waste was generated at a site with neither disposal on-site nor disposal in state, it is assumed to be disposed of at the treatment site.

Table 5.5 shows the treatment trains applied at the treatment sites for the volume reduction alternatives.

TABLE 5.3 Pretreatment at Waste Generation Site: Minimum Treatment Alternatives

Treatability Category	Technology Module 1	Output	Technology Module 2	Output
1, 2, 3, and 10	Packaging	Packaged waste	NA ^a	NA
4 and 5	Packaging ^b	Packaged waste	NA	NA
6	Solidification	Solidified waste	NA	NA
7	Packaging ^c	Packaged waste	NA	NA
8	Evaporation	Treated water ^d	NA	NA
		Residual wastes	Solidification	Solidified waste
9	Solidification	Solidified waste	NA	NA

^a NA = not applicable.

^b For off-site disposal only. For on-site disposal, these wastes are sent directly to disposal.

^c Except for Category 7 wastes at Hanford and SRS, which are grout and saltstone wastes, respectively. These wastes need no further management and are disposed of in belowground vaults.

^d Treated waste from evaporation is discharged or reused at the site of generation.

TABLE 5.4 Regional Treatment and Disposal Sites for Volume Reduction Alternatives

Alternative	Regional Treatment Sites	Disposal Sites
Regionalized 2 11 Sites: treat 12 Sites: dispose	Hanford, INEL, LANL, ORR, SRS, PORTS, PGDP, Fernald Environmental Management Project (FEMP), LLNL, Pantex, and RFETS	12 Sites, see Table 5.2, Regionalized 1.
Regionalized 4 7 Sites: treat 6 Sites: dispose	Hanford, INEL, LANL, ORR, SRS, PORTS, RFETS	6 Sites, see Table 5.2, Regionalized 3.
Regionalized 5 4 Sites: treat 6 Sites: dispose	Hanford, INEL, ORR, and SRS	6 Sites, see Table 5.2, Regionalized 3.
Centralized 3 7 Sites: treat 1 Site: dispose	7 Sites, see Regionalized 4 (above).	Hanford
Centralized 4 7 Sites: treat 1 Site: dispose	7 Sites, see Regionalized 4 (above).	NTS
Centralized 5 1 Site: treat 1 Site: dispose	Hanford	Hanford

Table 5.6 shows the treatment trains applied for all LLW generating sites (including treatment sites) under the volume reduction alternatives.

5.3 WASTE LOADS

A computational model named WASTE_MGMT (Kotek et al. 1996) was developed to assist in the evaluation of alternatives for the WM PEIS. Input to the model includes waste inventory and characterization data at each DOE site (presented in Section 2); unit operations data for the facilities used for TSD of the wastes (presented in Sections 3 and 4); and information about the alternative approaches for the TSD of the wastes and for the siting of such TSD facilities (presented in Sections 5.1 and 5.2).

TABLE 5.5 Treatment Train at Regional or Central Treatment Site: Volume Reduction Alternatives

Treatability Category	Technology Module 1	Output	Technology Module 2	Output
1	Incineration	Ash Off-gas treatment liquid residual	Solidification Solidification	Solidified waste Solidified waste
2, 6, 7, 8, and 10	These treatability category wastes are not managed at the regional treatment site (minimal treatment wastes)			
3	Supercompaction	Compacted waste Residual waste	Solidification	Solidified waste
4	Size reduction	Size-reduced waste	Packaging (if shipped for offsite disposal)	Packaged wastes (offsite only)
5	Size reduction	Size-reduced waste	Packaging (if shipped for offsite disposal)	Packaged wastes (offsite only)
9	Incineration	Ash Off-gas treatment liquid residual	Solidification Solidification	Solidified waste Solidified waste

TABLE 5.6 Pretreatment at Waste Generation Site: Volume Reduction Alternatives

Treatability Category	Technology Module 1	Output	Technology Module 2	Output
1, 3, 4, 5, and 9	Packaging	Packaged waste ^b	NA ^a	NA
2	Packaging	Packaged waste ^b	NA	NA
6	Solidification	Solidified waste ^b	NA	NA
7	Packaging ^c	Packaged waste ^b	NA	NA
8	Evaporation	Treated water ^d	NA	NA
		Residual waste	Solidification	Solidified waste ^b
10	Packaging	Packaged waste ^b	NA	NA

^a NA = not applicable.

^b Waste form sent to disposal, no further treatment.

^c Except Category 7 wastes at Hanford and SRS, which are grout and saltstone wastes, respectively. These wastes need no further management and are disposed of in belowground vaults at the site of generation.

^d Treated waste from evaporation is discharged or reused at the site of generation.

The WASTE_MGMT model combines the LLW inventory and characterization information, TSD technology module parameters, and the definition of cases to calculate the following:

- Annual quantities and characteristics of the wastes shipped among sites,
- Annual quantities and characteristics of the wastes processed by each TSD facility,
- Annual air emissions of radionuclides resulting from the operation of the TSD facilities, and
- Annual generation rates and characteristics of secondary waste streams resulting from the operation of the TSD facilities.

Waste loads (annual quantities) treated and disposed of for each of the LLW alternatives are summarized in Sections 5.3.1 through 5.3.3. These include the follow-on management of treatment waste residuals (i.e., secondary wastes).

Waste loads were used to calculate TSD facility costs, worker populations, and resource requirements in the WM PEIS. Waste loads and waste characteristics were also used in accident analysis (Mueller et al. 1996). The quantities and characteristics of waste shipped among sites were used to calculate the radiological doses and health effects to transportation workers and the general public along transportation routes (Monette et al. 1996).

Air emissions during normal operations, as well as radiological characteristics of the waste feed throughput for the treatment facilities, were used to calculate radiological doses and health effects to workers and the general public in the WM PEIS. Radiological source terms used in the health effects assessment are reported in the Appendices to this report.

5.3.1 No Action Alternative

Under the no action alternative, LLW is assumed to be managed as it is currently within the DOE complex. Table 5.7 identifies the waste loads calculated for each site under this alternative. Waste loads identified in the table are based on an annual generation rate. Wastes currently in storage are incorporated within the annual generation rate by assuming distribution over a 20-year period. Disposal capacities are based on a 10-year operating period. Sites where waste generation exceeds existing waste management capacity are noted in the table; excess waste loads are assumed

TABLE 5.7 No Action Alternative Waste Loads^a

Site	Technology	Calculated Volume (m ³ /yr)	Available Capacity (m ³ /yr)
Hanford	Compaction	2.41E+03	4.04E+03
	Disposal ^b	5.48E+03	8.50E+03
INEL	Incineration	8.55E+02	2.17E+03
	Solidification	9.71E+02	2.77E+03
	Compaction	3.41E+02	5.70E+03
	Size reduction	4.52E+02	5.00E+03
	Disposal	2.48E+03	3.90E+03
LANL	Disposal ^c	8.19E+03 ^c	1.30E+03 ^c
LBL	Solidification	4.97E+00	1.05E+02
	Compaction	3.61E+01	Assumed adequate
LLNL	Compaction	3.59E+01	1.50E+03
	Size reduction	2.12E+01	1.15E+02
Mound	Solidification ^d	2.52E+02	Assumed adequate
NTS	Disposal	1.63E+04	4.49E+04
ORR ^e	Solidification	3.48E+01	Assumed adequate
	Compaction ^c	3.08E+03 ^c	1.40E+03 ^c
	Disposal ^c	1.20E+04 ^c	6.00E+02 ^c
PGDP	Solidification	5.41E+01	Assumed adequate
RFETS	Compaction ^d	1.40E+03	5.60E+03
RMI	Compaction	1.02E+02	Assumed adequate
SNL-CA	Compaction	1.19E-01	Assumed adequate
SRS	Incineration	7.29E+02	7.95E+03
	Solidification	3.26E+01	2.10E+02
	Compaction	4.63E+03	2.00E+04
	Disposal ^{b,c}	2.34E+04 ^c	5.37E+03 ^c

^a Only the major DOE sites (combined generation of 98% of LLW volume and activity) are included. Packaging capability is assumed to be adequate for all sites as is any aqueous treatment.

^b Excludes Hanford grout waste and SRS saltstone disposal volume.

^c These sites have insufficient available capacities.

^d Treatment is of alpha-LLW.

^e Includes K-25, ORNL, and Y-12.

to be sent to disposal. Where disposal capacity is insufficient, it is assumed that capacity will be expanded to accommodate the required LLW disposal volume.

5.3.2 Minimum Treatment Alternatives

Minimum treatment alternatives assume on-site treatment of liquids, stabilization of fines, and packaging of solid wastes for disposal at 1 to 16 sites. Waste loads requiring treatment at each site remain the same for all minimum treatment alternatives and are identified in Table 5.8. The only change among these alternatives is in packaging volumes; volumes increase at those sites that no longer act as disposal sites, and waste must, therefore, be shipped to another site for disposal.

Waste loads for disposal are identified in Table 5.9. Disposal volumes also change depending on the disposal site configuration. These changes are displayed graphically in Figure 5.1. The total disposal volume under the minimum treatment alternatives across the DOE complex is about $160,000 \text{ m}^3/\text{yr}$ ($5,650,000 \text{ ft}^3/\text{yr}$). Waste disposal volumes at a disposal site vary from as little as $180 \text{ m}^3/\text{yr}$ ($6,400 \text{ ft}^3/\text{yr}$) at NTS for decentralized disposal to $160,000 \text{ m}^3/\text{yr}$ ($5,650,000 \text{ ft}^3/\text{yr}$) at NTS for centralized disposal. Source terms for representative minimum treatment alternatives are identified in Appendix B.

5.3.3 Volume Reduction Alternatives

Volume reduction alternatives assume either regional or central treatment for volume reduction. Only waste that can be combusted, compacted, or reduced in size is transported to the treatment centers. Waste volumes shipped for treatment at the treatment centers are identified in Table 5.10. Waste loads for disposal are identified in Table 5.11.

Treatment volumes at the regional treatment sites change according to the treatment site configuration. The total waste volume going to treatment across the DOE complex for the volume reduction alternatives is about $76,000 \text{ m}^3/\text{yr}$ ($2,830,000 \text{ ft}^3/\text{yr}$). Source terms for representative volume reduction alternatives are identified in Appendix C.

Disposal waste loads also change depending on the disposal site configuration under the volume reduction alternatives. These changes are displayed graphically in Figure 5.2. The total disposal volume under the volume reduction alternatives across the DOE complex is about $81,000 \text{ m}^3/\text{yr}$ ($2,860,000 \text{ ft}^3/\text{yr}$). Waste disposal volumes at a disposal site vary from as little as $27 \text{ m}^3/\text{yr}$ ($950 \text{ ft}^3/\text{yr}$) at LLNL for Regionalized 2 to $81,000 \text{ m}^3/\text{yr}$ ($2,860,000 \text{ ft}^3/\text{yr}$) at Hanford for centralized disposal.

TABLE 5.8 Minimum Treatment Alternatives: Annual Waste Treatment Volumes by Site

Treatment Site	Treatment Technology	Total Volume (m ³ /yr)	Treatment Site	Treatment Technology	Total Volume (m ³ /yr)
Ames	Packaging	1.06E+01	NTS ^a	Packaging	1.49E+02
ANL-E	Packaging	6.68E+02	ORR ^b	Solidification	6.97E+01
BAPL	Waste shipped to disposal	1.16E+03	Pantex	Packaging ^c	1.24E+04
BNL ^a	Solidification	6.18E-01		Evaporation	6.0E+01
	Packaging	8.20E+01	PORTS	Packaging	2.50E+02
FNAL	Solidification	4.20E+01		Packaging ^d	1.23E+03
	Evaporation	6.2E+00	PPPL	Solidification	4.3E+01
	Packaging	4.1E+00		Packaging	6.31E-01
Hanford	Solidification	1.32E+02	PGDP	Packaging	2.14E+01
	Packaging ^c	4.00E+01		Solidification	2.1E+01
INEL ^e	Solidification	5.74E+03		Evaporation	5.41E+01
	General aqueous	9.33E+02	Pinellas	Packaging ^d	4.73E+03
	Packaging ^c	2.05E+03	RFETS	Packaging	1.27E+02
KAPL	Packaging	4.10E+03		Solidification	1.39E+02
KCP	Packaging	1.85E+03	RMI	Packaging ^{d, f}	3.54E+03
LANL	Packaging ^c	2.41E+00		Solidification	2.40E+02
LBL	Solidification	1.39E+04	SLAC	Packaging	4.77E+03
	Evaporation	2.07E-01		Solidification	4.86E-01
	Packaging	4.97E+00		Packaging	2.47E+02
LLNL ^h	Solidification	1.19E+02	SNL-NM ^g	Packaging	2.51E+02
	Packaging ^d	2.06E+02	SRS	Solidification	1.93E+03
Mound	Solidification	1.05E+02		Packaging ⁱ	4.87E+04
	Packaging	5.03E+02	WVDP	Solidification	1.95E+03
		3.35E+03		Packaging ^a	2.02E+03

^a Packaging volumes at these sites increase for alternatives where waste disposal is not on-site. This is due to the addition of packaging for treatability categories 4 and 5 prior to shipment to the disposal site. The packaging volumes for off-site disposal are as follows: BNL, 5.62E+02 m³/yr; NTS, 1.69E+02 m³/yr; and WVDP, 2.22E+03 m³/yr.

^b Includes K-25, ORNL, ORISE, and Y-12.

^c Packaging volumes for regionalized 6 and 7 and centralized 1 and 2 alternatives increase at these sites because of the addition of packaging for treatability categories 4 and 5 prior to shipment to the disposal site. Packaging throughput volumes are as follows: Hanford, 8.81E+03 m³/yr; INEL, 6.40E+03 m³/yr; LANL, 1.49E+04 m³/yr; and ORR 2.60E+04 m³/yr.

^d Packaging volumes for regionalized 3, regionalized 7, and centralized 2 alternatives increase at these sites because of the addition of packaging for treatability categories 4 and 5 prior to shipment to the disposal site. Packaging throughput volumes are as follows: LLNL, 1.50E+02 m³/yr; PORTS, 9.60E+04 m³/yr; PGDP, 4.82E+03 m³/yr; and RFETS, 3.96E+03 m³/yr.

^e Includes ANL-W and NRF.

^f Includes packaging 2.80E+03 m³/yr of alpha-LLW.

^g Includes ITRI.

^h Includes SNL-CA.

ⁱ The packaging volume for centralized 2 increases at SRS because of the addition of packaging for treatability categories 4 and 5 prior to shipment to the disposal site. Packaging throughput volume at SRS under this alternative is 4.96E+04 m³/yr.

TABLE 5.9 Minimum Treatment Alternatives: Annual Disposal Volumes

Disposal Site	Volume by Alternative (m ³ /yr) ^a						
	Decentralized ^b	Regionalized 1 ^b	Regionalized 3	Regionalized 6	Regionalized 7	Centralized 1	Centralized 2
Hanford ^c	9.44E+03	9.44E+03	9.44E+03	4.11E+04	-	1.50E+05	1.50E+05
INEL	9.40E+03	9.40E+03	9.40E+03	-	-	-	-
NTS ^d	1.83E+02	1.83E+02	8.62E+02	-	4.11E+04	-	-
LANL	1.63E+04	1.66E+04	2.14E+04	-	-	-	-
ORR ^d	2.94E+04	2.94E+04	6.42E+04	-	-	-	-
SRS ^e	5.71E+04	5.71E+04	5.71E+04	1.20E+05	1.11E+05	-	-
PORTS	2.30E+04	2.94E+04	- ^e	-	-	-	-
PGDP	5.38E+03	5.38E+03	-	-	-	-	-
LLNL	8.32E+02	8.32E+02	-	-	-	-	-
Pantex ^d	2.93E+02	2.93E+02	-	-	-	-	-
RFETS	4.50E+03	4.50E+03	-	-	-	-	-
ANL-E	9.10E+02	-	-	-	-	-	-
BNL ^d	5.76E+02	-	-	-	-	-	-
SNL-NM	2.75E+02	-	-	-	-	-	-
WVDP ^d	4.94E+03	-	-	-	-	-	-

^a Annual disposal volume over the 10-year waste treatment period (wastes are assumed to be produced over a 20-year period and treated over a 10-year period; see Section 5.1). Residual wastes from aqueous waste treatment are assumed to be disposed of annually during the entire 20-year WM PEIS analysis period. Volumes generated during the initial 10-year period constitute a small fraction (from 0.001% to 1%) of the disposal volume over the 10-year waste treatment period.

^b Decentralized and regionalized 1 alternatives include FEMP as a disposal site. However, FEMP would only dispose of its own waste under these alternatives; no WM LLW was reported generated at FEMP.

^c Excludes SRS saltstone and Hanford grout waste. These represent an additional 2.96E+04 m³/yr and 2.12E+04 m³/yr, respectively. These wastes are generated over the entire 20-year analysis period and are disposed of in belowground vaults.

^d BNL, NTS, ORR, Pantex, and WVDP data derived from Integrated Data Base for 1994 (DOE 1995).

^e A hyphen indicates that the site is not used for disposal under this case.

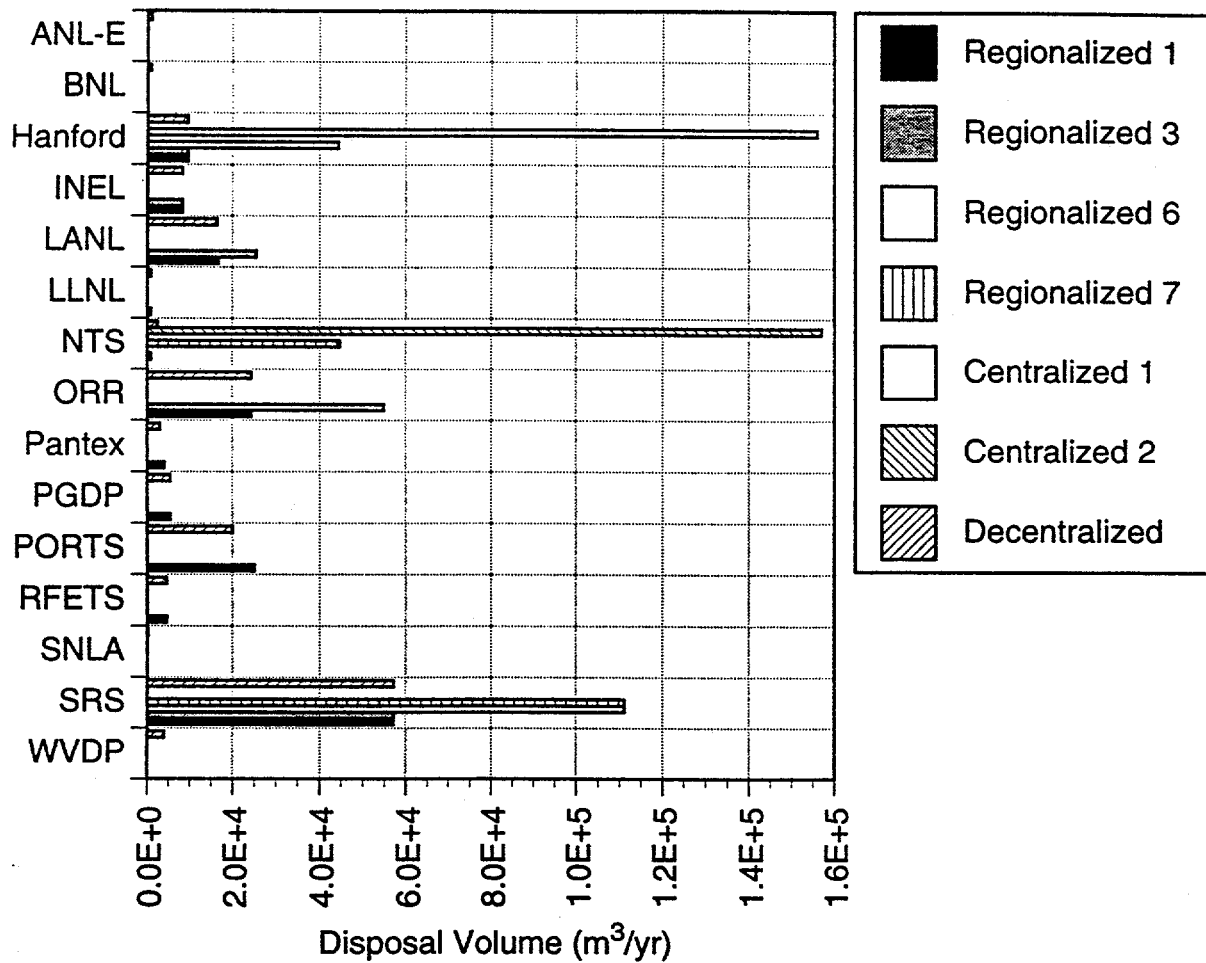


FIGURE 5.1 Minimum Treatment Alternatives: Annual Disposal Volume Comparison

TABLE 5.10 Volume Reduction Alternatives: Annual Waste Treatment Volumes by Site and Technology

Treatment Site	Treatment Technology	Volume by Alternative (m ³ /yr)			
		11 Site Regionalized 2	7 Site Regionalized 4, Centralized 3 and 4	4 Site Regionalized 5	1 Site Centralized 5
FEMP	Incineration	7.67E+02	- ^a	-	-
	Supercompaction	NA ^b	-	-	-
	Size reduction	1.01E+02	-	-	-
Hanford	Incineration	5.28E+00	3.78E+01	3.48E+01	1.82E+04 ^c
	Supercompaction	4.82E+03	4.95E+03	4.94E+03	3.10E+04 ^c
	Size reduction	3.07E+03	3.15E+03	3.15E+03	3.20E+04 ^c
INEL	Incineration	1.70E+03	1.70E+03	7.88E+03 ^d	-
	Supercompaction	6.82E+02	6.82E+02	6.23E+03 ^d	-
	Size reduction	2.07E+03	2.07E+03	3.67E+03 ^d	-
LANL	Incineration	5.62E+03	5.62E+03	-	-
	Supercompaction	4.79E+03	5.05E+03	-	-
	Size reduction	1.08E+03	1.08E+03	-	-
LLNL	Incineration	2.95E+01	-	-	-
	Supercompaction	1.16E+02	-	-	-
	Size reduction	7.53E+01	-	-	-
ORR	Incineration	6.00E+03	6.56E+03	9.09E+03	-
	Supercompaction	2.10E+02	8.46E+03	8.70E+03	-
	Size reduction	1.06E+04	1.07E+04	2.31E+04	-
Pantex	Incineration	NA	-	-	-
	Supercompaction	NA	-	-	-
	Size reduction	1.8E-01	-	-	-
PORTS	Incineration	1.48E+03	2.30E+03	-	-
	Supercompaction	2.20E+01	2.20E+02	-	-
	Size reduction	1.12E+04	1.13E+04	-	-
PGDP	Incineration	5.10E+02	-	-	-
	Supercompaction	5.79E+02	-	-	-
	Size reduction	9.39E+01	-	-	-
RFETS ^e	Incineration	3.99E+00	3.99E+00	-	-
	Supercompaction	0.00E+00	0.00E+00	-	-
	Size reduction	4.18E+02	4.18E+02	-	-

TABLE 5.10 (Cont.)

Volume by Alternative (m ³ /yr)					
Treatment Site	Treatment Technology	11 Site Regionalized 2	7 Site Regionalized 4, Centralized 3 and 4	4 Site Regionalized 5	1 Site Centralized 5
SRS	Incineration	1.45E+03	1.45E+03	1.45E+03	—
	Supercompaction	9.20E+03	9.38E+03	9.38E+03	—
	Size reduction	9.15E+02	9.15E+02	9.15E+02	—

^a — = not a treatment site under the alternative.

^b NA = not applicable; no waste stream requiring use of this technology at the site under the identified alternative.

^c Hanford also processes alpha-LLW: incineration, 2.79E+03 m³/yr; and supercompaction, 5.87E+00 m³/yr.

^d INEL also processes alpha-LLW: incineration, 2.79E+03 m³/yr; and supercompaction, 5.87E+00 m³/yr.

^e RFETS also processes alpha-LLW: incineration, 2.79E+03 m³/yr; and supercompaction, 5.87E+00 m³/yr.

TABLE 5.11 Volume Reduction Alternatives: Annual Disposal Volumes

Volume by Alternative (m ³ /yr) ^a						
Disposal Site	Regionalized 2 ^b	Regionalized 4	Regionalized 5	Centralized 3	Centralized 4	Centralized 5
Hanford ^c	2.07E+03	2.09E+03	2.09E+03	8.20E+04	NA	8.10E+04
INEL	5.10E+03	5.10E+03	6.00E+03	NA	NA	NA ^d
NTS	0.00E+00	1.97E+02	1.97E+02	NA	8.20E+04	NA
LANL	5.09E+03	7.15E+03	6.38E+03	NA	NA	NA
ORR	1.33E+04	2.64E+04	2.64E+04	NA	NA	NA
SRS ^c	4.55E+04	4.55E+04	4.55E+04	NA	NA	NA
PORTS	1.23E+04	NA	NA	NA	NA	NA
PGDP	4.15E+03	NA	NA	NA	NA	NA
LLNL	6.18E+02	NA	NA	NA	NA	NA
Pantex	2.91E+02	NA	NA	NA	NA	NA
RFETS	1.22E+03	NA	NA	NA	NA	NA

^a Annual disposal volume over the 10-year waste treatment period (wastes are assumed to be produced over a 20-year period and treated over a 10-year period; see Section 5.1). Residual wastes from evaporation are assumed to be disposed of annually during the entire 20-year WM PEIS analysis period. Volumes generated during the initial 10-year period constitute a small fraction (from 0.001% to 1%) of the disposal volume over the 10-year waste treatment period.

^b Regionalized Alternative 2 is the 12-site disposal alternative, including FEMP. However, FEMP would only dispose of its own waste under this alternative; no WM LLW was reported generated at FEMP.

^c Excludes SRS saltstone and Hanford grout waste, which represent an additional 2.96E+04 m³/yr and 2.12E+04 m³/yr, respectively. These wastes are generated over the entire 20-year analysis period and are disposed of in belowground vaults.

^d NA = not applicable for case.

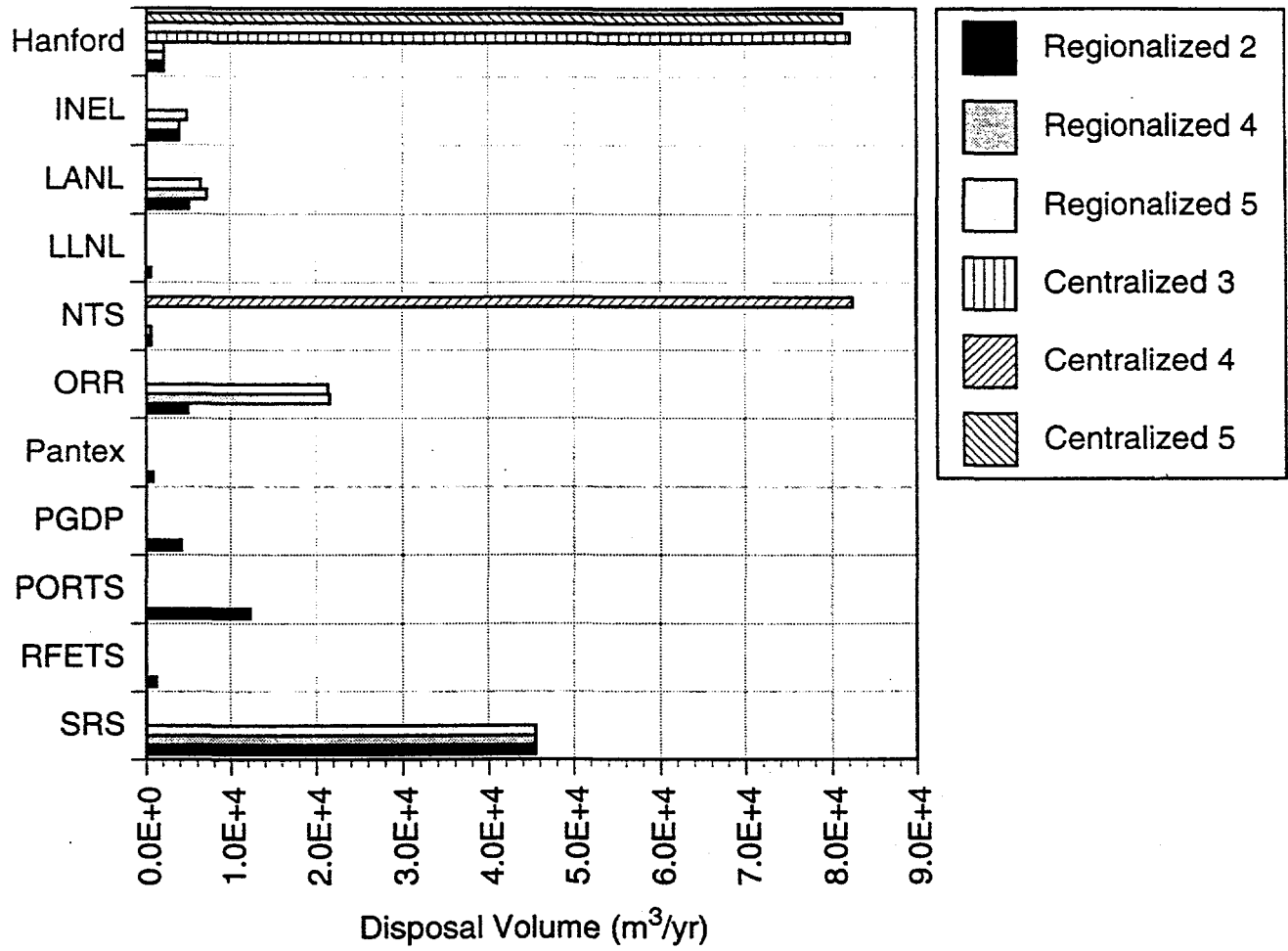


FIGURE 5.2 Volume Reduction Alternatives: Annual Disposal Volume Comparison

6 REFERENCES

- Bechtel Northern Corporation, 1982, *Controlled Air Incinerator Conceptual Design Study*, GEND-021, prepared for U.S. Department of Energy, Three Mile Island Operations Office. Jan.
- Bodily, D., 1993, personal communication from Bodily (Westinghouse Hanford Company, Richland, Wash.) to S. Folga (Argonne National Laboratory, Argonne, Ill.), Feb. 17.
- Boomer, K.D., 1992, *Tank Waste Systems Engineering Study*, WHC-EP-0405-Rev. 0., prepared for U.S. Department of Energy Office of Environmental Management, Westinghouse Hanford Co., Richland, Wash, Oct.
- Chapman, C.C., 1991, *Evaluation of Vitrifying Municipal Incinerator Ash*, PNL-SA-18990, Pacific Northwest Laboratory, Richland, Wash, April.
- Choi, A.S., and J.R. Fowler, 1990, *Material Balance Tables for the DWPF Basic Data Report, Revision 138: Appendix G, Table 19-1*, WSRC-TR-90-93, Westinghouse Savannah River Co., Aiken, S.C., Feb.
- Cook, J.R., et al., 1987, *Environmental Information Document, New Low-Level Radioactive Waste Storage/Disposal Facilities at the Savannah River Plant*, DPST-85-862, prepared by E.I. du Pont de Nemours and Company Inc., Savannah River Laboratory, Aiken, S.C., April.
- Cowgill, M.G., 1991, *A Comparison of Solidification Media for the Stabilization of Low-Level Radioactive Wastes*, BNL-52304, Brookhaven National Laboratory, Upton, N.Y., Oct.
- Crummel, G.M., and R.D. Gustavson, 1991, *Facility Effluent Monitoring Plan for the 242-A Evaporator*, WHC-EP-0466, Westinghouse Hanford Co., Richland, Wash., Nov.
- Crummel, G.M., et al., 1991, *Facility Effluent Monitoring Plan for the Tank Farms Facilities*, WHC-EP-0479, Westinghouse Hanford Co., Richland, Wash., Nov.
- Darnell, G.R., 1990, "Intense Volume Reduction of Mixed and Low-Level Waste, Solidification in Sulphur Polymer Concrete, and Excellent Disposal at Minimum Cost," in *Twelfth Annual U.S. DOE Low-Level Waste Management Conference: Summary and Proceedings*, CONF-9008119, EG&G Idaho, Inc., Idaho Falls, Idaho, Nov.
- Darnell, G.R., et al., 1988, *Application of Existing Low-Level Waste Technology Offers 17-to-1 Volume Reduction and Enhanced Disposal at Low Cost*, EGG-LLW-8054, EG&G Idaho, Inc., Idaho Falls, Idaho, Oct.
- Del Cul, G.D., et al., 1991, *Grout-Based Waste Forms for the Solidification of Anion-Exchange Resins: Final Report*, K/TCD-1004, Oak Ridge K-25 Site, Oak Ridge, Tenn., Dec.

Deschane, D., 1993, personal communication from Deschane (Westinghouse Hanford Co., Richland, Wash.) to S. Folga (Argonne National Laboratory, Argonne, Ill.), Feb. 23.

DOE. See U.S. Department of Energy.

EG&G, 1987a, *Conceptual Design Report Alternative Concepts for Low-Level Radioactive Waste Disposal*, DOE/LLW-60T, U.S. Department of Energy, Washington D.C., June.

EG&G, 1987b, *Documentation on Currently Operating Low-Level Radioactive Waste Treatment Systems*, DOE/ID/12568, U.S. Department of Energy, Washington, D.C., Nov.

EG&G, 1994, *Data Collection on Existing and Planned/Approved Waste Management Facilities in Support of the EM PEIS*, Radioactive Waste Technical Support Program, EG&G Idaho, Inc., Idaho Falls, Idaho, Aug.

EPA. See U.S. Environmental Protection Agency.

Feizollahi, F., and D. Shropshire, 1992, *Waste Management Facilities Cost Information Report*, EGG-WTD-10443, EG&G Idaho, Inc., Idaho Falls, Idaho, Oct.

Frank, D.E., et al., 1988, *Design, Construction, and Operation of the Contact Size Reduction Facility at the West Valley Demonstration Project*, DOE/NE/44139-46, U.S. Department of Energy, Washington, D.C., May.

Gilbert/Commonwealth Engineers/Consultants, 1980, *State of the Art Review of Radioactive Waste Volume Reduction Techniques for Commercial Nuclear Power Plants*, ORNL/SUB-79/13837/2, prepared for Oak Ridge National Laboratory, Oak Ridge, Tenn., April.

Gillins, R.L., et al., 1986, *Characterization of INEL Compactible Wastes, Compactor Options Study and Recommendations*, EGG-WM-7167, prepared by Idaho National Engineering Laboratory, EG&G, Idaho, Inc., Idaho Falls, Idaho, March.

Hendrickson, D.W., 1991, *Grout Treatment Facility Airborne Emissions Projections*, WHC-SD-WM-TI-427, Rev. 1, Westinghouse Hanford Co., Richland, Wash., Jan.

Hill, O.F., 1981, *Preconceptual Design Study for Solidifying High-Level Waste*, DOE/TIC-11433, U.S. Department of Energy, Washington, D.C., April.

Homan, M.D., et al., 1991, *Waste Reduction Program at Oak Ridge National Laboratory during FY 1990*, ORNL/TM-11780, Oak Ridge National Laboratory, Oak Ridge, Tenn., March.

IAEA. See International Atomic Energy Agency.

International Atomic Energy Agency, 1989, *Treatment of Off-Gas from Radioactive Waste Incinerators*, Technical Reports Series No. 302, IAEA, Vienna, Austria.

Kittel, J.H., 1989, *Near-Surface Land Disposal, Vol. 1 of Radioactive Waste Management Handbook*, Harwood Academic Publishers, New York, N.Y.

Klingler, L.M., 1983, "Cyclone Incinerator - Operating Experience," MLM-3094(OP), in *Fifth Annual Participants Information Meeting, Denver, Colorado*, CONF-8308106-2, Monsanto Research Corporation, Miamisburg, Ohio, Sept.

Kotek, T., et al., 1996, *WASTE_MGMT: A Computer Model for Calculation of Waste Loads, Profiles, and Emissions*, ANL/EAD/TM-30, Argonne National Laboratory, Argonne, Ill.

Langton, C.A., 1990, *Slag-Based Materials for Toxic Metal and Radioactive Waste Stabilization*, DP-MS-87-95, E.I. du Pont de Nemours and Company Inc., Savannah River Laboratory, Aiken, S.C., June.

Lawrence Livermore National Laboratory, 1992, *Cost-Benefit Analysis for Waste Compaction Alternatives at Lawrence Livermore National Laboratory: Addendum A to the Waste Minimization and Pollution Prevention Awareness Plan of May 31, 1991*, UCRL-21215-91-Add A, Science Applications International Corp., Pleasanton, Calif., Jan.

Litteer, D.L., et al., 1991, *Radioactive Waste Management Information for 1990 and Record-to-Date*, DOE/ID-10054(90), U.S. Department of Energy, Washington, D.C., July.

LLNL. See Lawrence Livermore National Laboratory.

Lomenick, T.F., 1992, *Proceedings of the Workshop on Radioactive, Hazardous, and/or Mixed Waste Sludge Management*, CONF-901264, Oak Ridge K-25 Site, Oak Ridge, Tenn., Jan.

Long, S.W., 1990, *The Incineration of Low-Level Radioactive Waste: A Report for the Advisory Committee on Nuclear Waste*, NUREG-1393, U.S. Nuclear Regulatory Commission, Washington, D.C., June.

Magleby, M., 1988, *Low-Level Radioactive Waste Volume Reduction and Stabilization Technologies Resource Manual*, DOE/LLW-76T, prepared by Ebasco Services, Inc., for EG&G, Idaho, Inc., U.S. Department of Energy, Washington, D.C., Dec.

McIsaac, C.V., and D.W. Akers, 1991, *Characteristics of Low-Level Radioactive Waste: Decontamination Waste Annual Report for Fiscal Year 1990*, NUREG/CR-5672-Vol. 1, U.S. Nuclear Regulatory Commission, Washington, D.C., Feb.

McIsaac, C.V., et al., 1992, *Leach Studies on Cement-Solidified Ion Exchange Resins from Decontamination Processes at Operating Nuclear Power Stations*, EGG-M-92090, EG&G Idaho, Inc., Idaho Falls, Idaho, July.

Mitchell, D.H., et al., 1989, *Performance Assessment of Grouted Double-Shell Tank Waste at Hanford*, PNL-SA-16884, Pacific Northwest Laboratory, Richland, Wash., Aug.

MK-Ferguson Company and Jacobs Engineering Group, 1992, *Engineering Analysis of Remedial Action Alternatives: Phase I*, DOE/OR/21548-269, Rev. 0, prepared for U.S. Department of Energy, Oak Ridge Field Office, Oak Ridge, Tenn., Nov.

Monette, F.A., et al., 1996, *Supplemental Information Related to Risk Assessment of the Off-Site Transportation of Low-Level Waste for the U.S. Department of Energy Waste Management Programmatic Environmental Impact Statement*, ANL/EAD/TM-23, Argonne National Laboratory, Argonne, Ill.

Mueller, C.J., et al., 1996, *Analysis of Accident Sequences and Source Terms of Waste Treatment and Storage Operations and Related Facilities for the U.S. Department of Energy Waste Management Programmatic Environmental Impact Statement*, ANL/EAD/TM-29, Argonne National Laboratory, Argonne, Ill.

NRC. See U.S. Nuclear Regulatory Commission.

Oak Ridge National Laboratory, 1991, *Oak Ridge National Laboratory Waste Management Plan*, ORNL/TM-11433/R1, Oak Ridge National Laboratory, Oak Ridge, Tenn., Dec.

Oak Ridge Reservation, 1991, *Oak Ridge Reservation Environmental Report for 1990, Volume 1: Narrative, Summary, and Conclusions*, ES/ESH-18/V1, Oak Ridge National Laboratory, Oak Ridge, Tenn., Sept.

ORR. See Oak Ridge Reservation.

Pacific Northwest Laboratory, 1983, *Assessment of Power Reactor Waste Immobilization by Vitrification*, NP-3225, Pacific Northwest Laboratory, Richland, Wash., Aug.

Pacific Northwest Laboratory, 1992, *ReOpt, Version 2.0*, data base, PNL-7840, Pacific Northwest Laboratory, Richland, Wash., Oct.

Peterson, J., 1993, personal communication from Peterson (Oak Ridge National Laboratory, Oak Ridge, Tenn.), to S. Folga (Argonne National Laboratory, Argonne, Ill.), April 5.

PNL. See Pacific National Laboratory.

Robinson, S.M., 1991, *Evaluation of Alternative Flow Sheets for Upgrade of the Process Waste Treatment Plant*, ORNL/TM-10576, Oak Ridge National Laboratory, Oak Ridge, Tenn., April.

Robinson, S.M., and J.R. Parrot, Jr., 1989, *Pilot-Scale Demonstration of Process Wastewater Decontamination Using Chabazite Zeolites*, ORNL/TM-10836, Oak Ridge National Laboratory, Oak Ridge, Tenn., Dec.

Robinson, S.M., et al., 1990, *Design of Fixed-Bed Ion Exchange Columns for Wastewater Treatment*, CONF-900210-71, Oak Ridge National Laboratory, Oak Ridge, Tenn., March.

Ryan, J.P., and R.E. Stimson, 1984, *Technical Data Summary: F/H Effluent Treatment Facility*, E.I. du Pont de Nemours and Company Inc., Savannah River Laboratory, Aiken, S.C., Dec.

Sargent & Lundy Engineers, 1980, *Advanced Low-Level Radwaste Treatment Systems*, EPRI NP-1600, Electric Power Research Institute, Palo Alto, Calif., Oct.

Sargent & Lundy Engineers, 1983, *Low-Level Radwaste Solidification*, EPRI NP-2900, Electric Power Research Institute, Palo Alto, Calif., March.

Scott, C., 1993, personal communication from Scott (Oak Ridge National Laboratory, Oak Ridge, Tenn.) to S. Folga (Argonne National Laboratory, Argonne, Ill.), April 2.

Serne, R.J., et al., 1992, "Characterization of Grouted Low-Level Waste to Support Performance Assessment," *Waste Management* 12:271-287.

Treat, R.L., et al., 1983, *Incineration of a Typical LWR Combustible Waste and Analysis of the Resulting Ash*, NUREG/CR-3087, U.S. Nuclear Regulatory Commission, Washington, D.C., May.

Trigilio, G., 1981, *Volume Reduction Techniques in Low-Level Radioactive Waste Management*, NUREG/CR-2206, U.S. Nuclear Regulatory Commission, Washington, D.C., Sept.

U.S. Department of Energy, 1979, *Technology for Commercial Radioactive Waste Management*, DOE/ET-0028, Washington, D.C., May.

U.S. Department of Energy, 1988, *Environmental Assessment: Management Activities for Retrieved and Newly Generated Transuranic Waste, Savannah River Plant*, DOE/EA-0315, Washington, D.C.

U.S. Department of Energy, 1992a, *Environmental Assessment: Consolidated Incineration Facility, Savannah River Site*, DOE/EA-0400, Washington, D.C., Dec.

U.S. Department of Energy, 1992b, *Feasibility Study for Remedial Action at the Chemical Plant Area of the Weldon Spring Site*, DOE/OR/21548-148, Oak Ridge Field Office: Weldon Spring Site Remedial Action Project, Oak Ridge, Tenn., Nov.

U.S. Department of Energy, 1992c, *Integrated Data Base for 1992: U.S. Spent Fuel and Radioactive Waste Inventories, Projections, and Characteristics*, DOE/RW-0006, Rev. 8, prepared by Oak Ridge National Laboratory, Oak Ridge, Tenn., for U.S. Department of Energy, Washington, D.C., Oct.

U.S. Department of Energy, 1993a, *Disposal of Solid Low-Level and Mixed Low-Level Waste during 1990*, DOE/EH-0332P, prepared by G. Roles, Air, Water, and Radiation Division, Office of Environmental Guidance, Washington, D.C., Aug.

U.S. Department of Energy, 1993b, *Transportation and Disposal Configuration for DOE-Managed Low-Level and Mixed Low-Level Waste*, DOE/LLW-179, prepared by Idaho National Engineering Laboratory, EG&G Idaho, Inc., Idaho Falls, Idaho, June.

U.S. Department of Energy, 1995, *Integrated Data Base for 1994: U.S. Spent Fuel and Radioactive Waste Inventories, Projections, and Characteristics*, DOE/RW-0006, Rev. 11, Oak Ridge National Laboratory, Oak Ridge, Tenn., Sept.

U.S. Environmental Protection Agency, 1992, *Handbook: Vitrification Technologies for Treatment of Hazardous and Radioactive Waste*, EPA/625/R-92/002, Washington, D.C., May.

U.S. Nuclear Regulatory Commission, 1981, *Draft Environmental Impact Statement on 10 CFR 61 "Licensing Requirements for Land Disposal of Radioactive Waste,"* Vol. 3, NUREG-0782, Nuclear Regulatory Commission, Washington, D.C., Sept.

U.S. Nuclear Regulatory Commission, 1991, *Technical Position on Waste Form*, prepared by Low-Level Waste Management Branch, Division of Low Level Waste Management and Decommissioning (Rev. 1), Washington, D.C., Jan.

Waste Management Information System, 1992, Computer Data Base maintained by the Hazardous Waste Remedial Actions Program (HAZWRAP) of Martin Marietta Energy Systems, Oak Ridge, Tenn., Dec.

Westsik, J.H., Jr., 1984, *Characterization of Cement and Bitumen Waste Forms Containing Simulated Low-Level Waste Incinerator Ash*, NUREG/CR-3798, U.S. Nuclear Regulatory Commission, Washington, D.C., Aug.

Westinghouse Hanford Co., 1991, *Facility Effluent Monitoring Plan Determinations for the 200 Area Facilities*, WHC-EP-0440-Vol. 2, Westinghouse Hanford Co., Richland, Wash., Nov.

WHC. See Westinghouse Hanford Co.

APPENDIX A:
WASTE MANAGEMENT RADIOLOGICAL PROFILES

APPENDIX A:**WASTE MANAGEMENT RADIOLOGICAL PROFILES**

This appendix identifies the radiological characteristics of Waste Management low-level waste (LLW). The data in the following table were used as input to the WASTE_MGMT computational model and represent the waste feed (feed stock) to the various LLW treatment or disposal technologies.

The first column identifies the site of waste generation. The second column, "Treat Code," identifies the treatability category. The categories are as follows:

- (1) combustible;
- (2) noncombustible, noncompactible;
- (3) noncombustible, compactible;
- (4) surface-contaminated bulk metal/equipment;
- (5) activated bulk metal/equipment;
- (6) sludge/resin;
- (7) other (solid wastes that do not fit into the previous categories);
- (8) dilute/aqueous liquids;
- (9) organic liquids; and
- (10) remote-handled.

The third column identifies the radionuclide, and the fourth column gives the activity of that radionuclide in curies per year of waste generation.

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
AMES	- 01	Tl-208	2.83333E-08
AMES	- 01	Pb-212	7.49999E-08
AMES	- 01	Bi-212	7.49999E-08
AMES	- 01	Po-212	4.83333E-08
AMES	- 01	Po-216	7.49999E-08
AMES	- 01	Ra-224	7.49999E-08
AMES	- 01	Ra-228	4.48333E-07
AMES	- 01	Ac-228	4.48333E-07
AMES	- 01	Th-228	7.49999E-08
AMES	- 01	Th-231	4.31666E-07
AMES	- 01	Th-232	4.54999E-06
AMES	- 01	Th-234	5.53283E-04
AMES	- 01	Pa-234	5.66666E-08
AMES	- 01	Pa-234m	5.53283E-04
AMES	- 01	U-235	4.29999E-07
AMES	- 01	U-238	5.53283E-04
AMES	- 01	Pu-238	4.36666E-05
AMES	- 01	Pu-239	3.33333E-06
AMES	- 01	Pu-240	1.16666E-05
AMES	- 01	Pu-241	1.60666E-03
AMES	- 01	Am-241	6.66666E-08
AMES	- 01	Cm-242	9.33333E-07
AMES	- 01	Cm-244	3.33333E-07
AMES	- 02	Tl-208	4.22166E-07
AMES	- 02	Pb-212	1.11750E-06
AMES	- 02	Bi-212	1.11750E-06
AMES	- 02	Po-212	7.20166E-07
AMES	- 02	Po-216	1.11750E-06
AMES	- 02	Ra-224	1.11750E-06
AMES	- 02	Ra-228	6.68016E-06
AMES	- 02	Ac-228	6.68016E-06
AMES	- 02	Th-228	1.11750E-06
AMES	- 02	Th-231	6.43183E-06
AMES	- 02	Th-232	6.77950E-05
AMES	- 02	Th-234	8.24392E-03
AMES	- 02	Pa-234	8.44333E-07
AMES	- 02	Pa-234m	8.24392E-03
AMES	- 02	U-235	6.40700E-06
AMES	- 02	U-238	8.24392E-03
AMES	- 02	Pu-238	6.50633E-04
AMES	- 02	Pu-239	4.96666E-05
AMES	- 02	Pu-240	1.73833E-04
AMES	- 02	Pu-241	2.39393E-02
AMES	- 02	Am-241	9.93333E-07
AMES	- 02	Cm-242	1.39066E-05
AMES	- 02	Cm-244	4.96666E-06
ANL-E	- 02	H-3	1.33587E+02
ANL-E	- 02	C-14	7.91708E-02
ANL-E	- 02	Cr-51	2.87654E+00
ANL-E	- 02	Mn-54	1.43958E+01
ANL-E	- 02	Fe-55	2.04392E+01
ANL-E	- 02	Fe-59	1.84731E-01
ANL-E	- 02	Co-58	1.55834E+01
ANL-E	- 02	Co-60	8.15393E+01
ANL-E	- 02	Ni-59	2.63902E-01
ANL-E	- 02	Ni-63	3.77631E+01
ANL-E	- 02	Sr-90	3.33526E+01
ANL-E	- 02	Y-90	3.33526E+01
ANL-E	- 02	Zr-95	2.24317E-01
ANL-E	- 02	Tc-99	1.62299E-01
ANL-E	- 02	Ru-106	2.16354E+00
ANL-E	- 02	Rh-106	2.16354E+00
ANL-E	- 02	Sb-125	6.21360E-01
ANL-E	- 02	Te-125m	1.51712E-01
ANL-E	- 02	Cs-134	2.09625E+01

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
ANL-E	- 02	Cs-137	4.75635E+01
ANL-E	- 02	Ba-137m	4.50040E+01
ANL-E	- 02	Ce-144	7.24260E+00
ANL-E	- 02	Pr-144	7.24260E+00
ANL-E	- 02	Pr-144m	8.70696E-02
ANL-E	- 02	Pm-147	1.76777E+01
ANL-E	- 02	Sm-151	1.72820E-01
ANL-E	- 02	Eu-152	2.63847E-03
ANL-E	- 02	Eu-154	4.52498E-01
ANL-E	- 02	Eu-155	3.58832E-01
ANL-E	- 02	U-238	9.63245E-01
ANL-E	- 02	Pu-238	5.44844E-01
ANL-E	- 02	Pu-239	5.27694E-03
ANL-E	- 02	Pu-240	2.63847E-03
ANL-E	- 02	Pu-241	6.09487E-01
ANL-E	- 02	Am-241	7.91542E-03
ANL-W	- 01	H-3	1.22569E-05
ANL-W	- 01	Cr-51	2.00434E-03
ANL-W	- 01	Mn-54	3.81561E-03
ANL-W	- 01	Fe-55	1.42418E-02
ANL-W	- 01	Fe-59	1.28719E-04
ANL-W	- 01	Co-58	5.12119E-03
ANL-W	- 01	Co-60	4.02094E-02
ANL-W	- 01	Ni-59	1.83884E-04
ANL-W	- 01	Ni-63	2.62550E-02
ANL-W	- 01	Sr-90	1.02958E-02
ANL-W	- 01	Y-90	1.02958E-02
ANL-W	- 01	Zr-95	1.56302E-04
ANL-W	- 01	Tc-99	1.83853E-06
ANL-W	- 01	Ru-106	1.00506E-03
ANL-W	- 01	Rh-106	1.00506E-03
ANL-W	- 01	Sb-125	2.88650E-04
ANL-W	- 01	Te-125m	7.04773E-05
ANL-W	- 01	Cs-134	1.16869E-03
ANL-W	- 01	Cs-137	1.07861E-02
ANL-W	- 01	Ba-137m	1.02100E-02
ANL-W	- 01	Ce-144	3.36452E-03
ANL-W	- 01	Pr-144	3.36452E-03
ANL-W	- 01	Pr-144m	4.04478E-05
ANL-W	- 01	Pm-147	8.21214E-03
ANL-W	- 01	Sm-151	8.02829E-05
ANL-W	- 01	Eu-152	1.22569E-06
ANL-W	- 01	Eu-154	2.10206E-04
ANL-W	- 01	Eu-155	1.66694E-04
ANL-W	- 01	Pu-238	2.53105E-04
ANL-W	- 01	Pu-239	2.45138E-06
ANL-W	- 01	Pu-240	1.22569E-06
ANL-W	- 01	Pu-241	2.83135E-04
ANL-W	- 01	Am-241	3.67707E-06
ANL-W	- 02	Cr-51	3.58828E+03
ANL-W	- 02	Mn-54	6.83090E+03
ANL-W	- 02	Fe-55	2.54965E+04
ANL-W	- 02	Fe-59	2.30440E+02
ANL-W	- 02	Co-58	9.16822E+03
ANL-W	- 02	Co-60	7.18808E+04
ANL-W	- 02	Ni-59	3.29200E+02
ANL-W	- 02	Ni-63	4.67957E+04
ANL-W	- 02	Zr-95	2.79820E+02
ANL-W	- 03	H-3	2.54964E-05
ANL-W	- 03	Cr-51	1.85313E-03
ANL-W	- 03	Mn-54	3.52774E-03
ANL-W	- 03	Fe-55	1.31674E-02
ANL-W	- 03	Fe-59	1.19008E-04
ANL-W	- 03	Co-58	4.73483E-03

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
ANL-W	- 03	Co-60	3.72432E-02
ANL-W	- 03	Ni-59	1.70011E-04
ANL-W	- 03	Ni-63	2.44081E-02
ANL-W	- 03	Sr-90	2.14170E-02
ANL-W	- 03	Y-90	2.14170E-02
ANL-W	- 03	Zr-95	1.44510E-04
ANL-W	- 03	Tc-99	3.82446E-06
ANL-W	- 03	Ru-106	2.09070E-03
ANL-W	- 03	Rh-106	2.09070E-03
ANL-W	- 03	Sb-125	6.00441E-04
ANL-W	- 03	Te-125m	1.46604E-04
ANL-W	- 03	Cs-134	2.43108E-03
ANL-W	- 03	Cs-137	2.24368E-02
ANL-W	- 03	Ba-137m	2.12385E-02
ANL-W	- 03	Ce-144	6.99877E-03
ANL-W	- 03	Pr-144	6.99877E-03
ANL-W	- 03	Pr-144m	8.41382E-05
ANL-W	- 03	Pm-147	1.70826E-02
ANL-W	- 03	Sm-151	1.67001E-04
ANL-W	- 03	Eu-152	2.54964E-06
ANL-W	- 03	Eu-154	4.37263E-04
ANL-W	- 03	Eu-155	3.46751E-04
ANL-W	- 03	Pu-238	5.28785E-04
ANL-W	- 03	Pu-239	5.27361E-06
ANL-W	- 03	Pu-240	3.15980E-06
ANL-W	- 03	Pu-241	6.72995E-04
ANL-W	- 03	Am-241	7.65241E-06
ANL-W	- 03	Cm-242	4.88129E-08
ANL-W	- 03	Cm-244	1.74332E-08
ANL-W	- 05	H-3	1.71190E-06
ANL-W	- 05	Cr-51	1.24693E-04
ANL-W	- 05	Mn-54	2.37375E-04
ANL-W	- 05	Fe-55	8.86012E-04
ANL-W	- 05	Fe-59	8.00786E-06
ANL-W	- 05	Co-58	3.18598E-04
ANL-W	- 05	Co-60	2.50601E-03
ANL-W	- 05	Ni-59	1.14398E-05
ANL-W	- 05	Ni-63	1.64234E-03
ANL-W	- 05	Sr-90	1.43800E-03
ANL-W	- 05	Y-90	1.43800E-03
ANL-W	- 05	Zr-95	9.72383E-06
ANL-W	- 05	Tc-99	2.56785E-07
ANL-W	- 05	Ru-106	1.40376E-04
ANL-W	- 05	Rh-106	1.40376E-04
ANL-W	- 05	Sb-125	4.03153E-05
ANL-W	- 05	Te-125m	9.84345E-06
ANL-W	- 05	Cs-134	1.63230E-04
ANL-W	- 05	Cs-137	2.00506E-01
ANL-W	- 05	Ba-137m	2.00426E-01
ANL-W	- 05	Ce-144	4.69917E-04
ANL-W	- 05	Pr-144	4.69917E-04
ANL-W	- 05	Pr-144m	5.64928E-06
ANL-W	- 05	Pm-147	1.14697E-03
ANL-W	- 05	Sm-151	1.12129E-05
ANL-W	- 05	Eu-152	1.71190E-07
ANL-W	- 05	Eu-154	2.93591E-05
ANL-W	- 05	Eu-155	2.32819E-05
ANL-W	- 05	Pu-238	3.53508E-05
ANL-W	- 05	Pu-239	3.42380E-07
ANL-W	- 05	Pu-240	1.71190E-07
ANL-W	- 05	Pu-241	3.95450E-05
ANL-W	- 05	Am-241	5.13571E-07
ANL-W	- 08	H-3	8.41000E-02

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
BAPL	- 02	H-3	2.51947E-03
BAPL	- 02	Co-60	1.19674E-02
BAPL	- 02	Ni-63	2.38090E-02
BAPL	- 02	Sr-90	2.11635E+00
BAPL	- 02	Y-90	2.11635E+00
BAPL	- 02	Tc-99	3.77920E-04
BAPL	- 02	Ru-106	2.06596E-01
BAPL	- 02	Rh-106	2.06596E-01
BAPL	- 02	Sb-125	5.93335E-02
BAPL	- 02	Te-125m	1.44869E-02
BAPL	- 02	Cs-134	2.40231E-01
BAPL	- 02	Cs-137	2.21713E+00
BAPL	- 02	Ba-137m	2.09871E+00
BAPL	- 02	Ce-144	6.91594E-01
BAPL	- 02	Pr-144	6.91594E-01
BAPL	- 02	Pr-144m	8.31425E-03
BAPL	- 02	Pm-147	1.68804E+00
BAPL	- 02	Sm-151	1.65025E-02
BAPL	- 02	Eu-152	2.51947E-04
BAPL	- 02	Eu-154	4.32089E-02
BAPL	- 02	Eu-155	3.42648E-02
BAPL	- 02	Tl-208	3.80800E-06
BAPL	- 02	Pb-212	1.00800E-05
BAPL	- 02	Bi-212	1.00800E-05
BAPL	- 02	Po-212	6.49600E-06
BAPL	- 02	Po-216	1.00800E-05
BAPL	- 02	Ra-224	1.00800E-05
BAPL	- 02	Ra-228	6.02560E-05
BAPL	- 02	Ac-228	6.02560E-05
BAPL	- 02	Th-228	1.00800E-05
BAPL	- 02	Th-231	5.80160E-05
BAPL	- 02	Th-232	6.11520E-04
BAPL	- 02	Th-234	7.43612E-02
BAPL	- 02	Pa-234	7.61600E-06
BAPL	- 02	Pa-234m	7.43612E-02
BAPL	- 02	U-235	5.77920E-05
BAPL	- 02	U-238	7.43612E-02
BAPL	- 02	Pu-238	5.20270E-02
BAPL	- 02	Pu-239	5.03894E-04
BAPL	- 02	Pu-240	2.51947E-04
BAPL	- 02	Pu-241	5.81997E-02
BAPL	- 02	Am-241	7.55841E-04
BAPL	- 05	Cr-51	4.75240E+03
BAPL	- 05	Mn-54	9.04700E+03
BAPL	- 05	Fe-55	3.37682E+04
BAPL	- 05	Fe-59	3.05200E+02
BAPL	- 05	Co-58	1.21426E+04
BAPL	- 05	Co-60	9.52006E+04
BAPL	- 05	Ni-59	4.36000E+02
BAPL	- 05	Ni-63	6.19774E+04
BAPL	- 05	Zr-95	3.70600E+02
BAPL	- 05	Tl-208	1.36000E-08
BAPL	- 05	Pb-212	3.60000E-08
BAPL	- 05	Bi-212	3.60000E-08
BAPL	- 05	Po-212	2.32000E-08
BAPL	- 05	Po-216	3.60000E-08
BAPL	- 05	Ra-224	3.60000E-08
BAPL	- 05	Ra-228	2.15200E-07
BAPL	- 05	Ac-228	2.15200E-07
BAPL	- 05	Th-228	3.60000E-08
BAPL	- 05	Th-231	2.07200E-07
BAPL	- 05	Th-232	2.18400E-06
BAPL	- 05	Th-234	2.65576E-04
BAPL	- 05	Pa-234	2.72000E-08
BAPL	- 05	Pa-234m	2.65576E-04

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
BAPL	- 05	U-235	2.06400E-07
BAPL	- 05	U-238	2.65576E-04
BNL	- 01	H-3	3.27215E-02
BNL	- 01	C-14	1.93924E-05
BNL	- 01	Cr-51	7.04592E-04
BNL	- 01	Mn-54	3.52619E-03
BNL	- 01	Fe-55	5.00648E-03
BNL	- 01	Fe-59	4.52490E-05
BNL	- 01	Co-58	3.81708E-03
BNL	- 01	Co-60	1.99726E-02
BNL	- 01	Ni-59	6.46415E-05
BNL	- 01	Ni-63	9.24986E-03
BNL	- 01	Sr-90	8.16955E-03
BNL	- 01	Y-90	8.16955E-03
BNL	- 01	Zr-95	5.49453E-05
BNL	- 01	Tc-99	3.97543E-05
BNL	- 01	Ru-106	5.29949E-04
BNL	- 01	Rh-106	5.29949E-04
BNL	- 01	Sb-125	1.52199E-04
BNL	- 01	Te-125m	3.71611E-05
BNL	- 01	Cs-134	5.13467E-03
BNL	- 01	Cs-137	1.16504E-02
BNL	- 01	Ba-137m	1.10235E-02
BNL	- 01	Ce-144	1.77404E-03
BNL	- 01	Pr-144	1.77404E-03
BNL	- 01	Pr-144m	2.13272E-05
BNL	- 01	Pm-147	4.33007E-03
BNL	- 01	Sm-151	4.23313E-05
BNL	- 01	Eu-152	6.46279E-07
BNL	- 01	Eu-154	1.10837E-04
BNL	- 01	Eu-155	8.78940E-05
BNL	- 01	U-238	2.35941E-04
BNL	- 01	Pu-238	1.33457E-04
BNL	- 01	Pu-239	1.29256E-06
BNL	- 01	Pu-240	6.46279E-07
BNL	- 01	Pu-241	1.49291E-04
BNL	- 01	Am-241	1.93884E-06
BNL	- 02	H-3	4.93183E-04
BNL	- 02	C-14	2.92286E-07
BNL	- 02	Cr-51	1.06197E-05
BNL	- 02	Mn-54	5.31473E-05
BNL	- 02	Fe-55	7.54584E-05
BNL	- 02	Fe-59	6.82000E-07
BNL	- 02	Co-58	5.75316E-05
BNL	- 02	Co-60	3.01030E-04
BNL	- 02	Ni-59	9.74286E-07
BNL	- 02	Ni-63	1.39415E-04
BNL	- 02	Sr-90	1.23133E-04
BNL	- 02	Y-90	1.23133E-04
BNL	- 02	Zr-95	8.28143E-07
BNL	- 02	Tc-99	5.99183E-07
BNL	- 02	Ru-106	7.98747E-06
BNL	- 02	Rh-106	7.98747E-06
BNL	- 02	Sb-125	2.29396E-06
BNL	- 02	Te-125m	5.60097E-07
BNL	- 02	Cs-134	7.73904E-05
BNL	- 02	Cs-137	1.75597E-04
BNL	- 02	Ba-137m	1.66147E-04
BNL	- 02	Ce-144	2.67385E-05
BNL	- 02	Pr-144	2.67385E-05
BNL	- 02	Pr-144m	3.21447E-07
BNL	- 02	Pm-147	6.52634E-05
BNL	- 02	Sm-151	6.38023E-07
BNL	- 02	Eu-152	9.74081E-09

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
BNL	- 02	Eu-154	1.67055E-06
BNL	- 02	Eu-155	1.32475E-06
BNL	- 02	U-238	3.55614E-06
BNL	- 02	Pu-238	2.01148E-06
BNL	- 02	Pu-239	1.94816E-08
BNL	- 02	Pu-240	9.74081E-09
BNL	- 02	Pu-241	2.25013E-06
BNL	- 02	Am-241	2.92224E-08
BNL	- 03	H-3	1.35394E-01
BNL	- 03	C-14	8.02413E-05
BNL	- 03	Cr-51	2.91543E-03
BNL	- 03	Mn-54	1.45905E-02
BNL	- 03	Fe-55	2.07156E-02
BNL	- 03	Fe-59	1.87230E-04
BNL	- 03	Co-58	1.57942E-02
BNL	- 03	Co-60	8.26418E-02
BNL	- 03	Ni-59	2.67471E-04
BNL	- 03	Ni-63	3.82737E-02
BNL	- 03	Sr-90	3.38036E-02
BNL	- 03	Y-90	3.38036E-02
BNL	- 03	Zr-95	2.27350E-04
BNL	- 03	Tc-99	1.64494E-04
BNL	- 03	Ru-106	2.19280E-03
BNL	- 03	Rh-106	2.19280E-03
BNL	- 03	Sb-125	6.29762E-04
BNL	- 03	Te-125m	1.53764E-04
BNL	- 03	Cs-134	2.12460E-02
BNL	- 03	Cs-137	4.82067E-02
BNL	- 03	Ba-137m	4.56125E-02
BNL	- 03	Ce-144	7.34054E-03
BNL	- 03	Pr-144	7.34054E-03
BNL	- 03	Pr-144m	8.82469E-05
BNL	- 03	Pm-147	1.79168E-02
BNL	- 03	Sm-151	1.75157E-04
BNL	- 03	Eu-152	2.67415E-06
BNL	- 03	Eu-154	4.58617E-04
BNL	- 03	Eu-155	3.63684E-04
BNL	- 03	U-238	9.76269E-04
BNL	- 03	Pu-238	5.52212E-04
BNL	- 03	Pu-239	5.34830E-06
BNL	- 03	Pu-240	2.67415E-06
BNL	- 03	Pu-241	6.17728E-04
BNL	- 03	Am-241	8.02245E-06
BNL	- 04	H-3	3.06279E+02
BNL	- 04	C-14	1.81517E-01
BNL	- 04	Cr-51	6.59510E+00
BNL	- 04	Mn-54	3.30058E+01
BNL	- 04	Fe-55	4.68615E+01
BNL	- 04	Fe-59	4.23539E-01
BNL	- 04	Co-58	3.57285E+01
BNL	- 04	Co-60	1.86947E+02
BNL	- 04	Ni-59	6.05055E-01
BNL	- 04	Ni-63	8.65802E+01
BNL	- 04	Sr-90	7.64683E+01
BNL	- 04	Y-90	7.64683E+01
BNL	- 04	Zr-95	5.14297E-01
BNL	- 04	Tc-99	3.72107E-01
BNL	- 04	Ru-106	4.96041E+00
BNL	- 04	Rh-106	4.96041E+00
BNL	- 04	Sb-125	1.42461E+00
BNL	- 04	Te-125m	3.47834E-01
BNL	- 04	Cs-134	4.80613E+01
BNL	- 04	Cs-137	1.09050E+02
BNL	- 04	Ba-137m	1.03182E+02

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
BNL	- 04	Ce-144	1.66053E+01
BNL	- 04	Pr-144	1.66053E+01
BNL	- 04	Pr-144m	1.99626E-01
BNL	- 04	Pm-147	4.05302E+01
BNL	- 04	Sm-151	3.96228E-01
BNL	- 04	Eu-152	6.04928E-03
BNL	- 04	Eu-154	1.03745E+00
BNL	- 04	Eu-155	8.22702E-01
BNL	- 04	U-238	2.20845E+00
BNL	- 04	Pu-238	1.24918E+00
BNL	- 04	Pu-239	1.20986E-02
BNL	- 04	Pu-240	6.04928E-03
BNL	- 04	Pu-241	1.39738E+00
BNL	- 04	Am-241	1.81478E-02
BNL	- 05	H-3	6.18387E-02
BNL	- 05	C-14	3.66488E-05
BNL	- 05	Cr-51	1.33157E-03
BNL	- 05	Mn-54	6.66397E-03
BNL	- 05	Fe-55	9.46149E-03
BNL	- 05	Fe-59	8.55138E-05
BNL	- 05	Co-58	7.21370E-03
BNL	- 05	Co-60	3.77452E-02
BNL	- 05	Ni-59	1.22163E-04
BNL	- 05	Ni-63	1.74808E-02
BNL	- 05	Sr-90	1.54392E-02
BNL	- 05	Y-90	1.54392E-02
BNL	- 05	Zr-95	1.03838E-04
BNL	- 05	Tc-99	7.51296E-05
BNL	- 05	Ru-106	1.00152E-03
BNL	- 05	Rh-106	1.00152E-03
BNL	- 05	Sb-125	2.87632E-04
BNL	- 05	Te-125m	7.02287E-05
BNL	- 05	Cs-134	9.70374E-03
BNL	- 05	Cs-137	2.20175E-02
BNL	- 05	Ba-137m	2.08327E-02
BNL	- 05	Ce-144	3.35266E-03
BNL	- 05	Pr-144	3.35266E-03
BNL	- 05	Pr-144m	4.03052E-05
BNL	- 05	Pm-147	8.18317E-03
BNL	- 05	Sm-151	7.99997E-05
BNL	- 05	Eu-152	1.22137E-06
BNL	- 05	Eu-154	2.09465E-04
BNL	- 05	Eu-155	1.66106E-04
BNL	- 05	U-238	4.45893E-04
BNL	- 05	Pu-238	2.52213E-04
BNL	- 05	Pu-239	2.44274E-06
BNL	- 05	Pu-240	1.22137E-06
BNL	- 05	Pu-241	2.82136E-04
BNL	- 05	Am-241	3.66411E-06
BNL	- 06	H-3	4.10331E-02
BNL	- 06	C-14	2.43183E-05
BNL	- 06	Cr-51	8.83565E-04
BNL	- 06	Mn-54	4.42188E-03
BNL	- 06	Fe-55	6.27817E-03
BNL	- 06	Fe-59	5.67427E-05
BNL	- 06	Co-58	4.78665E-03
BNL	- 06	Co-60	2.50458E-02
BNL	- 06	Ni-59	8.10610E-05
BNL	- 06	Ni-63	1.15994E-02
BNL	- 06	Sr-90	1.02447E-02
BNL	- 06	Y-90	1.02447E-02
BNL	- 06	Zr-95	6.89018E-05
BNL	- 06	Tc-99	4.98523E-05
BNL	- 06	Ru-106	6.64561E-04

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
BNL	- 06	Rh-106	6.64561E-04
BNL	- 06	Sb-125	1.90859E-04
BNL	- 06	Te-125m	4.66003E-05
BNL	- 06	Cs-134	6.43892E-03
BNL	- 06	Cs-137	1.46097E-02
BNL	- 06	Ba-137m	1.38235E-02
BNL	- 06	Ce-144	2.22466E-03
BNL	- 06	Pr-144	2.22466E-03
BNL	- 06	Pr-144m	2.67445E-05
BNL	- 06	Pm-147	5.42995E-03
BNL	- 06	Sm-151	5.30838E-05
BNL	- 06	Eu-152	8.10440E-07
BNL	- 06	Eu-154	1.38990E-04
BNL	- 06	Eu-155	1.10220E-04
BNL	- 06	U-238	2.95873E-04
BNL	- 06	Pu-238	1.67356E-04
BNL	- 06	Pu-239	1.62088E-06
BNL	- 06	Pu-240	8.10440E-07
BNL	- 06	Pu-241	1.87212E-04
BNL	- 06	Am-241	2.43132E-06
BNL	- 07	H-3	2.72914E-03
BNL	- 07	C-14	1.61743E-06
BNL	- 07	Cr-51	5.87666E-05
BNL	- 07	Mn-54	2.94102E-04
BNL	- 07	Fe-55	4.17566E-04
BNL	- 07	Fe-59	3.77400E-06
BNL	- 07	Co-58	3.18364E-04
BNL	- 07	Co-60	1.66582E-03
BNL	- 07	Ni-59	5.39143E-06
BNL	- 07	Ni-63	7.71485E-04
BNL	- 07	Sr-90	6.81381E-04
BNL	- 07	Y-90	6.81381E-04
BNL	- 07	Zr-95	4.58271E-06
BNL	- 07	Tc-99	3.31571E-06
BNL	- 07	Ru-106	4.42004E-05
BNL	- 07	Rh-106	4.42004E-05
BNL	- 07	Sb-125	1.26941E-05
BNL	- 07	Te-125m	3.09942E-06
BNL	- 07	Cs-134	4.28257E-04
BNL	- 07	Cs-137	9.71705E-04
BNL	- 07	Ba-137m	9.19414E-04
BNL	- 07	Ce-144	1.47964E-04
BNL	- 07	Pr-144	1.47964E-04
BNL	- 07	Pr-144m	1.77880E-06
BNL	- 07	Pm-147	3.61150E-04
BNL	- 07	Sm-151	3.53064E-06
BNL	- 07	Eu-152	5.39030E-08
BNL	- 07	Eu-154	9.24436E-06
BNL	- 07	Eu-155	7.33080E-06
BNL	- 07	U-238	1.96787E-05
BNL	- 07	Pu-238	1.11310E-05
BNL	- 07	Pu-239	1.07806E-07
BNL	- 07	Pu-240	5.39030E-08
BNL	- 07	Pu-241	1.24516E-05
BNL	- 07	Am-241	1.61709E-07
FNAL	- 02	H-3	7.22036E-03
Fermi	- 02	Cr-51	7.38835E-04
Fermi	- 02	Mn-54	1.40649E-03
Fermi	- 02	Fe-55	5.24979E-03
Fermi	- 02	Fe-59	4.74481E-05
Fermi	- 02	Co-58	1.88775E-03
Fermi	- 02	Co-60	1.48004E-02
Fermi	- 02	Ni-59	6.77830E-05
Fermi	- 02	Ni-63	9.63535E-03

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
Fermi	- 02	Zr-95	5.76155E-05
Fermi	- 02	Tl-208	2.50502E-08
Fermi	- 02	Pb-212	6.63095E-08
Fermi	- 02	Bi-212	6.63095E-08
Fermi	- 02	Po-212	4.27327E-08
Fermi	- 02	Po-216	6.63095E-08
Fermi	- 02	Ra-224	6.63095E-08
Fermi	- 02	Ra-228	3.96383E-07
Fermi	- 02	Ac-228	3.96383E-07
Fermi	- 02	Th-228	6.63095E-08
Fermi	- 02	Th-231	3.81648E-07
Fermi	- 02	Th-232	4.02277E-06
Fermi	- 02	Th-234	4.89172E-04
Fermi	- 02	Pa-234	5.01005E-08
Fermi	- 02	Pa-234m	4.89172E-04
Fermi	- 02	U-235	3.80174E-07
Fermi	- 02	U-238	4.89172E-04
Fermi	- 03	H-3	8.44256E-02
Fermi	- 03	Cr-51	8.63898E-03
Fermi	- 03	Mn-54	1.64457E-02
Fermi	- 03	Fe-55	6.13843E-02
Fermi	- 03	Fe-59	5.54797E-04
Fermi	- 03	Co-58	2.20730E-02
Fermi	- 03	Co-60	1.73057E-01
Fermi	- 03	Ni-59	7.92567E-04
Fermi	- 03	Ni-63	1.12663E-01
Fermi	- 03	Zr-95	6.73682E-04
Fermi	- 03	Tl-208	2.92905E-07
Fermi	- 03	Pb-212	7.75337E-07
Fermi	- 03	Bi-212	7.75337E-07
Fermi	- 03	Po-212	4.99662E-07
Fermi	- 03	Po-216	7.75337E-07
Fermi	- 03	Ra-224	7.75337E-07
Fermi	- 03	Ra-228	4.63479E-06
Fermi	- 03	Ac-228	4.63479E-06
Fermi	- 03	Th-228	7.75337E-07
Fermi	- 03	Th-231	4.46250E-06
Fermi	- 03	Th-232	4.70371E-05
Fermi	- 03	Th-234	5.71975E-03
Fermi	- 03	Pa-234	5.85810E-07
Fermi	- 03	Pa-234m	5.71975E-03
Fermi	- 03	U-235	4.44527E-06
Fermi	- 03	U-238	5.71975E-03
Fermi	- 05	Cr-51	3.35720E-02
Fermi	- 05	Mn-54	6.39100E-02
Fermi	- 05	Fe-55	2.38546E-01
Fermi	- 05	Fe-59	2.15600E-03
Fermi	- 05	Co-58	8.57780E-02
Fermi	- 05	Co-60	6.72518E-01
Fermi	- 05	Ni-59	3.08000E-03
Fermi	- 05	Ni-63	4.37822E-01
Fermi	- 05	Zr-95	2.61800E-03
Fermi	- 06	H-3	1.75648E-02
Fermi	- 06	Cr-51	1.79734E-03
Fermi	- 06	Mn-54	3.42156E-03
Fermi	- 06	Fe-55	1.27710E-02
Fermi	- 06	Fe-59	1.15426E-04
Fermi	- 06	Co-58	4.59231E-03
Fermi	- 06	Co-60	3.60047E-02
Fermi	- 06	Ni-59	1.64894E-04
Fermi	- 06	Ni-63	2.34397E-02
Fermi	- 06	Zr-95	1.40160E-04
Fermi	- 06	Tl-208	6.09392E-08
Fermi	- 06	Pb-212	1.61309E-07

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
Fermi	- 06	Bi-212	1.61309E-07
Fermi	- 06	Po-212	1.03955E-07
Fermi	- 06	Po-216	1.61309E-07
Fermi	- 06	Ra-224	1.61309E-07
Fermi	- 06	Ra-228	9.64274E-07
Fermi	- 06	Ac-228	9.64274E-07
Fermi	- 06	Th-228	1.61309E-07
Fermi	- 06	Th-231	9.28427E-07
Fermi	- 06	Th-232	9.78612E-06
Fermi	- 06	Th-234	1.19000E-03
Fermi	- 06	Pa-234	1.21878E-07
Fermi	- 06	Pa-234m	1.19000E-03
Fermi	- 06	U-235	9.24842E-07
Fermi	- 06	U-238	1.19000E-03
Fermi	- 08	H-3	1.79970E-02
Fermi	- 09	H-3	7.38018E-02
HANF	- 01	H-3	9.79821E-03
HANF	- 01	Cr-51	2.49888E-02
HANF	- 01	Mn-54	4.75704E-02
HANF	- 01	Fe-55	1.77558E-01
HANF	- 01	Fe-59	1.60478E-03
HANF	- 01	Co-58	6.38476E-02
HANF	- 01	Co-60	5.05397E-01
HANF	- 01	Ni-59	2.29255E-03
HANF	- 01	Ni-63	3.35473E-01
HANF	- 01	Sr-90	8.52166E-01
HANF	- 01	Y-90	8.52166E-01
HANF	- 01	Zr-95	1.94867E-03
HANF	- 01	Tc-99	1.52172E-04
HANF	- 01	Ru-106	8.31876E-02
HANF	- 01	Rh-106	8.31876E-02
HANF	- 01	Sb-125	2.38910E-02
HANF	- 01	Te-125m	5.83327E-03
Hanford	- 01	Cs-134	9.67309E-02
Hanford	- 01	Cs-137	8.92745E-01
Hanford	- 01	Ba-137m	8.45064E-01
Hanford	- 01	Ce-144	2.78475E-01
Hanford	- 01	Pr-144	2.78475E-01
Hanford	- 01	Pr-144m	3.34779E-03
Hanford	- 01	Pm-147	6.79703E-01
Hanford	- 01	Sm-151	6.64486E-03
Hanford	- 01	Eu-152	1.01448E-04
Hanford	- 01	Eu-154	1.73983E-02
Hanford	- 01	Eu-155	1.37969E-02
Hanford	- 01	Tl-208	1.19458E-07
Hanford	- 01	Pb-212	3.16214E-07
Hanford	- 01	Bi-212	3.16214E-07
Hanford	- 01	Po-212	2.03782E-07
Hanford	- 01	Po-216	3.16214E-07
Hanford	- 01	Ra-224	3.16214E-07
Hanford	- 01	Ra-228	1.89025E-06
Hanford	- 01	Ac-228	1.89025E-06
Hanford	- 01	Th-228	3.16214E-07
Hanford	- 01	Th-231	1.81998E-06
Hanford	- 01	Th-232	1.91836E-05
Hanford	- 01	Th-234	2.33274E-03
Hanford	- 01	Pa-234	2.38917E-07
Hanford	- 01	Pa-234m	2.33274E-03
Hanford	- 01	U-235	1.81296E-06
Hanford	- 01	U-238	2.33274E-03
Hanford	- 01	Pu-238	2.09490E-02
Hanford	- 01	Pu-239	2.02896E-04
Hanford	- 01	Pu-240	1.01448E-04
Hanford	- 01	Pu-241	2.34345E-02

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
Hanford	- 01	Am-241	3.04345E-04
Hanford	- 02	H-3	2.31312E+00
Hanford	- 02	Cr-51	5.89926E+00
Hanford	- 02	Mn-54	1.12302E+01
Hanford	- 02	Fe-55	4.19172E+01
Hanford	- 02	Fe-59	3.78851E-01
Hanford	- 02	Co-58	1.50728E+01
Hanford	- 02	Co-60	1.19312E+02
Hanford	- 02	Ni-59	5.41217E-01
Hanford	- 02	Ni-63	7.91972E+01
Hanford	- 02	Sr-90	2.01176E+02
Hanford	- 02	Y-90	2.01176E+02
Hanford	- 02	Zr-95	4.60034E-01
Hanford	- 02	Tc-99	3.59242E-02
Hanford	- 02	Ru-106	1.96386E+01
Hanford	- 02	Rh-106	1.96386E+01
Hanford	- 02	Sb-125	5.64011E+00
Hanford	- 02	Te-125m	1.37709E+00
Hanford	- 02	Cs-134	2.28358E+01
Hanford	- 02	Cs-137	2.10755E+02
Hanford	- 02	Ba-137m	1.99499E+02
Hanford	- 02	Ce-144	6.57414E+01
Hanford	- 02	Pr-144	6.57414E+01
Hanford	- 02	Pr-144m	7.90334E-01
Hanford	- 02	Pm-147	1.60461E+02
Hanford	- 02	Sm-151	1.56869E+00
Hanford	- 02	Bu-152	2.39495E-02
Hanford	- 02	Eu-154	4.10734E+00
Hanford	- 02	Eu-155	3.25713E+00
Hanford	- 02	Tl-208	2.82013E-05
Hanford	- 02	Pb-212	7.46506E-05
Hanford	- 02	Bi-212	7.46506E-05
Hanford	- 02	Po-212	4.81081E-05
Hanford	- 02	Po-216	7.46506E-05
Hanford	- 02	Ra-224	7.46506E-05
Hanford	- 02	Ra-228	4.46244E-04
Hanford	- 02	Ac-228	4.46244E-04
Hanford	- 02	Th-228	7.46506E-05
Hanford	- 02	Th-231	4.29655E-04
Hanford	- 02	Th-232	4.52880E-03
Hanford	- 02	Th-234	5.50705E-01
Hanford	- 02	Pa-234	5.64026E-05
Hanford	- 02	Pa-234m	5.50705E-01
Hanford	- 02	U-235	4.27996E-04
Hanford	- 02	U-238	5.50705E-01
Hanford	- 02	Pu-238	4.94557E+00
Hanford	- 02	Pu-239	4.78990E-02
Hanford	- 02	Pu-240	2.39495E-02
Hanford	- 02	Pu-241	5.53234E+00
Hanford	- 02	Am-241	7.18485E-02
Hanford	- 03	H-3	1.22022E+01
Hanford	- 03	Cr-51	3.11200E+01
Hanford	- 03	Mn-54	5.92422E+01
Hanford	- 03	Fe-55	2.21123E+02
Hanford	- 03	Fe-59	1.99853E+00
Hanford	- 03	Co-58	7.95131E+01
Hanford	- 03	Co-60	6.29401E+02
Hanford	- 03	Ni-59	2.85505E+00
Hanford	- 03	Ni-63	4.17784E+02
Hanford	- 03	Sr-90	1.06125E+03
Hanford	- 03	Y-90	1.06125E+03
Hanford	- 03	Zr-95	2.42679E+00
Hanford	- 03	Tc-99	1.89509E-01

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
Hanford	- 03	Ru-106	1.03598E+02
Hanford	- 03	Rh-106	1.03598E+02
Hanford	- 03	Sb-125	2.97529E+01
Hanford	- 03	Te-125m	7.26452E+00
Hanford	- 03	Cs-134	1.20464E+02
Hanford	- 03	Cs-137	1.11178E+03
Hanford	- 03	Ba-137m	1.05240E+03
Hanford	- 03	Ce-144	3.46801E+02
Hanford	- 03	Pr-144	3.46801E+02
Hanford	- 03	Pr-144m	4.16920E+00
Hanford	- 03	Pm-147	8.46474E+02
Hanford	- 03	Sm-151	8.27523E+00
Hanford	- 03	Eu-152	1.26339E-01
Hanford	- 03	Eu-154	2.16672E+01
Hanford	- 03	Eu-155	1.71821E+01
Hanford	- 03	Tl-208	1.48768E-04
Hanford	- 03	Pb-212	3.93800E-04
Hanford	- 03	Bi-212	3.93800E-04
Hanford	- 03	Po-212	2.53782E-04
Hanford	- 03	Po-216	3.93800E-04
Hanford	- 03	Ra-224	3.93800E-04
Hanford	- 03	Ra-228	2.35404E-03
Hanford	- 03	Ac-228	2.35404E-03
Hanford	- 03	Th-228	3.93800E-04
Hanford	- 03	Th-231	2.26653E-03
Hanford	- 03	Th-232	2.38905E-02
Hanford	- 03	Th-234	2.90510E+00
Hanford	- 03	Pa-234	2.97537E-04
Hanford	- 03	Pa-234m	2.90510E+00
Hanford	- 03	U-235	2.25778E-03
Hanford	- 03	U-238	2.90510E+00
Hanford	- 03	Pu-238	2.60891E+01
Hanford	- 03	Pu-239	2.52679E-01
Hanford	- 03	Pu-240	1.26339E-01
Hanford	- 03	Pu-241	2.91844E+01
Hanford	- 03	Am-241	3.79018E-01
Hanford	- 04	H-3	7.57678E+00
Hanford	- 04	Cr-51	1.93234E+01
Hanford	- 04	Mn-54	3.67854E+01
Hanford	- 04	Fe-55	1.37302E+02
Hanford	- 04	Fe-59	1.24095E+00
Hanford	- 04	Co-58	4.93722E+01
Hanford	- 04	Co-60	3.90815E+02
Hanford	- 04	Ni-59	1.77279E+00
Hanford	- 04	Ni-63	2.59415E+02
Hanford	- 04	Sr-90	6.58965E+02
Hanford	- 04	Y-90	6.58965E+02
Hanford	- 04	Zr-95	1.50687E+00
Hanford	- 04	Tc-99	1.17672E-01
Hanford	- 04	Ru-106	6.43275E+01
Hanford	- 04	Rh-106	6.43275E+01
Hanford	- 04	Sb-125	1.84745E+01
Hanford	- 04	Te-125m	4.51077E+00
Hanford	- 04	Cs-134	7.48003E+01
Hanford	- 04	Cs-137	6.90344E+02
Hanford	- 04	Ba-137m	6.53473E+02
Hanford	- 04	Ce-144	2.15340E+02
Hanford	- 04	Pr-144	2.15340E+02
Hanford	- 04	Pr-144m	2.58879E+00
Hanford	- 04	Pm-147	5.25603E+02
Hanford	- 04	Sm-151	5.13835E+00
Hanford	- 04	Eu-152	7.84482E-02
Hanford	- 04	Eu-154	1.34538E+01
Hanford	- 04	Eu-155	1.06689E+01
Hanford	- 04	Tl-208	9.23753E-05
Hanford	- 04	Pb-212	2.44522E-04

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
Hanford	- 04	Bi-212	2.44522E-04
Hanford	- 04	Po-212	1.57581E-04
Hanford	- 04	Po-216	2.44522E-04
Hanford	- 04	Ra-224	2.44522E-04
Hanford	- 04	Ra-228	1.46170E-03
Hanford	- 04	Ac-228	1.46170E-03
Hanford	- 04	Th-228	2.44522E-04
Hanford	- 04	Th-231	1.40736E-03
Hanford	- 04	Th-232	1.48343E-02
Hanford	- 04	Th-234	1.80387E+00
Hanford	- 04	Pa-234	1.84750E-04
Hanford	- 04	Pa-234m	1.80387E+00
Hanford	- 04	U-235	1.40193E-03
Hanford	- 04	U-238	1.80387E+00
Hanford	- 04	Pu-238	1.61995E+01
Hanford	- 04	Pu-239	1.56896E-01
Hanford	- 04	Pu-240	7.84482E-02
Hanford	- 04	Pu-241	1.81215E+01
Hanford	- 04	Am-241	2.35344E-01
Hanford	- 05	Cr-51	2.99968E+01
Hanford	- 05	Mn-54	5.71040E+01
Hanford	- 05	Fe-55	2.13142E+02
Hanford	- 05	Fe-59	1.92640E+00
Hanford	- 05	Co-58	7.66432E+01
Hanford	- 05	Co-60	6.00899E+02
Hanford	- 05	Ni-59	2.75200E+00
Hanford	- 05	Ni-63	3.91196E+02
Hanford	- 05	Zr-95	2.33920E+00
Hanford	- 06	H-3	9.76359E-02
Hanford	- 06	Cr-51	2.49005E-01
Hanford	- 06	Mn-54	4.74024E-01
Hanford	- 06	Fe-55	1.76931E+00
Hanford	- 06	Fe-59	1.59911E-02
Hanford	- 06	Co-58	6.36220E-01
Hanford	- 06	Co-60	5.03612E+00
Hanford	- 06	Ni-59	2.28445E-02
Hanford	- 06	Ni-63	3.34288E+00
Hanford	- 06	Sr-90	8.49155E+00
Hanford	- 06	Y-90	8.49155E+00
Hanford	- 06	Zr-95	1.94178E-02
Hanford	- 06	Tc-99	1.51634E-03
Hanford	- 06	Ru-106	8.28937E-01
Hanford	- 06	Rh-106	8.28937E-01
Hanford	- 06	Sb-125	2.38066E-01
Hanford	- 06	Te-125m	5.81267E-02
Hanford	- 06	Cs-134	9.63892E-01
Hanford	- 06	Cs-137	8.89591E+00
Hanford	- 06	Ba-137m	8.42079E+00
Hanford	- 06	Ce-144	2.77491E+00
Hanford	- 06	Pr-144	2.77491E+00
Hanford	- 06	Pr-144m	3.33596E-02
Hanford	- 06	Pm-147	6.77302E+00
Hanford	- 06	Sm-151	6.62139E-02
Hanford	- 06	Eu-152	1.01089E-03
Hanford	- 06	Eu-154	1.73369E-01
Hanford	- 06	Eu-155	1.37482E-01
Hanford	- 06	Tl-208	1.19036E-06
Hanford	- 06	Pb-212	3.15097E-06
Hanford	- 06	Bi-212	3.15097E-06
Hanford	- 06	Po-212	2.03062E-06
Hanford	- 06	Po-216	3.15097E-06
Hanford	- 06	Ra-224	3.15097E-06
Hanford	- 06	Ra-228	1.88358E-05
Hanford	- 06	Ac-228	1.88358E-05
Hanford	- 06	Th-228	3.15097E-06
Hanford	- 06	Th-231	1.81355E-05

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
Hanford	- 06	Th-232	1.91158E-04
Hanford	- 06	Th-234	2.32450E-02
Hanford	- 06	Pa-234	2.38073E-06
Hanford	- 06	Pa-234m	2.32450E-02
Hanford	- 06	U-235	1.80655E-05
Hanford	- 06	U-238	2.32450E-02
Hanford	- 06	Pu-238	2.08750E-01
Hanford	- 06	Pu-239	2.02179E-03
Hanford	- 06	Pu-240	1.01089E-03
Hanford	- 06	Pu-241	2.33517E-01
Hanford	- 06	Am-241	3.03269E-03
Hanford	- 07	Sr-90	1.61000E+05
Hanford	- 07	Y-90	1.61000E+05
Hanford	- 07	Ru-106	2.53000E+05
Hanford	- 07	Rh-106	2.53000E+05
Hanford	- 07	Cs-137	5.48550E+06
Hanford	- 07	Ba-137m	5.18650E+06
Hanford	- 09	H-3	3.56782E-03
Hanford	- 09	Cr-51	9.09919E-03
Hanford	- 09	Mn-54	1.73218E-02
Hanford	- 09	Fe-55	6.46543E-02
Hanford	- 09	Fe-59	5.84351E-04
Hanford	- 09	Co-58	2.32488E-02
Hanford	- 09	Co-60	1.84030E-01
Hanford	- 09	Ni-59	8.34788E-04
Hanford	- 09	Ni-63	1.22156E-01
Hanford	- 09	Sr-90	3.10299E-01
Hanford	- 09	Y-90	3.10299E-01
Hanford	- 09	Zr-95	7.09570E-04
Hanford	- 09	Tc-99	5.54106E-05
Hanford	- 09	Ru-106	3.02911E-02
Hanford	- 09	Rh-106	3.02911E-02
Hanford	- 09	Sb-125	8.69947E-03
Hanford	- 09	Te-125m	2.12407E-03
Hanford	- 09	Cs-134	3.52226E-02
Hanford	- 09	Cs-137	3.25075E-01
Hanford	- 09	Ba-137m	3.07713E-01
Hanford	- 09	Ce-144	1.01401E-01
Hanford	- 09	Pr-144	1.01401E-01
Hanford	- 09	Pr-144m	1.21903E-03
Hanford	- 09	Pm-147	2.47500E-01
Hanford	- 09	Sm-151	2.41959E-03
Hanford	- 09	Eu-152	3.69404E-05
Hanford	- 09	Eu-154	6.33528E-03
Hanford	- 09	Eu-155	5.02389E-03
Hanford	- 09	Tl-208	4.34985E-08
Hanford	- 09	Pb-212	1.15143E-07
Hanford	- 09	Bi-212	1.15143E-07
Hanford	- 09	Po-212	7.42034E-08
Hanford	- 09	Po-216	1.15143E-07
Hanford	- 09	Ra-224	1.15143E-07
Hanford	- 09	Ra-228	6.88300E-07
Hanford	- 09	Ac-228	6.88300E-07
Hanford	- 09	Th-228	1.15143E-07
Hanford	- 09	Th-231	6.62713E-07
Hanford	- 09	Th-232	6.98535E-06
Hanford	- 09	Th-234	8.49424E-04
Hanford	- 09	Pa-234	8.69971E-08
Hanford	- 09	Pa-234m	8.49424E-04
Hanford	- 09	U-235	6.60154E-07
Hanford	- 09	U-238	8.49424E-04
Hanford	- 09	Pu-238	7.62819E-03
Hanford	- 09	Pu-239	7.38808E-05
Hanford	- 09	Pu-240	3.69404E-05

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
Hanford	- 09	Pu-241	8.53323E-03
Hanford	- 09	Am-241	1.10821E-04
INEL	- 01	H-3	1.84894E-04
INEL	- 01	Cr-51	3.15804E-01
INEL	- 01	Mn-54	6.01187E-01
INEL	- 01	Fe-55	2.24395E+00
INEL	- 01	Fe-59	2.02810E-02
INEL	- 01	Co-58	8.06894E-01
INEL	- 01	Co-60	6.32710E+00
INEL	- 01	Ni-59	2.89728E-02
INEL	- 01	Ni-63	4.12024E+00
INEL	- 01	Sr-90	1.55311E-01
INEL	- 01	Y-90	1.55311E-01
INEL	- 01	Zr-95	2.46269E-02
INEL	- 01	Tc-99	2.77341E-05
INEL	- 01	Ru-106	1.51613E-02
INEL	- 01	Rh-106	1.51613E-02
INEL	- 01	Sb-125	4.35426E-03
INEL	- 01	Te-125m	1.06314E-03
INEL	- 01	Cs-134	1.76296E-02
INEL	- 01	Cs-137	1.62707E-01
INEL	- 01	Ba-137m	1.54017E-01
INEL	- 01	Ce-144	5.07535E-02
INEL	- 01	Pr-144	5.07535E-02
INEL	- 01	Pr-144m	6.10151E-04
INEL	- 01	Pm-147	1.23879E-01
INEL	- 01	Sm-151	1.21105E-03
INEL	- 01	Eu-152	1.84894E-05
INEL	- 01	Eu-154	3.17094E-03
INEL	- 01	Eu-155	2.51456E-03
INEL	- 01	Pu-238	3.81807E-03
INEL	- 01	Pu-239	3.69788E-05
INEL	- 01	Pu-240	1.84894E-05
INEL	- 01	Pu-241	4.27106E-03
INEL	- 01	Am-241	5.54683E-05
INEL	- 02	H-3	5.95075E-02
INEL	- 02	Cr-51	1.01640E+02
INEL	- 02	Mn-54	1.93489E+02
INEL	- 02	Fe-55	7.22205E+02
INEL	- 02	Fe-59	6.52736E+00
INEL	- 02	Co-58	2.59695E+02
INEL	- 02	Co-60	2.03635E+03
INEL	- 02	Ni-59	9.32480E+00
INEL	- 02	Ni-63	1.32608E+03
INEL	- 02	Sr-90	4.99863E+01
INEL	- 02	Y-90	4.99863E+01
INEL	- 02	Zr-95	7.92608E+00
INEL	- 02	Tc-99	8.92612E-03
INEL	- 02	Ru-106	4.87961E+00
INEL	- 02	Rh-106	4.87961E+00
INEL	- 02	Sb-125	1.40140E+00
INEL	- 02	Te-125m	3.42168E-01
INEL	- 02	Cs-134	5.67404E+00
INEL	- 02	Cs-137	5.23666E+01
INEL	- 02	Ba-137m	4.95697E+01
INEL	- 02	Ce-144	1.63348E+01
INEL	- 02	Pr-144	1.63348E+01
INEL	- 02	Pr-144m	1.96374E-01
INEL	- 02	Pm-147	3.98700E+01
INEL	- 02	Sm-151	3.89774E-01
INEL	- 02	Eu-152	5.95075E-03
INEL	- 02	Eu-154	1.02055E+00
INEL	- 02	Eu-155	8.09302E-01
INEL	- 02	Pu-238	1.22883E+00

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
INEL	- 02	Pu-239	1.19015E-02
INEL	- 02	Pu-240	5.95075E-03
INEL	- 02	Pu-241	1.37462E+00
INEL	- 02	Am-241	1.78522E-02
INEL	- 03	H-3	1.47901E-05
INEL	- 03	Cr-51	2.52620E-02
INEL	- 03	Mn-54	4.80905E-02
INEL	- 03	Fe-55	1.79499E-01
INEL	- 03	Fe-59	1.62233E-03
INEL	- 03	Co-58	6.45456E-02
INEL	- 03	Co-60	5.06122E-01
INEL	- 03	Ni-59	2.31761E-03
INEL	- 03	Ni-63	3.29589E-01
INEL	- 03	Sr-90	1.24237E-02
INEL	- 03	Y-90	1.24237E-02
INEL	- 03	Zr-95	1.96997E-03
INEL	- 03	Tc-99	2.21852E-06
INEL	- 03	Ru-106	1.21279E-03
INEL	- 03	Rh-106	1.21279E-03
INEL	- 03	Sb-125	3.48309E-04
INEL	- 03	Te-125m	8.50436E-05
INEL	- 03	Cs-134	1.41024E-03
INEL	- 03	Cs-137	1.30153E-02
INEL	- 03	Ba-137m	1.23202E-02
INEL	- 03	Ce-144	4.05990E-03
INEL	- 03	Pr-144	4.05990E-03
INEL	- 03	Pr-144m	4.88076E-05
INEL	- 03	Pm-147	9.90943E-03
INEL	- 03	Sm-151	9.68758E-05
INEL	- 03	Eu-152	1.47901E-06
INEL	- 03	Eu-154	2.53651E-04
INEL	- 03	Eu-155	2.01146E-04
INEL	- 03	Pu-238	3.05417E-04
INEL	- 03	Pu-239	2.95803E-06
INEL	- 03	Pu-240	1.47901E-06
INEL	- 03	Pu-241	3.41653E-04
INEL	- 03	Am-241	4.43705E-06
INEL	- 04	H-3	1.22619E-05
INEL	- 04	Cr-51	2.09437E-02
INEL	- 04	Mn-54	3.98700E-02
INEL	- 04	Fe-55	1.48815E-01
INEL	- 04	Fe-59	1.34501E-03
INEL	- 04	Co-58	5.35122E-02
INEL	- 04	Co-60	4.19605E-01
INEL	- 04	Ni-59	1.92144E-03
INEL	- 04	Ni-63	2.73249E-01
INEL	- 04	Sr-90	1.03000E-02
INEL	- 04	Y-90	1.03000E-02
INEL	- 04	Zr-95	1.63322E-03
INEL	- 04	Tc-99	1.83929E-06
INEL	- 04	Ru-106	1.00548E-03
INEL	- 04	Rh-106	1.00548E-03
INEL	- 04	Sb-125	2.88769E-04
INEL	- 04	Te-125m	7.05063E-05
INEL	- 04	Cs-134	1.16917E-03
INEL	- 04	Cs-137	1.07905E-02
INEL	- 04	Ba-137m	1.02142E-02
INEL	- 04	Ce-144	3.36591E-03
INEL	- 04	Pr-144	3.36591E-03
INEL	- 04	Pr-144m	4.04645E-05
INEL	- 04	Pm-147	8.21552E-03
INEL	- 04	Sm-151	8.03159E-05
INEL	- 04	Eu-152	1.22619E-06
INEL	- 04	Eu-154	2.10292E-04

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
INEL	- 04	Eu-155	1.66762E-04
INEL	- 04	Pu-238	2.53209E-04
INEL	- 04	Pu-239	2.45239E-06
INEL	- 04	Pu-240	1.22619E-06
INEL	- 04	Pu-241	2.83251E-04
INEL	- 04	Am-241	3.67859E-06
INEL	- 08	H-3	1.69900E+02
ITRI	- 02	H-3	2.44000E+00
ITRI	- 02	C-14	1.20000E-01
ITRI	- 02	Mn-54	1.35200E+01
ITRI	- 02	Co-58	1.24800E+01
ITRI	- 02	Co-60	3.60600E+01
ITRI	- 02	Sr-90	1.69600E+01
ITRI	- 02	Y-90	1.69600E+01
ITRI	- 02	Tc-99	2.40000E-01
ITRI	- 02	Cs-134	2.79600E+01
ITRI	- 02	Cs-137	3.69000E+01
ITRI	- 02	Ba-137m	3.49000E+01
ITRI	- 02	U-238	1.46000E+00
ITRI	- 03	H-3	3.73176E+00
ITRI	- 03	C-14	1.83529E-01
ITRI	- 03	Mn-54	2.06776E+01
ITRI	- 03	Co-58	1.90870E+01
ITRI	- 03	Co-60	5.51505E+01
ITRI	- 03	Sr-90	2.59388E+01
ITRI	- 03	Y-90	2.59388E+01
ITRI	- 03	Tc-99	3.67058E-01
ITRI	- 03	Cs-134	4.27623E+01
ITRI	- 03	Cs-137	5.64352E+01
ITRI	- 03	Ba-137m	5.33764E+01
ITRI	- 03	U-238	2.23294E+00
K-25	- 01	Tl-208	6.67437E-05
K-25	- 01	Pb-212	1.76674E-04
K-25	- 01	Bi-212	1.76674E-04
K-25	- 01	Po-212	1.13857E-04
K-25	- 01	Po-216	1.76674E-04
K-25	- 01	Ra-224	1.76674E-04
K-25	- 01	Ra-228	1.05612E-03
K-25	- 01	Ac-228	1.05612E-03
K-25	- 01	Th-228	1.76674E-04
K-25	- 01	Th-231	1.01686E-03
K-25	- 01	Th-232	1.07183E-02
K-25	- 01	Th-234	1.30335E+00
K-25	- 01	Pa-234	1.33487E-04
K-25	- 01	Pa-234m	1.30335E+00
K-25	- 01	U-235	1.01293E-03
K-25	- 01	U-238	1.30335E+00
K-25	- 02	Tl-208	5.66474E-05
K-25	- 02	Pb-212	1.49949E-04
K-25	- 02	Bi-212	1.49949E-04
K-25	- 02	Po-212	9.66338E-05
K-25	- 02	Po-216	1.49949E-04
K-25	- 02	Ra-224	1.49949E-04
K-25	- 02	Ra-228	8.96362E-04
K-25	- 02	Ac-228	8.96362E-04
K-25	- 02	Th-228	1.49949E-04
K-25	- 02	Th-231	8.63040E-04
K-25	- 02	Th-232	9.09691E-03
K-25	- 02	Th-234	1.10619E+00
K-25	- 02	Pa-234	1.13295E-04
K-25	- 02	Pa-234m	1.10619E+00
K-25	- 02	U-235	8.59708E-04

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
K-25	- 02	U-238	1.10619E+00
K-25	- 03	Tl-208	1.09480E-06
K-25	- 03	Pb-212	2.89800E-06
K-25	- 03	Bi-212	2.89800E-06
K-25	- 03	Po-212	1.86760E-06
K-25	- 03	Po-216	2.89800E-06
K-25	- 03	Ra-224	2.89800E-06
K-25	- 03	Ra-228	1.73236E-05
K-25	- 03	Ac-228	1.73236E-05
K-25	- 03	Th-228	2.89800E-06
K-25	- 03	Th-231	1.66796E-05
K-25	- 03	Th-232	1.75812E-04
K-25	- 03	Th-234	2.13789E-02
K-25	- 03	Pa-234	2.18960E-06
K-25	- 03	Pa-234m	2.13789E-02
K-25	- 03	U-235	1.66152E-05
K-25	- 03	U-238	2.13789E-02
K-25	- 04	Tl-208	1.52247E-04
K-25	- 04	Pb-212	4.03006E-04
K-25	- 04	Bi-212	4.03006E-04
K-25	- 04	Po-212	2.59715E-04
K-25	- 04	Po-216	4.03006E-04
K-25	- 04	Ra-224	4.03006E-04
K-25	- 04	Ra-228	2.40908E-03
K-25	- 04	Ac-228	2.40908E-03
K-25	- 04	Th-228	4.03006E-04
K-25	- 04	Th-231	2.31953E-03
K-25	- 04	Th-232	2.44491E-02
K-25	- 04	Th-234	2.97302E+00
K-25	- 04	Pa-234	3.04494E-04
K-25	- 04	Pa-234m	2.97302E+00
K-25	- 04	U-235	2.31057E-03
K-25	- 04	U-238	2.97302E+00
K-25	- 06	Tl-208	1.70000E-09
K-25	- 06	Pb-212	4.50000E-09
K-25	- 06	Bi-212	4.50000E-09
K-25	- 06	Po-212	2.90000E-09
K-25	- 06	Po-216	4.50000E-09
K-25	- 06	Ra-224	4.50000E-09
K-25	- 06	Ra-228	2.69000E-08
K-25	- 06	Ac-228	2.69000E-08
K-25	- 06	Th-228	4.50000E-09
K-25	- 06	Th-231	2.59000E-08
K-25	- 06	Th-232	2.73000E-07
K-25	- 06	Th-234	3.31970E-05
K-25	- 06	Pa-234	3.40000E-09
K-25	- 06	Pa-234m	3.31970E-05
K-25	- 06	U-235	2.58000E-08
K-25	- 06	U-238	3.31970E-05
K-25	- 07	Tl-208	1.98220E-05
K-25	- 07	Pb-212	5.24700E-05
K-25	- 07	Bi-212	5.24700E-05
K-25	- 07	Po-212	3.38140E-05
K-25	- 07	Po-216	5.24700E-05
K-25	- 07	Ra-224	5.24700E-05
K-25	- 07	Ra-228	3.13654E-04
K-25	- 07	Ac-228	3.13654E-04
K-25	- 07	Th-228	5.24700E-05
K-25	- 07	Th-231	3.01994E-04
K-25	- 07	Th-232	3.18318E-03
K-25	- 07	Th-234	3.87077E-01
K-25	- 07	Pa-234	3.96440E-05

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
K-25	- 07	Pa-234m	3.87077E-01
K-25	- 07	U-235	3.00828E-04
K-25	- 07	U-238	3.87077E-01
K-25	- 08	Tl-208	7.54800E-06
K-25	- 08	Pb-212	1.99800E-05
K-25	- 08	Bi-212	1.99800E-05
K-25	- 08	Po-212	1.28760E-05
K-25	- 08	Po-216	1.99800E-05
K-25	- 08	Ra-224	1.99800E-05
K-25	- 08	Ra-228	1.19436E-04
K-25	- 08	Ac-228	1.19436E-04
K-25	- 08	Th-228	1.99800E-05
K-25	- 08	Th-231	1.14996E-04
K-25	- 08	Th-232	1.21212E-03
K-25	- 08	Th-234	1.47395E-01
K-25	- 08	Pa-234	1.50960E-05
K-25	- 08	Pa-234m	1.47395E-01
K-25	- 08	U-235	1.14552E-04
K-25	- 08	U-238	1.47395E-01
KAPL	- 02	Cr-51	5.01400E-03
KAPL	- 02	Mn-54	9.54500E-03
KAPL	- 02	Fe-55	3.56270E-02
KAPL	- 02	Fe-59	3.22000E-04
KAPL	- 02	Co-58	1.28110E-02
KAPL	- 02	Co-60	1.00441E-01
KAPL	- 02	Ni-59	4.60000E-04
KAPL	- 02	Ni-63	6.53890E-02
KAPL	- 02	Zr-95	3.91000E-04
KAPL	- 02	Tl-208	4.42000E-09
KAPL	- 02	Pb-212	1.17000E-08
KAPL	- 02	Bi-212	1.17000E-08
KAPL	- 02	Po-212	7.54000E-09
KAPL	- 02	Po-216	1.17000E-08
KAPL	- 02	Ra-224	1.17000E-08
KAPL	- 02	Ra-228	6.99400E-08
KAPL	- 02	Ac-228	6.99400E-08
KAPL	- 02	Th-228	1.17000E-08
KAPL	- 02	Th-231	6.73400E-08
KAPL	- 02	Th-232	7.09800E-07
KAPL	- 02	Th-234	8.63122E-05
KAPL	- 02	Pa-234	8.84000E-09
KAPL	- 02	Pa-234m	8.63122E-05
KAPL	- 02	U-235	6.70800E-08
KAPL	- 02	U-238	8.63122E-05
KAPL	- 05	H-3	5.15194E-04
KAPL	- 05	C-14	2.40000E-05
KAPL	- 05	Cr-51	1.13360E+04
KAPL	- 05	Mn-54	2.15800E+04
KAPL	- 05	Fe-55	8.05480E+04
KAPL	- 05	Fe-59	7.28000E+02
KAPL	- 05	Co-58	2.89640E+04
KAPL	- 05	Co-60	2.27084E+05
KAPL	- 05	Ni-59	1.04000E+03
KAPL	- 05	Ni-63	1.47836E+05
KAPL	- 05	Sr-90	2.62352E-02
KAPL	- 05	Y-90	2.62352E-02
KAPL	- 05	Zr-95	8.84000E+02
KAPL	- 05	Tc-99	5.20791E-05
KAPL	- 05	Ru-106	2.22993E-03
KAPL	- 05	Rh-106	2.22993E-03
KAPL	- 05	Sb-125	6.40425E-04
KAPL	- 05	Te-125m	1.56367E-04
KAPL	- 05	Cs-134	8.18497E-03

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
KAPL	- 05	Cs-137	3.13109E-02
KAPL	- 05	Ba-137m	2.96328E-02
KAPL	- 05	Ce-144	7.46483E-03
KAPL	- 05	Pr-144	7.46483E-03
KAPL	- 05	Pr-144m	8.97411E-05
KAPL	- 05	Pm-147	1.82201E-02
KAPL	- 05	Sm-151	1.78122E-04
KAPL	- 05	Eu-152	2.71942E-06
KAPL	- 05	Eu-154	4.66382E-04
KAPL	- 05	Eu-155	3.69842E-04
KAPL	- 05	Tl-208	2.95800E-08
KAPL	- 05	Pb-212	7.83000E-08
KAPL	- 05	Bi-212	7.83000E-08
KAPL	- 05	Po-212	5.04600E-08
KAPL	- 05	Po-216	7.83000E-08
KAPL	- 05	Ra-224	7.83000E-08
KAPL	- 05	Ra-228	4.68060E-07
KAPL	- 05	Ac-228	4.68060E-07
KAPL	- 05	Th-228	7.83000E-08
KAPL	- 05	Th-231	4.50660E-07
KAPL	- 05	Th-232	4.75020E-06
KAPL	- 05	Th-234	5.77627E-04
KAPL	- 05	Pa-234	5.91600E-08
KAPL	- 05	Pa-234m	5.77627E-04
KAPL	- 05	U-235	4.48920E-07
KAPL	- 05	U-238	8.69627E-04
KAPL	- 05	Pu-238	5.61562E-04
KAPL	- 05	Pu-239	5.43885E-06
KAPL	- 05	Pu-240	2.71942E-06
KAPL	- 05	Pu-241	6.28188E-04
KAPL	- 05	Am-241	8.15828E-06
KAPL	- 07	H-3	5.14794E-04
KAPL	- 07	C-14	2.40000E-05
KAPL	- 07	Cr-51	1.04640E-04
KAPL	- 07	Mn-54	2.90320E-03
KAPL	- 07	Fe-55	7.43520E-04
KAPL	- 07	Fe-59	6.72000E-06
KAPL	- 07	Co-58	2.76336E-03
KAPL	- 07	Co-60	9.43543E-03
KAPL	- 07	Ni-59	9.60000E-06
KAPL	- 07	Ni-63	1.61784E-03
KAPL	- 07	Sr-90	2.58992E-02
KAPL	- 07	Y-90	2.58992E-02
KAPL	- 07	Zr-95	8.16000E-06
KAPL	- 07	Tc-99	5.20191E-05
KAPL	- 07	Ru-106	2.19713E-03
KAPL	- 07	Rh-106	2.19713E-03
KAPL	- 07	Sb-125	6.31007E-04
KAPL	- 07	Te-125m	1.54067E-04
KAPL	- 07	Cs-134	8.14684E-03
KAPL	- 07	Cs-137	3.09590E-02
KAPL	- 07	Ba-137m	2.92997E-02
KAPL	- 07	Ce-144	7.35505E-03
KAPL	- 07	Pr-144	7.35505E-03
KAPL	- 07	Pr-144m	8.84214E-05
KAPL	- 07	Pm-147	1.79522E-02
KAPL	- 07	Sm-151	1.75503E-04
KAPL	- 07	Eu-152	2.67943E-06
KAPL	- 07	Eu-154	4.59523E-04
KAPL	- 07	Eu-155	3.64403E-04
KAPL	- 07	Tl-208	7.48000E-11
KAPL	- 07	Pb-212	1.98000E-10
KAPL	- 07	Bi-212	1.98000E-10
KAPL	- 07	Po-212	1.27600E-10

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
KAPL	- 07	Po-216	1.98000E-10
KAPL	- 07	Ra-224	1.98000E-10
KAPL	- 07	Ra-228	1.18360E-09
KAPL	- 07	Ac-228	1.18360E-09
KAPL	- 07	Th-228	1.98000E-10
KAPL	- 07	Th-231	1.13960E-09
KAPL	- 07	Th-232	1.20120E-08
KAPL	- 07	Th-234	1.46066E-06
KAPL	- 07	Pa-234	1.49600E-10
KAPL	- 07	Pa-234m	1.46066E-06
KAPL	- 07	U-235	1.13520E-09
KAPL	- 07	U-238	2.93460E-04
KAPL	- 07	Pu-238	5.53303E-04
KAPL	- 07	Pu-239	5.35887E-06
KAPL	- 07	Pu-240	2.67943E-06
KAPL	- 07	Pu-241	6.18950E-04
KAPL	- 07	Am-241	8.03831E-06
KCP	- 02	H-3	2.70534E-02
KCP	- 02	C-14	1.44670E-04
KCP	- 02	Mn-54	1.62995E-02
KCP	- 02	Co-58	1.50457E-02
KCP	- 02	Co-60	4.34735E-02
KCP	- 02	Sr-90	2.04468E-02
KCP	- 02	Y-90	2.04468E-02
KCP	- 02	Tc-99	2.89341E-04
KCP	- 02	Cs-134	3.37082E-02
KCP	- 02	Cs-137	4.44862E-02
KCP	- 02	Ba-137m	4.20750E-02
KCP	- 02	U-238	1.76016E-03
LANL	- 01	H-3	3.60488E-02
LANL	- 01	Cr-51	4.64340E-03
LANL	- 01	Mn-54	8.83950E-03
LANL	- 01	Fe-55	3.29937E-02
LANL	- 01	Fe-59	2.98200E-04
LANL	- 01	Co-58	1.18641E-02
LANL	- 01	Co-60	2.54749E-01
LANL	- 01	Ni-59	4.26000E-04
LANL	- 01	Ni-63	3.82317E-01
LANL	- 01	Sr-90	2.86010E+01
LANL	- 01	Y-90	2.86010E+01
LANL	- 01	Zr-95	3.62100E-04
LANL	- 01	Tc-99	5.10732E-03
LANL	- 01	Ru-106	2.79200E+00
LANL	- 01	Rh-106	2.79200E+00
LANL	- 01	Sb-125	8.01850E-01
LANL	- 01	Te-125m	1.95780E-01
LANL	- 01	Cs-134	3.24655E+00
LANL	- 01	Cs-137	2.99629E+01
LANL	- 01	Ba-137m	2.83626E+01
LANL	- 01	Ce-144	9.34640E+00
LANL	- 01	Pr-144	9.34640E+00
LANL	- 01	Pr-144m	1.12361E-01
LANL	- 01	Pm-147	2.28127E+01
LANL	- 01	Sm-151	2.23019E-01
LANL	- 01	Eu-152	3.40488E-03
LANL	- 01	Eu-154	5.83937E-01
LANL	- 01	Eu-155	4.63064E-01
LANL	- 01	Tl-208	1.66940E-02
LANL	- 01	Pb-212	4.41900E-02
LANL	- 01	Bi-212	4.41900E-02
LANL	- 01	Po-212	2.84780E-02
LANL	- 01	Po-216	4.41900E-02
LANL	- 01	Ra-224	4.41900E-02
LANL	- 01	Ra-228	2.64158E-01
LANL	- 01	Ac-228	2.64158E-01

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
LANL	- 01	Th-228	4.41900E-02
LANL	- 01	Th-231	2.54338E-01
LANL	- 01	Th-232	2.68086E+00
LANL	- 01	Th-234	3.25994E+02
LANL	- 01	Pa-234	3.33880E-02
LANL	- 01	Pa-234m	3.25994E+02
LANL	- 01	U-235	2.53356E-01
LANL	- 01	U-238	3.25994E+02
LANL	- 01	Pu-238	5.17073E+00
LANL	- 01	Pu-239	3.47849E-01
LANL	- 01	Pu-240	1.19704E+00
LANL	- 01	Pu-241	1.65167E+02
LANL	- 01	Am-241	1.70354E-02
LANL	- 01	Cm-242	9.54912E-02
LANL	- 01	Cm-244	3.41040E-02
LANL	- 02	H-3	8.11829E-02
LANL	- 02	Cr-51	5.92960E+00
LANL	- 02	Mn-54	1.12880E+01
LANL	- 02	Fe-55	4.21328E+01
LANL	- 02	Fe-59	3.80800E-01
LANL	- 02	Co-58	1.51504E+01
LANL	- 02	Co-60	1.19168E+02
LANL	- 02	Ni-59	5.44000E-01
LANL	- 02	Ni-63	7.80967E+01
LANL	- 02	Sr-90	6.81936E+01
LANL	- 02	Y-90	6.81936E+01
LANL	- 02	Zr-95	4.62400E-01
LANL	- 02	Tc-99	1.21774E-02
LANL	- 02	Ru-106	6.65700E+00
LANL	- 02	Rh-106	6.65700E+00
LANL	- 02	Sb-125	1.91185E+00
LANL	- 02	Te-125m	4.66801E-01
LANL	- 02	Cs-134	7.74079E+00
LANL	- 02	Cs-137	7.14409E+01
LANL	- 02	Ba-137m	6.76253E+01
LANL	- 02	Ce-144	2.22847E+01
LANL	- 02	Pr-144	2.22847E+01
LANL	- 02	Pr-144m	2.67903E-01
LANL	- 02	Pm-147	5.43925E+01
LANL	- 02	Sm-151	5.31748E-01
LANL	- 02	Eu-152	8.11829E-03
LANL	- 02	Eu-154	1.39228E+00
LANL	- 02	Eu-155	1.10408E+00
LANL	- 02	Tl-208	5.27000E-07
LANL	- 02	Pb-212	1.39500E-06
LANL	- 02	Bi-212	1.39500E-06
LANL	- 02	Po-212	8.99000E-07
LANL	- 02	Po-216	1.39500E-06
LANL	- 02	Ra-224	1.39500E-06
LANL	- 02	Ra-228	8.33900E-06
LANL	- 02	Ac-228	8.33900E-06
LANL	- 02	Th-228	1.39500E-06
LANL	- 02	Th-231	8.02900E-06
LANL	- 02	Th-232	8.46300E-05
LANL	- 02	Th-234	1.02910E-02
LANL	- 02	Pa-234	1.05400E-06
LANL	- 02	Pa-234m	1.02910E-02
LANL	- 02	U-235	7.99800E-06
LANL	- 02	U-238	1.02910E-02
LANL	- 02	Pu-238	1.67775E+00
LANL	- 02	Pu-239	1.63377E-02
LANL	- 02	Pu-240	8.47249E-03
LANL	- 02	Pu-241	1.92410E+00
LANL	- 02	Am-241	2.43569E-02
LANL	- 02	Cm-242	2.83360E-05

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
LANL	- 02	Cm-244	1.01200E-05
LANL	- 03	H-3	3.84076E+05
LANL	- 03	Co-60	3.65673E+02
LANL	- 03	Ni-63	7.27497E+02
LANL	- 03	Sr-90	6.46664E+04
LANL	- 03	Y-90	6.46664E+04
LANL	- 03	Tc-99	1.15475E+01
LANL	- 03	Ru-106	6.31267E+03
LANL	- 03	Rh-106	6.31267E+03
LANL	- 03	Sb-125	1.81296E+03
LANL	- 03	Te-125m	4.42657E+02
LANL	- 03	Cs-134	7.34040E+03
LANL	- 03	Cs-137	6.77457E+04
LANL	- 03	Ba-137m	6.41275E+04
LANL	- 03	Ce-144	2.11320E+04
LANL	- 03	Pr-144	2.11320E+04
LANL	- 03	Pr-144m	2.54046E+02
LANL	- 03	Pm-147	5.15791E+04
LANL	- 03	Sm-151	5.04244E+02
LANL	- 03	Eu-152	7.69838E+00
LANL	- 03	Eu-154	1.32027E+03
LANL	- 03	Eu-155	1.04698E+03
LANL	- 03	Pu-238	1.58985E+03
LANL	- 03	Pu-239	1.54071E+01
LANL	- 03	Pu-240	7.73478E+00
LANL	- 03	Pu-241	1.78333E+03
LANL	- 03	Am-241	2.30953E+01
LANL	- 03	Cm-242	2.91200E-03
LANL	- 03	Cm-244	1.04000E-03
LANL	- 05	Cr-51	2.42852E+01
LANL	- 05	Mn-54	4.62310E+01
LANL	- 05	Fe-55	1.72558E+02
LANL	- 05	Fe-59	1.55960E+00
LANL	- 05	Co-58	6.20498E+01
LANL	- 05	Co-60	4.86483E+02
LANL	- 05	Ni-59	2.22800E+00
LANL	- 05	Ni-63	3.16710E+02
LANL	- 05	Zr-95	1.89380E+00
LBL	- 01	H-3	5.34030E+00
LBL	- 01	C-14	2.62637E-01
LBL	- 01	Mn-54	2.95905E+01
LBL	- 01	Co-58	2.73143E+01
LBL	- 01	Co-60	7.89227E+01
LBL	- 01	Sr-90	3.71194E+01
LBL	- 01	Y-90	3.71194E+01
LBL	- 01	Tc-99	5.25275E-01
LBL	- 01	Cs-134	6.11946E+01
LBL	- 01	Cs-137	8.07611E+01
LBL	- 01	Ba-137m	7.63838E+01
LBL	- 01	U-238	3.19542E+00
LBL	- 02	H-3	6.17433E+02
LBL	- 02	C-14	2.35783E-01
LBL	- 02	Mn-54	2.65649E+01
LBL	- 02	Co-58	2.45215E+01
LBL	- 02	Co-60	7.08530E+01
LBL	- 02	Sr-90	3.33241E+01
LBL	- 02	Y-90	3.33241E+01
LBL	- 02	Tc-99	4.71567E-01
LBL	- 02	Cs-134	5.49376E+01
LBL	- 02	Cs-137	7.25035E+01
LBL	- 02	Ba-137m	6.85737E+01
LBL	- 02	U-238	2.86870E+00

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
LBL	- 03	H-3	1.28662E+01
LBL	- 03	C-14	6.32766E-01
LBL	- 03	Mn-54	7.12916E+01
LBL	- 03	Co-58	6.58077E+01
LBL	- 03	Co-60	1.90146E+02
LBL	- 03	Sr-90	8.94309E+01
LBL	- 03	Y-90	8.94309E+01
LBL	- 03	Tc-99	1.26553E+00
LBL	- 03	Cs-134	1.47434E+02
LBL	- 03	Cs-137	1.94575E+02
LBL	- 03	Ba-137m	1.84029E+02
LBL	- 03	U-238	7.69865E+00
LBL	- 03	Cm-244	1.05584E+01
LBL	- 05	Cr-51	6.32550E-02
LBL	- 05	Mn-54	1.20416E-01
LBL	- 05	Fe-55	4.49459E-01
LBL	- 05	Fe-59	4.06225E-03
LBL	- 05	Co-58	1.61619E-01
LBL	- 05	Co-60	1.26713E+00
LBL	- 05	Ni-59	5.80321E-03
LBL	- 05	Ni-63	8.24927E-01
LBL	- 05	Zr-95	4.93273E-03
LBL	- 08	H-3	4.33487E+02
LLNL	- 01	H-3	6.50624E+02
LLNL	- 01	C-14	3.00288E-05
LLNL	- 01	Mn-54	3.38324E-03
LLNL	- 01	Co-58	3.12299E-03
LLNL	- 01	Co-60	9.07119E-03
LLNL	- 01	Ni-63	9.45708E-05
LLNL	- 01	Sr-90	1.26503E-02
LLNL	- 01	Y-90	1.26503E-02
LLNL	- 01	Tc-99	6.15587E-05
LLNL	- 01	Ru-106	8.20614E-04
LLNL	- 01	Rh-106	8.20614E-04
LLNL	- 01	Sb-125	2.35676E-04
LLNL	- 01	Te-125m	5.75431E-05
LLNL	- 01	Cs-134	7.95092E-03
LLNL	- 01	Cs-137	1.80404E-02
LLNL	- 01	Ba-137m	1.70696E-02
LLNL	- 01	Ce-144	2.74705E-03
LLNL	- 01	Pr-144	2.74705E-03
LLNL	- 01	Pr-144m	3.30247E-05
LLNL	- 01	Pm-147	6.70502E-03
LLNL	- 01	Sm-151	6.55491E-05
LLNL	- 01	Eu-152	1.00074E-06
LLNL	- 01	Eu-154	1.71628E-04
LLNL	- 01	Eu-155	1.36101E-04
LLNL	- 01	U-238	3.65350E-04
LLNL	- 01	Pu-238	1.51791E-03
LLNL	- 01	Pu-239	1.02097E-04
LLNL	- 01	Pu-240	3.51336E-04
LLNL	- 01	Pu-241	4.84774E-02
LLNL	- 01	Am-241	5.00416E-06
LLNL	- 01	Cm-242	2.80268E-05
LLNL	- 01	Cm-244	1.00096E-05
LLNL	- 02	H-3	3.19691E+02
LLNL	- 02	C-14	1.47550E-05
LLNL	- 02	Mn-54	1.66239E-03
LLNL	- 02	Co-58	1.53452E-03
LLNL	- 02	Co-60	4.45723E-03
LLNL	- 02	Ni-63	4.64684E-05
LLNL	- 02	Sr-90	6.21590E-03
LLNL	- 02	Y-90	6.21590E-03

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
LLNL	- 02	Tc-99	3.02475E-05
LLNL	- 02	Ru-106	4.03218E-04
LLNL	- 02	Rh-106	4.03218E-04
LLNL	- 02	Sb-125	1.15802E-04
LLNL	- 02	Te-125m	2.82744E-05
LLNL	- 02	Cs-134	3.90677E-03
LLNL	- 02	Cs-137	8.86438E-03
LLNL	- 02	Ba-137m	8.38735E-03
LLNL	- 02	Ce-144	1.34979E-03
LLNL	- 02	Pr-144	1.34979E-03
LLNL	- 02	Pr-144m	1.62270E-05
LLNL	- 02	Pm-147	3.29459E-03
LLNL	- 02	Sm-151	3.22083E-05
LLNL	- 02	Eu-152	4.91730E-07
LLNL	- 02	Eu-154	8.43317E-05
LLNL	- 02	Eu-155	6.68752E-05
LLNL	- 02	U-238	1.79519E-04
LLNL	- 02	Pu-238	7.45843E-04
LLNL	- 02	Pu-239	5.01667E-05
LLNL	- 02	Pu-240	1.72633E-04
LLNL	- 02	Pu-241	2.38199E-02
LLNL	- 02	Am-241	2.45885E-06
LLNL	- 02	Cm-242	1.37713E-05
LLNL	- 02	Cm-244	4.91833E-06
LLNL	- 03	H-3	6.89408E+03
LLNL	- 03	C-14	3.18188E-04
LLNL	- 03	Mn-54	3.58492E-02
LLNL	- 03	Co-58	3.30915E-02
LLNL	- 03	Co-60	9.61192E-02
LLNL	- 03	Ni-63	1.00208E-03
LLNL	- 03	Sr-90	1.34044E-01
LLNL	- 03	Y-90	1.34044E-01
LLNL	- 03	Tc-99	6.52282E-04
LLNL	- 03	Ru-106	8.69532E-03
LLNL	- 03	Rh-106	8.69532E-03
LLNL	- 03	Sb-125	2.49725E-03
LLNL	- 03	Te-125m	6.09732E-04
LLNL	- 03	Cs-134	8.42488E-02
LLNL	- 03	Cs-137	1.91158E-01
LLNL	- 03	Ba-137m	1.80871E-01
LLNL	- 03	Ce-144	2.91081E-02
LLNL	- 03	Pr-144	2.91081E-02
LLNL	- 03	Pr-144m	3.49933E-04
LLNL	- 03	Pm-147	7.10471E-02
LLNL	- 03	Sm-151	6.94565E-04
LLNL	- 03	Eu-152	1.06040E-05
LLNL	- 03	Eu-154	1.81859E-03
LLNL	- 03	Eu-155	1.44215E-03
LLNL	- 03	U-238	3.87129E-03
LLNL	- 03	Pu-238	1.60839E-02
LLNL	- 03	Pu-239	1.08183E-03
LLNL	- 03	Pu-240	3.72280E-03
LLNL	- 03	Pu-241	5.13672E-01
LLNL	- 03	Am-241	5.30247E-05
LLNL	- 03	Cm-242	2.96975E-04
LLNL	- 03	Cm-244	1.06062E-04
LLNL	- 04	H-3	4.13053E+03
LLNL	- 04	C-14	1.90639E-04
LLNL	- 04	Mn-54	2.14787E-02
LLNL	- 04	Co-58	1.98265E-02
LLNL	- 04	Co-60	5.75890E-02
LLNL	- 04	Ni-63	6.00389E-04
LLNL	- 04	Sr-90	8.03116E-02
LLNL	- 04	Y-90	8.03116E-02

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
LLNL	- 04	Tc-99	3.90809E-04
LLNL	- 04	Ru-106	5.20972E-03
LLNL	- 04	Rh-106	5.20972E-03
LLNL	- 04	Sb-125	1.49620E-03
LLNL	- 04	Te-125m	3.65316E-04
LLNL	- 04	Cs-134	5.04769E-02
LLNL	- 04	Cs-137	1.14530E-01
LLNL	- 04	Ba-137m	1.08367E-01
LLNL	- 04	Ce-144	1.74398E-02
LLNL	- 04	Pr-144	1.74398E-02
LLNL	- 04	Pr-144m	2.09659E-04
LLNL	- 04	Pm-147	4.25672E-02
LLNL	- 04	Sm-151	4.16142E-04
LLNL	- 04	Eu-152	6.35332E-06
LLNL	- 04	Eu-154	1.08959E-03
LLNL	- 04	Eu-155	8.64052E-04
LLNL	- 04	U-238	2.31945E-03
LLNL	- 04	Pu-238	9.63656E-03
LLNL	- 04	Pu-239	6.48172E-04
LLNL	- 04	Pu-240	2.23048E-03
LLNL	- 04	Pu-241	3.07762E-01
LLNL	- 04	Am-241	3.17692E-05
LLNL	- 04	Cm-242	1.77930E-04
LLNL	- 04	Cm-244	6.35465E-05
LLNL	- 06	H-3	2.16556E+04
LLNL	- 06	C-14	9.99488E-04
LLNL	- 06	Mn-54	1.12609E-01
LLNL	- 06	Co-58	1.03946E-01
LLNL	- 06	Co-60	3.01928E-01
LLNL	- 06	Ni-63	3.14772E-03
LLNL	- 06	Sr-90	4.21059E-01
LLNL	- 06	Y-90	4.21059E-01
LLNL	- 06	Tc-99	2.04894E-03
LLNL	- 06	Ru-106	2.73136E-02
LLNL	- 06	Rh-106	2.73136E-02
LLNL	- 06	Sb-125	7.84433E-03
LLNL	- 06	Te-125m	1.91528E-03
LLNL	- 06	Cs-134	2.64641E-01
LLNL	- 06	Cs-137	6.00464E-01
LLNL	- 06	Ba-137m	5.68150E-01
LLNL	- 06	Ce-144	9.14339E-02
LLNL	- 06	Pr-144	9.14339E-02
LLNL	- 06	Pr-144m	1.09920E-03
LLNL	- 06	Pm-147	2.23172E-01
LLNL	- 06	Sm-151	2.18175E-03
LLNL	- 06	Eu-152	3.33092E-05
LLNL	- 06	Eu-154	5.71254E-03
LLNL	- 06	Eu-155	4.53006E-03
LLNL	- 06	U-238	1.21604E-02
LLNL	- 06	Pu-238	5.05226E-02
LLNL	- 06	Pu-239	3.39824E-03
LLNL	- 06	Pu-240	1.16940E-02
LLNL	- 06	Pu-241	1.61353E+00
LLNL	- 06	Am-241	1.66560E-04
LLNL	- 06	Cm-242	9.32855E-04
LLNL	- 06	Cm-244	3.33162E-04
MOUND	- 01	H-3	1.34046E+04
MOUND	- 02	H-3	1.59006E+00
MOUND	- 02	Pu-238	8.11553E-02
MOUND	- 02	Pu-239	6.19506E-03
MOUND	- 02	Pu-240	2.16827E-02
MOUND	- 02	Pu-241	2.98602E+00
MOUND	- 02	Am-241	1.23901E-04

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
MOUND	- 02	Cm-242	1.73461E-03
MOUND	- 02	Cm-244	6.19506E-04
MOUND	- 06	Pu-238	7.92852E-02
MOUND	- 06	Pu-239	6.05230E-03
MOUND	- 06	Pu-240	2.11830E-02
MOUND	- 06	Pu-241	2.91721E+00
MOUND	- 06	Am-241	1.21046E-04
MOUND	- 06	Cm-242	1.69464E-03
MOUND	- 06	Cm-244	6.05230E-04
NRF	- 05	Cr-51	2.31516E+03
NRF	- 05	Mn-54	4.40730E+03
NRF	- 05	Fe-55	1.64503E+04
NRF	- 05	Fe-59	1.48680E+02
NRF	- 05	Co-58	5.91534E+03
NRF	- 05	Co-60	4.63775E+04
NRF	- 05	Ni-59	2.12400E+02
NRF	- 05	Ni-63	3.01926E+04
NRF	- 05	Zr-95	1.80540E+02
NTS	- 01	H-3	8.31825E-08
NTS	- 01	Co-60	3.95117E-07
NTS	- 01	Ni-63	7.86075E-07
NTS	- 01	Sr-90	6.98733E-05
NTS	- 01	Y-90	6.98733E-05
NTS	- 01	Tc-99	1.24774E-08
NTS	- 01	Ru-106	6.82097E-06
NTS	- 01	Rh-106	6.82097E-06
NTS	- 01	Sb-125	1.95895E-06
NTS	- 01	Te-125m	4.78300E-07
NTS	- 01	Cs-134	7.93145E-06
NTS	- 01	Cs-137	7.32006E-05
NTS	- 01	Ba-137m	6.92910E-05
NTS	- 01	Ce-144	2.28336E-05
NTS	- 01	Pr-144	2.28336E-05
NTS	- 01	Pr-144m	2.74502E-07
NTS	- 01	Pm-147	5.57323E-05
NTS	- 01	Sm-151	5.44846E-07
NTS	- 01	Eu-152	8.31825E-09
NTS	- 01	Eu-154	1.42658E-06
NTS	- 01	Eu-155	1.13128E-06
NTS	- 01	Pu-238	1.71772E-06
NTS	- 01	Pu-239	1.66365E-08
NTS	- 01	Pu-240	8.31825E-09
NTS	- 01	Pu-241	1.92152E-06
NTS	- 01	Am-241	2.49548E-08
NTS	- 02	H-3	2.92978E-05
NTS	- 02	Co-60	1.39165E-04
NTS	- 02	Ni-63	2.76865E-04
NTS	- 02	Sr-90	2.46102E-02
NTS	- 02	Y-90	2.46102E-02
NTS	- 02	Tc-99	4.39468E-06
NTS	- 02	Ru-106	2.40242E-03
NTS	- 02	Rh-106	2.40242E-03
NTS	- 02	Sb-125	6.89964E-04
NTS	- 02	Te-125m	1.68463E-04
NTS	- 02	Cs-134	2.79355E-03
NTS	- 02	Cs-137	2.57821E-02
NTS	- 02	Ba-137m	2.44051E-02
NTS	- 02	Ce-144	8.04226E-03
NTS	- 02	Pr-144	8.04226E-03
NTS	- 02	Pr-144m	9.66829E-05
NTS	- 02	Pm-147	1.96296E-02
NTS	- 02	Sm-151	1.91901E-04
NTS	- 02	Eu-152	2.92978E-06

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
NTS	- 02	Eu-154	5.02458E-04
NTS	- 02	Eu-155	3.98451E-04
NTS	- 02	Pu-238	6.05001E-04
NTS	- 02	Pu-239	5.85957E-06
NTS	- 02	Pu-240	2.92978E-06
NTS	- 02	Pu-241	6.76780E-04
NTS	- 02	Am-241	8.78935E-06
NTS	- 03	H-3	3.60669E-05
NTS	- 03	Co-60	1.71318E-04
NTS	- 03	Ni-63	3.40832E-04
NTS	- 03	Sr-90	3.02962E-02
NTS	- 03	Y-90	3.02962E-02
NTS	- 03	Tc-99	5.41003E-06
NTS	- 03	Ru-106	2.95749E-03
NTS	- 03	Rh-106	2.95749E-03
NTS	- 03	Sb-125	8.49375E-04
NTS	- 03	Te-125m	2.07385E-04
NTS	- 03	Cs-134	3.43898E-03
NTS	- 03	Cs-137	3.17389E-02
NTS	- 03	Ba-137m	3.00437E-02
NTS	- 03	Ce-144	9.90036E-03
NTS	- 03	Pr-144	9.90036E-03
NTS	- 03	Pr-144m	1.19021E-04
NTS	- 03	Pm-147	2.41648E-02
NTS	- 03	Sm-151	2.36238E-04
NTS	- 03	Eu-152	3.60669E-06
NTS	- 03	Eu-154	6.18547E-04
NTS	- 03	Eu-155	4.90510E-04
NTS	- 03	Pu-238	7.44781E-04
NTS	- 03	Pu-239	7.21338E-06
NTS	- 03	Pu-240	3.60669E-06
NTS	- 03	Pu-241	8.33145E-04
NTS	- 03	Am-241	1.08201E-05
NTS	- 04	H-3	7.99832E-06
NTS	- 04	Co-60	3.79920E-05
NTS	- 04	Ni-63	7.55841E-05
NTS	- 04	Sr-90	6.71859E-03
NTS	- 04	Y-90	6.71859E-03
NTS	- 04	Tc-99	1.19975E-06
NTS	- 04	Ru-106	6.55862E-04
NTS	- 04	Rh-106	6.55862E-04
NTS	- 04	Sb-125	1.88360E-04
NTS	- 04	Te-125m	4.59903E-05
NTS	- 04	Cs-134	7.62640E-04
NTS	- 04	Cs-137	7.03852E-03
NTS	- 04	Ba-137m	6.66260E-03
NTS	- 04	Ce-144	2.19554E-03
NTS	- 04	Pr-144	2.19554E-03
NTS	- 04	Pr-144m	2.63945E-05
NTS	- 04	Pm-147	5.35887E-03
NTS	- 04	Sm-151	5.23890E-05
NTS	- 04	Eu-152	7.99832E-07
NTS	- 04	Eu-154	1.37171E-04
NTS	- 04	Eu-155	1.08777E-04
NTS	- 04	Pu-238	1.65165E-04
NTS	- 04	Pu-239	1.59966E-06
NTS	- 04	Pu-240	7.99832E-07
NTS	- 04	Pu-241	1.84761E-04
NTS	- 04	Am-241	2.39950E-06
ORISE	- 02	H-3	4.00831E-04
ORISE	- 02	C-14	2.37600E-07
ORISE	- 02	Mn-54	2.67696E-05
ORISE	- 02	Co-58	2.47104E-05
ORISE	- 02	Co-60	7.13988E-05

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
ORISE	- 02	Sr-90	3.35808E-05
ORISE	- 02	Y-90	3.35808E-05
ORISE	- 02	Tc-99	4.75200E-07
ORISE	- 02	Cs-134	5.53608E-05
ORISE	- 02	Cs-137	7.30620E-05
ORISE	- 02	Ba-137m	6.91020E-05
ORISE	- 02	Tl-208	6.73200E-09
ORISE	- 02	Pb-212	1.78200E-08
ORISE	- 02	Bi-212	1.78200E-08
ORISE	- 02	Po-212	1.14840E-08
ORISE	- 02	Po-216	1.78200E-08
ORISE	- 02	Ra-224	1.78200E-08
ORISE	- 02	Ra-228	1.06524E-07
ORISE	- 02	Ac-228	1.06524E-07
ORISE	- 02	Th-228	1.78200E-08
ORISE	- 02	Th-231	1.02564E-07
ORISE	- 02	Th-232	1.08108E-06
ORISE	- 02	Th-234	1.31460E-04
ORISE	- 02	Pa-234	1.34640E-08
ORISE	- 02	Pa-234m	1.31460E-04
ORISE	- 02	U-235	1.02168E-07
ORISE	- 02	U-238	1.34351E-04
ORNL	- 01	H-3	1.23837E-01
ORNL	- 01	C-14	6.09034E-03
ORNL	- 01	Mn-54	6.86178E-01
ORNL	- 01	Co-58	6.33395E-01
ORNL	- 01	Co-60	1.83015E+00
ORNL	- 01	Sr-90	8.60767E-01
ORNL	- 01	Y-90	8.60767E-01
ORNL	- 01	Tc-99	1.21807E-02
ORNL	- 01	Cs-134	1.41905E+00
ORNL	- 01	Cs-137	1.87278E+00
ORNL	- 01	Ba-137m	1.77127E+00
ORNL	- 01	U-238	7.40991E-02
ORNL	- 02	H-3	9.73872E-01
ORNL	- 02	Co-60	4.62589E+00
ORNL	- 02	Ni-63	9.20310E+00
ORNL	- 02	Sr-90	8.18053E+02
ORNL	- 02	Y-90	8.18053E+02
ORNL	- 02	Tc-99	1.46081E-01
ORNL	- 02	Ru-106	7.98575E+01
ORNL	- 02	Rh-106	7.98575E+01
ORNL	- 02	Sb-125	2.29347E+01
ORNL	- 02	Te-125m	5.59977E+00
ORNL	- 02	Cs-134	9.28587E+01
ORNL	- 02	Cs-137	8.57008E+02
ORNL	- 02	Ba-137m	8.11236E+02
ORNL	- 02	Ce-144	2.67328E+02
ORNL	- 02	Pr-144	2.67328E+02
ORNL	- 02	Pr-144m	3.21378E+00
ORNL	- 02	Pm-147	6.52495E+02
ORNL	- 02	Sm-151	6.37887E+00
ORNL	- 02	Eu-152	9.73872E-02
ORNL	- 02	Eu-154	1.67019E+01
ORNL	- 02	Eu-155	1.32447E+01
ORNL	- 02	Pu-238	2.01105E+01
ORNL	- 02	Pu-239	1.94774E-01
ORNL	- 02	Pu-240	9.73872E-02
ORNL	- 02	Pu-241	2.24965E+01
ORNL	- 02	Am-241	2.92162E-01
ORNL	- 03	H-3	1.01979E-06
ORNL	- 03	Cr-51	1.11180E-04
ORNL	- 03	Mn-54	2.11650E-04
ORNL	- 03	Fe-55	7.89990E-04

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
ORNL	- 03	Fe-59	7.14000E-06
ORNL	- 03	Co-58	2.84070E-04
ORNL	- 03	Co-60	2.23201E-03
ORNL	- 03	Ni-59	1.02000E-05
ORNL	- 03	Ni-63	1.45957E-03
ORNL	- 03	Sr-90	8.56620E-04
ORNL	- 03	Y-90	8.56620E-04
ORNL	- 03	Zr-95	8.67000E-06
ORNL	- 03	Tc-99	1.52968E-07
ORNL	- 03	Ru-106	8.36224E-05
ORNL	- 03	Rh-106	8.36224E-05
ORNL	- 03	Sb-125	2.40160E-05
ORNL	- 03	Te-125m	5.86377E-06
ORNL	- 03	Cs-134	9.72366E-05
ORNL	- 03	Cs-137	8.97412E-04
ORNL	- 03	Ba-137m	8.49482E-04
ORNL	- 03	Ce-144	2.79931E-04
ORNL	- 03	Pr-144	2.79931E-04
ORNL	- 03	Pr-144m	3.36529E-06
ORNL	- 03	Pm-147	6.83257E-04
ORNL	- 03	Sm-151	6.67960E-06
ORNL	- 03	Eu-152	1.01979E-07
ORNL	- 03	Eu-154	1.74893E-05
ORNL	- 03	Eu-155	1.38691E-05
ORNL	- 03	Pu-238	2.10586E-05
ORNL	- 03	Pu-239	2.03957E-07
ORNL	- 03	Pu-240	1.01979E-07
ORNL	- 03	Pu-241	2.35571E-05
ORNL	- 03	Am-241	3.05936E-07
ORNL	- 06	Tl-208	1.79530E-05
ORNL	- 06	Pb-212	4.75227E-05
ORNL	- 06	Bi-212	4.75227E-05
ORNL	- 06	Po-212	3.06258E-05
ORNL	- 06	Po-216	4.75227E-05
ORNL	- 06	Ra-224	4.75227E-05
ORNL	- 06	Ra-228	2.84080E-04
ORNL	- 06	Ac-228	2.84080E-04
ORNL	- 06	Th-228	4.75227E-05
ORNL	- 06	Th-231	2.73520E-04
ORNL	- 06	Th-232	2.88305E-03
ORNL	- 06	Th-234	3.50580E-01
ORNL	- 06	Pa-234	3.59061E-05
ORNL	- 06	Pa-234m	3.50580E-01
ORNL	- 06	U-235	2.72464E-04
ORNL	- 06	U-238	3.50580E-01
ORNL	- 06	Pu-238	2.76688E-02
ORNL	- 06	Pu-239	2.11212E-03
ORNL	- 06	Pu-240	7.39242E-03
ORNL	- 06	Pu-241	1.01804E+00
ORNL	- 06	Am-241	4.22424E-05
ORNL	- 06	Cm-242	5.91394E-04
ORNL	- 06	Cm-244	2.11212E-04
ORNL	- 07	H-3	9.56532E+01
ORNL	- 07	C-14	4.70426E+00
ORNL	- 07	Mn-54	5.30013E+02
ORNL	- 07	Co-58	4.89243E+02
ORNL	- 07	Co-60	1.41363E+03
ORNL	- 07	Sr-90	6.64868E+02
ORNL	- 07	Y-90	6.64868E+02
ORNL	- 07	Tc-99	9.40851E+00
ORNL	- 07	Cs-134	1.09609E+03
ORNL	- 07	Cs-137	1.44656E+03
ORNL	- 07	Ba-137m	1.36815E+03

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
ORNL	- 07	U-238	5.72351E+01
Pantex	- 02	H-3	1.92097E-03
Pantex	- 02	Tl-208	1.71876E-09
Pantex	- 02	Pb-212	4.54966E-09
Pantex	- 02	Bi-212	4.54966E-09
Pantex	- 02	Po-212	2.93200E-09
Pantex	- 02	Po-216	4.54966E-09
Pantex	- 02	Ra-224	4.54966E-09
Pantex	- 02	Ra-228	2.71968E-08
Pantex	- 02	Ac-228	2.71968E-08
Pantex	- 02	Th-228	4.54966E-09
Pantex	- 02	Th-231	2.61858E-08
Pantex	- 02	Th-232	2.76013E-07
Pantex	- 02	Th-234	3.35633E-05
Pantex	- 02	Pa-234	3.43752E-09
Pantex	- 02	Pa-234m	3.35633E-05
Pantex	- 02	U-235	2.60847E-08
Pantex	- 02	U-238	3.35633E-05
Pantex	- 04	H-3	8.88250E-02
Pantex	- 04	Tl-208	7.94750E-08
Pantex	- 04	Pb-212	2.10375E-07
Pantex	- 04	Bi-212	2.10375E-07
Pantex	- 04	Po-212	1.35575E-07
Pantex	- 04	Po-216	2.10375E-07
Pantex	- 04	Ra-224	2.10375E-07
Pantex	- 04	Ra-228	1.25757E-06
Pantex	- 04	Ac-228	1.25757E-06
Pantex	- 04	Th-228	2.10375E-07
Pantex	- 04	Th-231	1.21082E-06
Pantex	- 04	Th-232	1.27627E-05
Pantex	- 04	Th-234	1.55196E-03
Pantex	- 04	Pa-234	1.58950E-07
Pantex	- 04	Pa-234m	1.55196E-03
Pantex	- 04	U-235	1.20615E-06
Pantex	- 04	U-238	1.55196E-03
Pantex	- 08	H-3	1.87150E+00
Pantex	- 08	Tl-208	1.67450E-06
Pantex	- 08	Pb-212	4.43250E-06
Pantex	- 08	Bi-212	4.43250E-06
Pantex	- 08	Po-212	2.85650E-06
Pantex	- 08	Po-216	4.43250E-06
Pantex	- 08	Ra-224	4.43250E-06
Pantex	- 08	Ra-228	2.64965E-05
Pantex	- 08	Ac-228	2.64965E-05
Pantex	- 08	Th-228	4.43250E-06
Pantex	- 08	Th-231	2.55115E-05
Pantex	- 08	Th-232	2.68905E-04
Pantex	- 08	Th-234	3.26990E-02
Pantex	- 08	Pa-234	3.34900E-06
Pantex	- 08	Pa-234m	3.26990E-02
Pantex	- 08	U-235	2.54130E-05
Pantex	- 08	U-238	3.26990E-02
PORTS	- 01	Tl-208	4.38034E-07
PORTS	- 01	Pb-212	1.15950E-06
PORTS	- 01	Bi-212	1.15950E-06
PORTS	- 01	Po-212	7.47235E-07
PORTS	- 01	Po-216	1.15950E-06
PORTS	- 01	Ra-224	1.15950E-06
PORTS	- 01	Ra-228	6.93125E-06
PORTS	- 01	Ac-228	6.93125E-06
PORTS	- 01	Th-228	1.15950E-06
PORTS	- 01	Th-231	6.67359E-06
PORTS	- 01	Th-232	7.03432E-05

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
PORTS	- 01	Th-234	8.55379E-03
PORTS	- 01	Pa-234	8.76069E-07
PORTS	- 01	Pa-234m	8.55379E-03
PORTS	- 01	U-235	6.64782E-06
PORTS	- 01	U-238	8.55379E-03
PORTS	- 04	Tl-208	2.97500E-06
PORTS	- 04	Pb-212	7.87500E-06
PORTS	- 04	Bi-212	7.87500E-06
PORTS	- 04	Po-212	5.07500E-06
PORTS	- 04	Po-216	7.87500E-06
PORTS	- 04	Ra-224	7.87500E-06
PORTS	- 04	Ra-228	4.70750E-05
PORTS	- 04	Ac-228	4.70750E-05
PORTS	- 04	Th-228	7.87500E-06
PORTS	- 04	Th-231	4.53250E-05
PORTS	- 04	Th-232	4.77750E-04
PORTS	- 04	Th-234	5.80947E-02
PORTS	- 04	Pa-234	5.95000E-06
PORTS	- 04	Pa-234m	5.80947E-02
PORTS	- 04	U-235	4.51500E-05
PORTS	- 04	U-238	5.80947E-02
PORTS	- 06	Tl-208	1.55062E-08
PORTS	- 06	Pb-212	4.10459E-08
PORTS	- 06	Bi-212	4.10459E-08
PORTS	- 06	Po-212	2.64518E-08
PORTS	- 06	Po-216	4.10459E-08
PORTS	- 06	Ra-224	4.10459E-08
PORTS	- 06	Ra-228	2.45363E-07
PORTS	- 06	Ac-228	2.45363E-07
PORTS	- 06	Th-228	4.10459E-08
PORTS	- 06	Th-231	2.36242E-07
PORTS	- 06	Th-232	2.49012E-06
PORTS	- 06	Th-234	3.02800E-04
PORTS	- 06	Pa-234	3.10124E-08
PORTS	- 06	Pa-234m	3.02800E-04
PORTS	- 06	U-235	2.35330E-07
PORTS	- 06	U-238	3.02800E-04
PORTS	- 09	Tl-208	2.76692E-08
PORTS	- 09	Pb-212	7.32422E-08
PORTS	- 09	Bi-212	7.32422E-08
PORTS	- 09	Po-212	4.72005E-08
PORTS	- 09	Po-216	7.32422E-08
PORTS	- 09	Ra-224	7.32422E-08
PORTS	- 09	Ra-228	4.37825E-07
PORTS	- 09	Ac-228	4.37825E-07
PORTS	- 09	Th-228	7.32422E-08
PORTS	- 09	Th-231	4.21549E-07
PORTS	- 09	Th-232	4.44336E-06
PORTS	- 09	Th-234	5.40316E-04
PORTS	- 09	Pa-234	5.53385E-08
PORTS	- 09	Pa-234m	5.40316E-04
PORTS	- 09	U-235	4.19922E-07
PORTS	- 09	U-238	5.40316E-04
PPPL	- 02	H-3	3.74400E-03
PPPL	- 02	Cr-51	8.50200E-04
PPPL	- 02	Mn-54	1.61850E-03
PPPL	- 02	Fe-55	6.04110E-03
PPPL	- 02	Fe-59	5.46000E-05
PPPL	- 02	Co-58	2.17230E-03
PPPL	- 02	Co-60	1.70313E-02
PPPL	- 02	Ni-59	7.80000E-05
PPPL	- 02	Ni-63	1.10877E-02

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
PPPL	- 02	Zr-95	6.63000E-05
PPPL	- 03	H-3	1.92000E-01
PPPL	- 09	H-3	5.80000E-03
PGDP	- 01	Tc-99	9.07110E-04
PGDP	- 01	Tl-208	3.81666E-06
PGDP	- 01	Pb-212	1.01029E-05
PGDP	- 01	Bi-212	1.01029E-05
PGDP	- 01	Po-212	6.51078E-06
PGDP	- 01	Po-216	1.01029E-05
PGDP	- 01	Ra-224	1.01029E-05
PGDP	- 01	Ra-228	6.03931E-05
PGDP	- 01	Ac-228	6.03931E-05
PGDP	- 01	Th-228	1.01029E-05
PGDP	- 01	Th-231	5.81480E-05
PGDP	- 01	Th-232	6.12911E-04
PGDP	- 01	Th-234	7.45305E-02
PGDP	- 01	Pa-234	7.63333E-06
PGDP	- 01	Pa-234m	7.45305E-02
PGDP	- 01	U-235	5.79235E-05
PGDP	- 01	U-238	7.45305E-02
PGDP	- 01	Np-237	6.80332E-04
PGDP	- 01	Pu-239	6.80332E-04
PGDP	- 02	Tc-99	6.52526E-03
PGDP	- 02	Tl-208	2.74550E-05
PGDP	- 02	Pb-212	7.26751E-05
PGDP	- 02	Bi-212	7.26751E-05
PGDP	- 02	Po-212	4.68350E-05
PGDP	- 02	Po-216	7.26751E-05
PGDP	- 02	Ra-224	7.26751E-05
PGDP	- 02	Ra-228	4.34435E-04
PGDP	- 02	Ac-228	4.34435E-04
PGDP	- 02	Th-228	7.26751E-05
PGDP	- 02	Th-231	4.18285E-04
PGDP	- 02	Th-232	4.40895E-03
PGDP	- 02	Th-234	5.36132E-01
PGDP	- 02	Pa-234	5.49101E-05
PGDP	- 02	Pa-234m	5.36132E-01
PGDP	- 02	U-235	4.16670E-04
PGDP	- 02	U-238	5.36132E-01
PGDP	- 02	Np-237	4.89394E-03
PGDP	- 02	Pu-239	4.89394E-03
PGDP	- 03	Tc-99	1.03739E-03
PGDP	- 03	Tl-208	4.36485E-06
PGDP	- 03	Pb-212	1.15540E-05
PGDP	- 03	Bi-212	1.15540E-05
PGDP	- 03	Po-212	7.44593E-06
PGDP	- 03	Po-216	1.15540E-05
PGDP	- 03	Ra-224	1.15540E-05
PGDP	- 03	Ra-228	6.90674E-05
PGDP	- 03	Ac-228	6.90674E-05
PGDP	- 03	Th-228	1.15540E-05
PGDP	- 03	Th-231	6.64999E-05
PGDP	- 03	Th-232	7.00944E-04
PGDP	- 03	Th-234	8.52354E-02
PGDP	- 03	Pa-234	8.72971E-06
PGDP	- 03	Pa-234m	8.52354E-02
PGDP	- 03	U-235	6.62431E-05
PGDP	- 03	U-238	8.52354E-02
PGDP	- 03	Np-237	7.78049E-04
PGDP	- 03	Pu-239	7.78049E-04

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
PGDP	- 04	Tc-99	1.68093E-04
PGDP	- 04	Tl-208	7.07251E-07
PGDP	- 04	Pb-212	1.87213E-06
PGDP	- 04	Bi-212	1.87213E-06
PGDP	- 04	Po-212	1.20648E-06
PGDP	- 04	Po-216	1.87213E-06
PGDP	- 04	Ra-224	1.87213E-06
PGDP	- 04	Ra-228	1.11912E-05
PGDP	- 04	Ac-228	1.11912E-05
PGDP	- 04	Th-228	1.87213E-06
PGDP	- 04	Th-231	1.07751E-05
PGDP	- 04	Th-232	1.13576E-04
PGDP	- 04	Th-234	1.38109E-02
PGDP	- 04	Pa-234	1.41450E-06
PGDP	- 04	Pa-234m	1.38109E-02
PGDP	- 04	U-235	1.07335E-05
PGDP	- 04	U-238	1.38109E-02
PGDP	- 04	Np-237	1.26069E-04
PGDP	- 04	Pu-239	1.26069E-04
PGDP	- 06	Tc-99	3.95875E-05
PGDP	- 06	Tl-208	1.66620E-07
PGDP	- 06	Pb-212	4.41053E-07
PGDP	- 06	Bi-212	4.41053E-07
PGDP	- 06	Po-212	2.84234E-07
PGDP	- 06	Po-216	4.41053E-07
PGDP	- 06	Ra-224	4.41053E-07
PGDP	- 06	Ra-228	2.63651E-06
PGDP	- 06	Ac-228	2.63651E-06
PGDP	- 06	Th-228	4.41053E-07
PGDP	- 06	Th-231	2.53850E-06
PGDP	- 06	Th-232	2.67572E-05
PGDP	- 06	Th-234	3.25369E-03
PGDP	- 06	Pa-234	3.33240E-07
PGDP	- 06	Pa-234m	3.25369E-03
PGDP	- 06	U-235	2.52870E-06
PGDP	- 06	U-238	3.25369E-03
PGDP	- 06	Np-237	2.96906E-05
PGDP	- 06	Pu-239	2.96906E-05
PGDP	- 08	Tc-99	9.69038E-05
PGDP	- 08	Tl-208	4.07722E-07
PGDP	- 08	Pb-212	1.07926E-06
PGDP	- 08	Bi-212	1.07926E-06
PGDP	- 08	Po-212	6.95527E-07
PGDP	- 08	Po-216	1.07926E-06
PGDP	- 08	Ra-224	1.07926E-06
PGDP	- 08	Ra-228	6.45161E-06
PGDP	- 08	Ac-228	6.45161E-06
PGDP	- 08	Th-228	1.07926E-06
PGDP	- 08	Th-231	6.21177E-06
PGDP	- 08	Th-232	6.54754E-05
PGDP	- 08	Th-234	7.96186E-03
PGDP	- 08	Pa-234	8.15445E-07
PGDP	- 08	Pa-234m	7.96186E-03
PGDP	- 08	U-235	6.18779E-06
PGDP	- 08	U-238	7.96186E-03
PGDP	- 08	Np-237	7.26778E-05
PGDP	- 08	Pu-239	7.26778E-05
PGDP	- 09	Tc-99	6.71874E-05
PGDP	- 09	Tl-208	2.82691E-07
PGDP	- 09	Pb-212	7.48300E-07
PGDP	- 09	Bi-212	7.48300E-07
PGDP	- 09	Po-212	4.82238E-07
PGDP	- 09	Po-216	7.48300E-07

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
PGDP	- 09	Ra-224	7.48300E-07
PGDP	- 09	Ra-228	4.47317E-06
PGDP	- 09	Ac-228	4.47317E-06
PGDP	- 09	Th-228	7.48300E-07
PGDP	- 09	Th-231	4.30688E-06
PGDP	- 09	Th-232	4.53968E-05
PGDP	- 09	Th-234	5.52029E-03
PGDP	- 09	Pa-234	5.65382E-07
PGDP	- 09	Pa-234m	5.52029E-03
PGDP	- 09	U-235	4.29025E-06
PGDP	- 09	U-238	5.52029E-03
PGDP	- 09	Np-237	5.03906E-05
PGDP	- 09	Pu-239	5.03906E-05
Pinellas	- 03	H-3	1.99278E+04
RFETS	A 01	Tl-208	2.45676E-05
RFETS	A 01	Pb-212	6.50320E-05
RFETS	A 01	Bi-212	6.50320E-05
RFETS	A 01	Po-212	4.19095E-05
RFETS	A 01	Po-216	6.50320E-05
RFETS	A 01	Ra-224	6.50320E-05
RFETS	A 01	Ra-228	3.88747E-04
RFETS	A 01	Ac-228	3.88747E-04
RFETS	A 01	Th-228	6.50320E-05
RFETS	A 01	Th-231	3.74295E-04
RFETS	A 01	Th-232	3.94528E-03
RFETS	A 01	Th-234	4.79749E-01
RFETS	A 01	Pa-234	4.91353E-05
RFETS	A 01	Pa-234m	4.79749E-01
RFETS	A 01	U-235	3.72850E-04
RFETS	A 01	U-238	4.79749E-01
RFETS	A 01	Pu-238	3.78631E-01
RFETS	A 01	Pu-239	2.89031E-02
RFETS	A 01	Pu-240	1.01161E-01
RFETS	A 01	Pu-241	1.39313E+01
RFETS	A 01	Am-241	5.78063E-04
RFETS	A 01	Cm-242	8.09288E-03
RFETS	A 01	Cm-244	2.89031E-03
RFETS	- 02	Tl-208	6.56023E-06
RFETS	- 02	Pb-212	1.73653E-05
RFETS	- 02	Bi-212	1.73653E-05
RFETS	- 02	Po-212	1.11909E-05
RFETS	- 02	Po-216	1.73653E-05
RFETS	- 02	Ra-224	1.73653E-05
RFETS	- 02	Ra-228	1.03806E-04
RFETS	- 02	Ac-228	1.03806E-04
RFETS	- 02	Th-228	1.73653E-05
RFETS	- 02	Th-231	9.99470E-05
RFETS	- 02	Th-232	1.05349E-03
RFETS	- 02	Th-234	1.28105E-01
RFETS	- 02	Pa-234	1.31204E-05
RFETS	- 02	Pa-234m	1.28105E-01
RFETS	- 02	U-235	9.95611E-05
RFETS	- 02	U-238	1.28105E-01
RFETS	- 02	Pu-238	1.01104E-01
RFETS	- 02	Pu-239	7.71792E-03
RFETS	- 02	Pu-240	2.70127E-02
RFETS	- 02	Pu-241	3.72003E+00
RFETS	- 02	Am-241	1.54358E-04
RFETS	- 02	Cm-242	2.16101E-03
RFETS	- 02	Cm-244	7.71792E-04
RFETS	A 03	Tl-208	5.16795E-08
RFETS	A 03	Pb-212	1.36798E-07
RFETS	A 03	Bi-212	1.36798E-07
RFETS	A 03	Po-212	8.81592E-08

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
RFETS	A 03	Po-216	1.36798E-07
RFETS	A 03	Ra-224	1.36798E-07
RFETS	A 03	Ra-228	8.17753E-07
RFETS	A 03	Ac-228	8.17753E-07
RFETS	A 03	Th-228	1.36798E-07
RFETS	A 03	Th-231	7.87353E-07
RFETS	A 03	Th-232	8.29913E-06
RFETS	A 03	Th-234	1.00918E-03
RFETS	A 03	Pa-234	1.03359E-07
RFETS	A 03	Pa-234m	1.00918E-03
RFETS	A 03	U-235	7.84313E-07
RFETS	A 03	U-238	1.00918E-03
RFETS	A 03	Pu-238	7.96473E-04
RFETS	A 03	Pu-239	6.07995E-05
RFETS	A 03	Pu-240	2.12798E-04
RFETS	A 03	Pu-241	2.93053E-02
RFETS	A 03	Am-241	1.21599E-06
RFETS	A 03	Cm-242	1.70238E-05
RFETS	A 03	Cm-244	6.07995E-06
RFETS	- 04	Tl-208	3.67524E-06
RFETS	- 04	Pb-212	9.72858E-06
RFETS	- 04	Bi-212	9.72858E-06
RFETS	- 04	Po-212	6.26953E-06
RFETS	- 04	Po-216	9.72858E-06
RFETS	- 04	Ra-224	9.72858E-06
RFETS	- 04	Ra-228	5.81553E-05
RFETS	- 04	Ac-228	5.81553E-05
RFETS	- 04	Th-228	9.72858E-06
RFETS	- 04	Th-231	5.59934E-05
RFETS	- 04	Th-232	5.90200E-04
RFETS	- 04	Th-234	7.17688E-02
RFETS	- 04	Pa-234	7.35048E-06
RFETS	- 04	Pa-234m	7.17688E-02
RFETS	- 04	U-235	5.57772E-05
RFETS	- 04	U-238	7.17688E-02
RFETS	- 04	Pu-238	5.66419E-02
RFETS	- 04	Pu-239	4.32381E-03
RFETS	- 04	Pu-240	1.51333E-02
RFETS	- 04	Pu-241	2.08407E+00
RFETS	- 04	Am-241	8.64763E-05
RFETS	- 04	Cm-242	1.21066E-03
RFETS	- 04	Cm-244	4.32381E-04
RFETS	- 06	Tl-208	1.19055E-06
RFETS	- 06	Pb-212	3.15146E-06
RFETS	- 06	Bi-212	3.15146E-06
RFETS	- 06	Po-212	2.03094E-06
RFETS	- 06	Po-216	3.15146E-06
RFETS	- 06	Ra-224	3.15146E-06
RFETS	- 06	Ra-228	1.88387E-05
RFETS	- 06	Ac-228	1.88387E-05
RFETS	- 06	Th-228	3.15146E-06
RFETS	- 06	Th-231	1.81384E-05
RFETS	- 06	Th-232	1.91188E-04
RFETS	- 06	Th-234	2.32487E-02
RFETS	- 06	Pa-234	2.38110E-06
RFETS	- 06	Pa-234m	2.32487E-02
RFETS	- 06	U-235	1.80684E-05
RFETS	- 06	U-238	2.32487E-02
RFETS	- 06	Pu-238	1.83485E-02
RFETS	- 06	Pu-239	1.40065E-03
RFETS	- 06	Pu-240	4.90228E-03
RFETS	- 06	Pu-241	6.75114E-01
RFETS	- 06	Am-241	2.80130E-05

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
RFETS	- 06	Cm-242	3.92182E-04
RFETS	- 06	Cm-244	1.40065E-04
RFETS	- 09	Tl-208	3.51075E-08
RFETS	- 09	Pb-212	9.29317E-08
RFETS	- 09	Bi-212	9.29317E-08
RFETS	- 09	Po-212	5.98893E-08
RFETS	- 09	Po-216	9.29317E-08
RFETS	- 09	Ra-224	9.29317E-08
RFETS	- 09	Ra-228	5.55525E-07
RFETS	- 09	Ac-228	5.55525E-07
RFETS	- 09	Th-228	9.29317E-08
RFETS	- 09	Th-231	5.34873E-07
RFETS	- 09	Th-232	5.63785E-06
RFETS	- 09	Th-234	6.85567E-04
RFETS	- 09	Pa-234	7.02150E-08
RFETS	- 09	Pa-234m	6.85567E-04
RFETS	- 09	U-235	5.32808E-07
RFETS	- 09	U-238	6.85567E-04
RFETS	- 09	Pu-238	5.41069E-04
RFETS	- 09	Pu-239	4.13029E-05
RFETS	- 09	Pu-240	1.44560E-04
RFETS	- 09	Pu-241	1.99080E-02
RFETS	- 09	Am-241	8.26059E-07
RFETS	- 09	Cm-242	1.15648E-05
RFETS	- 09	Cm-244	4.13029E-06
RMI	- 01	Tl-208	1.10915E-08
RMI	- 01	Pb-212	2.93599E-08
RMI	- 01	Bi-212	2.93599E-08
RMI	- 01	Po-212	1.89208E-08
RMI	- 01	Po-216	2.93599E-08
RMI	- 01	Ra-224	2.93599E-08
RMI	- 01	Ra-228	1.75507E-07
RMI	- 01	Ac-228	1.75507E-07
RMI	- 01	Th-228	2.93599E-08
RMI	- 01	Th-231	1.68982E-07
RMI	- 01	Th-232	1.78117E-06
RMI	- 01	Th-234	2.16591E-04
RMI	- 01	Pa-234	2.21830E-08
RMI	- 01	Pa-234m	2.16591E-04
RMI	- 01	U-235	1.68330E-07
RMI	- 01	U-238	2.16591E-04
RMI	- 02	Tl-208	3.21889E-07
RMI	- 02	Pb-212	8.52059E-07
RMI	- 02	Bi-212	8.52059E-07
RMI	- 02	Po-212	5.49104E-07
RMI	- 02	Po-216	8.52059E-07
RMI	- 02	Ra-224	8.52059E-07
RMI	- 02	Ra-228	5.09342E-06
RMI	- 02	Ac-228	5.09342E-06
RMI	- 02	Th-228	8.52059E-07
RMI	- 02	Th-231	4.90407E-06
RMI	- 02	Th-232	5.16915E-05
RMI	- 02	Th-234	6.28573E-03
RMI	- 02	Pa-234	6.43778E-07
RMI	- 02	Pa-234m	6.28573E-03
RMI	- 02	U-235	4.88513E-06
RMI	- 02	U-238	6.28573E-03
RMI	- 03	Tl-208	3.35622E-09
RMI	- 03	Pb-212	8.88412E-09
RMI	- 03	Bi-212	8.88412E-09
RMI	- 03	Po-212	5.72532E-09
RMI	- 03	Po-216	8.88412E-09
RMI	- 03	Ra-224	8.88412E-09

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
RMI	- 03	Ra-228	5.31073E-08
RMI	- 03	Ac-228	5.31073E-08
RMI	- 03	Th-228	8.88412E-09
RMI	- 03	Th-231	5.11330E-08
RMI	- 03	Th-232	5.38970E-07
RMI	- 03	Th-234	6.55391E-05
RMI	- 03	Pa-234	6.71244E-09
RMI	- 03	Pa-234m	6.55391E-05
RMI	- 03	U-235	5.09356E-08
RMI	- 03	U-238	6.55391E-05
RMI	- 06	Tl-208	1.66543E-08
RMI	- 06	Pb-212	4.40850E-08
RMI	- 06	Bi-212	4.40850E-08
RMI	- 06	Po-212	2.84103E-08
RMI	- 06	Po-216	4.40850E-08
RMI	- 06	Ra-224	4.40850E-08
RMI	- 06	Ra-228	2.63530E-07
RMI	- 06	Ac-228	2.63530E-07
RMI	- 06	Th-228	4.40850E-08
RMI	- 06	Th-231	2.53734E-07
RMI	- 06	Th-232	2.67449E-06
RMI	- 06	Th-234	3.25220E-04
RMI	- 06	Pa-234	3.33087E-08
RMI	- 06	Pa-234m	3.25220E-04
RMI	- 06	U-235	2.52754E-07
RMI	- 06	U-238	3.25220E-04
RMI	- 09	Tl-208	4.91827E-09
RMI	- 09	Pb-212	1.30189E-08
RMI	- 09	Bi-212	1.30189E-08
RMI	- 09	Po-212	8.39000E-09
RMI	- 09	Po-216	1.30189E-08
RMI	- 09	Ra-224	1.30189E-08
RMI	- 09	Ra-228	7.78244E-08
RMI	- 09	Ac-228	7.78244E-08
RMI	- 09	Th-228	1.30189E-08
RMI	- 09	Th-231	7.49313E-08
RMI	- 09	Th-232	7.89817E-07
RMI	- 09	Th-234	9.60423E-05
RMI	- 09	Pa-234	9.83655E-09
RMI	- 09	Pa-234m	9.60423E-05
RMI	- 09	U-235	7.46420E-08
RMI	- 09	U-238	9.60423E-05
SLAC	- 02	Cr-51	3.86085E-03
SLAC	- 02	Mn-54	7.34980E-03
SLAC	- 02	Fe-55	2.74333E-02
SLAC	- 02	Fe-59	2.47945E-04
SLAC	- 02	Co-58	9.86467E-03
SLAC	- 02	Co-60	7.73411E-02
SLAC	- 02	Ni-59	3.54207E-04
SLAC	- 02	Ni-63	5.03505E-02
SLAC	- 02	Zr-95	3.01076E-04
SLAC	- 06	Cr-51	7.37073E-06
SLAC	- 06	Mn-54	1.40314E-05
SLAC	- 06	Fe-55	5.23727E-05
SLAC	- 06	Fe-59	4.73349E-07
SLAC	- 06	Co-58	1.88325E-05
SLAC	- 06	Co-60	1.47651E-04
SLAC	- 06	Ni-59	6.76214E-07
SLAC	- 06	Ni-63	9.61238E-05
SLAC	- 06	Zr-95	5.74782E-07
SLAC	- 09	Cr-51	2.10597E-07

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
SLAC	- 09	Mn-54	4.00908E-07
SLAC	- 09	Fe-55	1.49640E-06
SLAC	- 09	Fe-59	1.35246E-08
SLAC	- 09	Co-58	5.38087E-07
SLAC	- 09	Co-60	4.21872E-06
SLAC	- 09	Ni-59	1.93209E-08
SLAC	- 09	Ni-63	2.74646E-06
SLAC	- 09	Zr-95	1.64227E-08
SNL-NM	- 02	H-3	3.00073E+00
SNL-NM	- 02	Co-60	2.85009E-05
SNL-NM	- 02	Ni-63	5.67019E-05
SNL-NM	- 02	Sr-90	5.04017E-03
SNL-NM	- 02	Y-90	5.04017E-03
SNL-NM	- 02	Tc-99	9.00030E-07
SNL-NM	- 02	Ru-106	4.92016E-04
SNL-NM	- 02	Rh-106	4.92016E-04
SNL-NM	- 02	Sb-125	1.41304E-04
SNL-NM	- 02	Te-125m	3.45011E-05
SNL-NM	- 02	Cs-134	5.72119E-04
SNL-NM	- 02	Cs-137	5.28017E-03
SNL-NM	- 02	Ba-137m	4.99816E-03
SNL-NM	- 02	Ce-144	1.64705E-03
SNL-NM	- 02	Pr-144	1.64705E-03
SNL-NM	- 02	Pr-144m	1.98006E-05
SNL-NM	- 02	Pm-147	4.02013E-03
SNL-NM	- 02	Sm-151	3.93013E-05
SNL-NM	- 02	Eu-152	6.00020E-07
SNL-NM	- 02	Eu-154	1.02903E-04
SNL-NM	- 02	Eu-155	8.16027E-05
SNL-NM	- 02	Pu-238	7.87430E-02
SNL-NM	- 02	Pu-239	6.00266E-03
SNL-NM	- 02	Pu-240	2.10057E-02
SNL-NM	- 02	Pu-241	2.89284E+00
SNL-NM	- 02	Am-241	1.21829E-04
SNL-NM	- 02	Cm-242	1.68040E-03
SNL-NM	- 02	Cm-244	6.00146E-04
SNL-NM	- 04	Tl-208	5.10124E-06
SNL-NM	- 04	Pb-212	1.35032E-05
SNL-NM	- 04	Bi-212	1.35032E-05
SNL-NM	- 04	Po-212	8.70212E-06
SNL-NM	- 04	Po-216	1.35032E-05
SNL-NM	- 04	Ra-224	1.35032E-05
SNL-NM	- 04	Ra-228	8.07196E-05
SNL-NM	- 04	Ac-228	8.07196E-05
SNL-NM	- 04	Th-228	1.35032E-05
SNL-NM	- 04	Th-231	7.77189E-05
SNL-NM	- 04	Th-232	8.19199E-04
SNL-NM	- 04	Th-234	9.96152E-02
SNL-NM	- 04	Pa-234	1.02024E-05
SNL-NM	- 04	Pa-234m	9.96152E-02
SNL-NM	- 04	U-235	7.74188E-05
SNL-NM	- 04	U-238	9.96152E-02
SNL-NM	- 05	Cr-51	6.54159E-04
SNL-NM	- 05	Mn-54	1.24530E-03
SNL-NM	- 05	Fe-55	4.64813E-03
SNL-NM	- 05	Fe-59	4.20102E-05
SNL-NM	- 05	Co-58	1.67140E-03
SNL-NM	- 05	Co-60	1.31041E-02
SNL-NM	- 05	Ni-59	6.00146E-05
SNL-NM	- 05	Ni-63	8.53108E-03
SNL-N	- 05	Zr-95	5.10124E-05
SNL-CA	- 01	H-3	2.55780E+00

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
SNL-CA	- 01	Fe-55	3.15000E-01
SNL-CA	- 01	Co-60	3.15000E-01
SNL-CA	- 01	Tl-208	5.35500E-06
SNL-CA	- 01	Pb-212	1.41750E-05
SNL-CA	- 01	Bi-212	1.41750E-05
SNL-CA	- 01	Po-212	9.13500E-06
SNL-CA	- 01	Po-216	1.41750E-05
SNL-CA	- 01	Ra-224	1.41750E-05
SNL-CA	- 01	Ra-228	8.47350E-05
SNL-CA	- 01	Ac-228	8.47350E-05
SNL-CA	- 01	Th-228	1.41750E-05
SNL-CA	- 01	Th-231	8.15850E-05
SNL-CA	- 01	Th-232	8.59950E-04
SNL-CA	- 01	Th-234	1.04570E-01
SNL-CA	- 01	Pa-234	1.07100E-05
SNL-CA	- 01	Pa-234m	1.04570E-01
SNL-CA	- 01	U-235	8.12700E-05
SNL-CA	- 01	U-238	1.04570E-01
SNL-CA	- 02	H-3	1.38298E+01
SNL-CA	- 02	Tl-208	5.86791E-05
SNL-CA	- 02	Pb-212	1.55327E-04
SNL-CA	- 02	Bi-212	1.55327E-04
SNL-CA	- 02	Po-212	1.00099E-04
SNL-CA	- 02	Po-216	1.55327E-04
SNL-CA	- 02	Ra-224	1.55327E-04
SNL-CA	- 02	Ra-228	9.28511E-04
SNL-CA	- 02	Ac-228	9.28511E-04
SNL-CA	- 02	Th-228	1.55327E-04
SNL-CA	- 02	Th-231	8.93994E-04
SNL-CA	- 02	Th-232	9.42318E-03
SNL-CA	- 02	Th-234	1.14586E+00
SNL-CA	- 02	Pa-234	1.17358E-04
SNL-CA	- 02	Pa-234m	1.14586E+00
SNL-CA	- 02	U-235	8.90542E-04
SNL-CA	- 02	U-238	1.14586E+00
SNL-CA	- 03	H-3	1.94247E+02
SNL-CA	- 09	H-3	2.80151E+04
SRS	- 01	H-3	9.16039E-03
SRS	- 01	Cr-51	9.98692E-01
SRS	- 01	Mn-54	1.90118E+00
SRS	- 01	Fe-55	7.09621E+00
SRS	- 01	Fe-59	6.41362E-02
SRS	- 01	Co-58	2.55170E+00
SRS	- 01	Co-60	2.00494E+01
SRS	- 01	Ni-59	9.16232E-02
SRS	- 01	Ni-63	1.31108E+01
SRS	- 01	Sr-90	7.69473E+00
SRS	- 01	Y-90	7.69473E+00
SRS	- 01	Zr-95	7.78797E-02
SRS	- 01	Tc-99	1.37405E-03
SRS	- 01	Ru-106	7.51152E-01
SRS	- 01	Rh-106	7.51152E-01
SRS	- 01	Sb-125	2.15727E-01
SRS	- 01	Te-125m	5.26722E-02
SRS	- 01	Cs-134	8.73443E-01
SRS	- 01	Cs-137	8.06114E+00
SRS	- 01	Ba-137m	7.63061E+00
SRS	- 01	Ce-144	2.51452E+00
SRS	- 01	Pr-144	2.51452E+00
SRS	- 01	Pr-144m	3.02293E-02
SRS	- 01	Pm-147	6.13746E+00
SRS	- 01	Sm-151	6.00006E-02
SRS	- 01	Eu-152	9.16039E-04

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
SRS	- 01	Eu-154	1.57100E-01
SRS	- 01	Eu-155	1.24581E-01
SRS	- 01	Tl-208	6.53216E-04
SRS	- 01	Pb-212	1.72910E-03
SRS	- 01	Bi-212	1.72910E-03
SRS	- 01	Po-212	1.11430E-03
SRS	- 01	Po-216	1.72910E-03
SRS	- 01	Ra-224	1.72910E-03
SRS	- 01	Ra-228	1.03361E-02
SRS	- 01	Ac-228	1.03361E-02
SRS	- 01	Th-228	1.72910E-03
SRS	- 01	Th-231	9.95194E-03
SRS	- 01	Th-232	1.04898E-01
SRS	- 01	Th-234	1.27557E+01
SRS	- 01	Pa-234	1.30643E-03
SRS	- 01	Pa-234m	1.27557E+01
SRS	- 01	U-235	9.91351E-03
SRS	- 01	U-238	1.27557E+01
SRS	- 01	Pu-238	1.89162E-01
SRS	- 01	Pu-239	1.83207E-03
SRS	- 01	Pu-240	9.16039E-04
SRS	- 01	Pu-241	2.11605E-01
SRS	- 01	Am-241	2.74811E-03
SRS	- 02	H-3	1.19440E+04
SRS	- 02	C-14	1.02253E+00
SRS	- 02	Cr-51	1.29944E+02
SRS	- 02	Mn-54	3.62576E+02
SRS	- 02	Fe-55	9.23322E+02
SRS	- 02	Fe-59	8.34507E+00
SRS	- 02	Co-58	4.38357E+02
SRS	- 02	Co-60	2.91869E+03
SRS	- 02	Ni-59	1.19215E+01
SRS	- 02	Ni-63	1.71127E+03
SRS	- 02	Sr-90	1.62279E+03
SRS	- 02	Y-90	1.62279E+03
SRS	- 02	Zr-95	1.01333E+01
SRS	- 02	Tc-99	2.30904E+00
SRS	- 02	Ru-106	1.44308E+02
SRS	- 02	Rh-106	1.44308E+02
SRS	- 02	Sb-125	4.14446E+01
SRS	- 02	Te-125m	1.01191E+01
SRS	- 02	Cs-134	4.06052E+02
SRS	- 02	Cs-137	1.86310E+03
SRS	- 02	Ba-137m	1.76334E+03
SRS	- 02	Ce-144	4.83080E+02
SRS	- 02	Pr-144	4.83080E+02
SRS	- 02	Pr-144m	5.80752E+00
SRS	- 02	Pm-147	1.17910E+03
SRS	- 02	Sm-151	1.15270E+01
SRS	- 02	Eu-152	1.75985E-01
SRS	- 02	Eu-154	3.01815E+01
SRS	- 02	Eu-155	2.39340E+01
SRS	- 02	U-238	1.24407E+01
SRS	- 02	Pu-238	3.67131E+01
SRS	- 02	Pu-239	3.80374E-01
SRS	- 02	Pu-240	2.75398E-01
SRS	- 02	Pu-241	5.43432E+01
SRS	- 02	Am-241	5.28524E-01
SRS	- 02	Cm-242	7.95302E-03
SRS	- 02	Cm-244	2.84036E-03
SRS	- 03	H-3	1.33173E+00
SRS	- 03	C-14	6.54000E-02
SRS	- 03	Mn-54	7.36840E+00
SRS	- 03	Co-58	6.80160E+00

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
SRS	- 03	Co-60	1.96618E+01
SRS	- 03	Ni-63	1.82913E-02
SRS	- 03	Sr-90	1.08690E+01
SRS	- 03	Y-90	1.08690E+01
SRS	- 03	Tc-99	1.31090E-01
SRS	- 03	Ru-106	1.58718E-01
SRS	- 03	Rh-106	1.58718E-01
SRS	- 03	Sb-125	4.55832E-02
SRS	- 03	Te-125m	1.11296E-02
SRS	- 03	Cs-134	1.54227E+01
SRS	- 03	Cs-137	2.18138E+01
SRS	- 03	Ba-137m	2.06328E+01
SRS	- 03	Ce-144	5.31320E-01
SRS	- 03	Pr-144	5.31320E-01
SRS	- 03	Pr-144m	6.38745E-03
SRS	- 03	Pm-147	1.29684E+00
SRS	- 03	Sm-151	1.26781E-02
SRS	- 03	Eu-152	1.93559E-04
SRS	- 03	Eu-154	3.31954E-02
SRS	- 03	Eu-155	2.63240E-02
SRS	- 03	Tl-208	4.11400E-05
SRS	- 03	Pb-212	1.08900E-04
SRS	- 03	Bi-212	1.08900E-04
SRS	- 03	Po-212	7.01800E-05
SRS	- 03	Po-216	1.08900E-04
SRS	- 03	Ra-224	1.08900E-04
SRS	- 03	Ra-228	6.50980E-04
SRS	- 03	Ac-228	6.50980E-04
SRS	- 03	Th-228	1.08900E-04
SRS	- 03	Th-231	6.26780E-04
SRS	- 03	Th-232	6.60660E-03
SRS	- 03	Th-234	8.03367E-01
SRS	- 03	Pa-234	8.22800E-05
SRS	- 03	Pa-234m	8.03367E-01
SRS	- 03	U-235	6.24360E-04
SRS	- 03	U-238	1.59906E+00
SRS	- 03	Pu-238	3.99700E-02
SRS	- 03	Pu-239	3.87118E-04
SRS	- 03	Pu-240	1.93559E-04
SRS	- 03	Pu-241	4.47122E-02
SRS	- 03	Am-241	5.80678E-04
SRS	- 04	H-3	7.91833E-03
SRS	- 04	Co-60	3.76120E-02
SRS	- 04	Ni-63	7.48282E-02
SRS	- 04	Sr-90	6.65140E+00
SRS	- 04	Y-90	6.65140E+00
SRS	- 04	Tc-99	1.18775E-03
SRS	- 04	Ru-106	6.49303E-01
SRS	- 04	Rh-106	6.49303E-01
SRS	- 04	Sb-125	1.86476E-01
SRS	- 04	Te-125m	4.55304E-02
SRS	- 04	Cs-134	7.55013E-01
SRS	- 04	Cs-137	6.96813E+00
SRS	- 04	Ba-137m	6.59597E+00
SRS	- 04	Ce-144	2.17358E+00
SRS	- 04	Pr-144	2.17358E+00
SRS	- 04	Pr-144m	2.61305E-02
SRS	- 04	Pm-147	5.30528E+00
SRS	- 04	Sm-151	5.18651E-02
SRS	- 04	Eu-152	7.91833E-04
SRS	- 04	Eu-154	1.35799E-01
SRS	- 04	Eu-155	1.07689E-01
SRS	- 04	Tl-208	1.59732E-04
SRS	- 04	Pb-212	4.22820E-04
SRS	- 04	Bi-212	4.22820E-04

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
SRS	- 04	Po-212	2.72484E-04
SRS	- 04	Po-216	4.22820E-04
SRS	- 04	Ra-224	4.22820E-04
SRS	- 04	Ra-228	2.52752E-03
SRS	- 04	Ac-228	2.52752E-03
SRS	- 04	Th-228	4.22820E-04
SRS	- 04	Th-231	2.43356E-03
SRS	- 04	Th-232	2.56510E-02
SRS	- 04	Th-234	3.11919E+00
SRS	- 04	Pa-234	3.19464E-04
SRS	- 04	Pa-234m	3.11919E+00
SRS	- 04	U-235	2.42416E-03
SRS	- 04	U-238	3.11919E+00
SRS	- 04	Pu-238	4.77913E-01
SRS	- 04	Pu-239	2.55836E-02
SRS	- 04	Pu-240	8.47918E-02
SRS	- 04	Pu-241	1.17509E+01
SRS	- 04	Am-241	2.85550E-03
SRS	- 04	Cm-242	6.72000E-03
SRS	- 04	Cm-244	2.40000E-03
SRS	- 06	H-3	2.54000E-01
SRS	- 07	H-3	1.10638E+02
SRS	- 07	Sr-90	3.33333E+02
SRS	- 07	Y-90	3.33333E+02
SRS	- 07	Tc-99	6.24113E+01
SRS	- 07	Ru-106	7.09219E-01
SRS	- 07	Rh-106	7.09219E-01
SRS	- 07	Sb-125	1.70212E+01
SRS	- 07	Cs-137	5.53191E+01
SRS	- 07	Ba-137m	5.10638E+01
SRS	- 07	Pm-147	4.35460E+02
SRS	- 09	H-3	3.77104E+02
SRS	- 10	H-3	3.53849E+04
SRS	- 10	Cr-51	1.82356E+03
SRS	- 10	Mn-54	3.47145E+03
SRS	- 10	Fe-55	1.29573E+04
SRS	- 10	Fe-59	1.17109E+02
SRS	- 10	Co-58	4.65928E+03
SRS	- 10	Co-60	3.65406E+04
SRS	- 10	Ni-59	1.67299E+02
SRS	- 10	Ni-63	2.38031E+04
SRS	- 10	Sr-90	1.91601E+03
SRS	- 10	Y-90	1.91601E+03
SRS	- 10	Zr-95	1.42204E+02
SRS	- 10	Tc-99	3.42145E-01
SRS	- 10	Ru-106	1.87039E+02
SRS	- 10	Rh-106	1.87039E+02
SRS	- 10	Sb-125	5.37169E+01
SRS	- 10	Te-125m	1.31155E+01
SRS	- 10	Cs-134	2.17490E+02
SRS	- 10	Cs-137	2.00725E+03
SRS	- 10	Ba-137m	1.90005E+03
SRS	- 10	Ce-144	6.26127E+02
SRS	- 10	Pr-144	6.26127E+02
SRS	- 10	Pr-144m	7.52721E+00
SRS	- 10	Pm-147	1.52825E+03
SRS	- 10	Sm-151	1.49403E+01
SRS	- 10	Eu-152	2.28097E-01
SRS	- 10	Eu-154	3.91186E+01
SRS	- 10	Eu-155	3.10212E+01
SRS	- 10	Pu-238	4.71020E+01

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
SRS	- 10	Pu-239	4.56194E-01
SRS	- 10	Pu-240	2.28097E-01
SRS	- 10	Pu-241	5.26904E+01
SRS	- 10	Am-241	6.84291E-01
WVDP	- 01	H-3	5.58163E-03
WVDP	- 01	Co-60	2.65127E-02
WVDP	- 01	Ni-63	5.27464E-02
WVDP	- 01	Sr-90	4.68857E+00
WVDP	- 01	Y-90	4.68857E+00
WVDP	- 01	Tc-99	8.37244E-04
WVDP	- 01	Ru-106	4.57693E-01
WVDP	- 01	Rh-106	4.57693E-01
WVDP	- 01	Sb-125	1.31447E-01
WVDP	- 01	Te-125m	3.20944E-02
WVDP	- 01	Cs-134	5.32208E-01
WVDP	- 01	Cs-137	4.91183E+00
WVDP	- 01	Ba-137m	4.64950E+00
WVDP	- 01	Ce-144	1.53216E+00
WVDP	- 01	Pr-144	1.53216E+00
WVDP	- 01	Pr-144m	1.84194E-02
WVDP	- 01	Pm-147	3.73969E+00
WVDP	- 01	Sm-151	3.65597E-02
WVDP	- 01	Eu-152	5.58163E-04
WVDP	- 01	Eu-154	9.57249E-02
WVDP	- 01	Eu-155	7.59101E-02
WVDP	- 01	Pu-238	1.15261E-01
WVDP	- 01	Pu-239	1.11633E-03
WVDP	- 01	Pu-240	5.58163E-04
WVDP	- 01	Pu-241	1.28936E-01
WVDP	- 01	Am-241	1.67449E-03
WVDP	- 02	H-3	7.53282E-02
WVDP	- 02	Co-60	3.57809E-01
WVDP	- 02	Ni-63	7.11851E-01
WVDP	- 02	Sr-90	6.32757E+01
WVDP	- 02	Y-90	6.32757E+01
WVDP	- 02	Tc-99	1.12992E-02
WVDP	- 02	Ru-106	6.17691E+00
WVDP	- 02	Rh-106	6.17691E+00
WVDP	- 02	Sb-125	1.77398E+00
WVDP	- 02	Te-125m	4.33137E-01
WVDP	- 02	Cs-134	7.18254E+00
WVDP	- 02	Cs-137	6.62888E+01
WVDP	- 02	Ba-137m	6.27484E+01
WVDP	- 02	Ce-144	2.06776E+01
WVDP	- 02	Pr-144	2.06776E+01
WVDP	- 02	Pr-144m	2.48583E-01
WVDP	- 02	Pm-147	5.04699E+01
WVDP	- 02	Sm-151	4.93400E-01
WVDP	- 02	Eu-152	7.53282E-03
WVDP	- 02	Eu-154	1.29188E+00
WVDP	- 02	Eu-155	1.02446E+00
WVDP	- 02	Pu-238	1.55553E+00
WVDP	- 02	Pu-239	1.50656E-02
WVDP	- 02	Pu-240	7.53282E-03
WVDP	- 02	Pu-241	1.74008E+00
WVDP	- 02	Am-241	2.25985E-02
WVDP	- 03	H-3	9.65397E-03
WVDP	- 03	Co-60	4.58564E-02
WVDP	- 03	Ni-63	9.12300E-02
WVDP	- 03	Sr-90	8.10934E+00
WVDP	- 03	Y-90	8.10934E+00
WVDP	- 03	Tc-99	1.44810E-03
WVDP	- 03	Ru-106	7.91626E-01

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
WVDP	- 03	Rh-106	7.91626E-01
WVDP	- 03	Sb-125	2.27351E-01
WVDP	- 03	Te-125m	5.55103E-02
WVDP	- 03	Cs-134	9.20506E-01
WVDP	- 03	Cs-137	8.49550E+00
WVDP	- 03	Ba-137m	8.04176E+00
WVDP	- 03	Ce-144	2.65002E+00
WVDP	- 03	Pr-144	2.65002E+00
WVDP	- 03	Pr-144m	3.18581E-02
WVDP	- 03	Pm-147	6.46816E+00
WVDP	- 03	Sm-151	6.32335E-02
WVDP	- 03	Eu-152	9.65397E-04
WVDP	- 03	Eu-154	1.65566E-01
WVDP	- 03	Eu-155	1.31294E-01
WVDP	- 03	Pu-238	1.99355E-01
WVDP	- 03	Pu-239	1.93079E-03
WVDP	- 03	Pu-240	9.65397E-04
WVDP	- 03	Pu-241	2.23007E-01
WVDP	- 03	Am-241	2.89619E-03
WVDP	- 04	H-3	1.18227E-02
WVDP	- 04	Co-60	5.61579E-02
WVDP	- 04	Ni-63	1.11725E-01
WVDP	- 04	Sr-90	9.93108E+00
WVDP	- 04	Y-90	9.93108E+00
WVDP	- 04	Tc-99	1.77341E-03
WVDP	- 04	Ru-106	9.69463E-01
WVDP	- 04	Rh-106	9.69463E-01
WVDP	- 04	Sb-125	2.78425E-01
WVDP	- 04	Te-125m	6.79806E-02
WVDP	- 04	Cs-134	1.12730E+00
WVDP	- 04	Cs-137	1.04040E+01
WVDP	- 04	Ba-137m	9.84832E+00
WVDP	- 04	Ce-144	3.24534E+00
WVDP	- 04	Pr-144	3.24534E+00
WVDP	- 04	Pr-144m	3.90150E-02
WVDP	- 04	Pm-147	7.92122E+00
WVDP	- 04	Sm-151	7.74388E-02
WVDP	- 04	Eu-152	1.18227E-03
WVDP	- 04	Eu-154	2.02760E-01
WVDP	- 04	Eu-155	1.60789E-01
WVDP	- 04	Pu-238	2.44139E-01
WVDP	- 04	Pu-239	2.36454E-03
WVDP	- 04	Pu-240	1.18227E-03
WVDP	- 04	Pu-241	2.73105E-01
WVDP	- 04	Am-241	3.54682E-03
WVDP	- 06	H-3	1.32593E-01
WVDP	- 06	Co-60	6.29815E-01
WVDP	- 06	Ni-63	1.25300E+00
WVDP	- 06	Sr-90	1.11378E+02
WVDP	- 06	Y-90	1.11378E+02
WVDP	- 06	Tc-99	1.98889E-02
WVDP	- 06	Ru-106	1.08726E+01
WVDP	- 06	Rh-106	1.08726E+01
WVDP	- 06	Sb-125	3.12255E+00
WVDP	- 06	Te-125m	7.62407E-01
WVDP	- 06	Cs-134	1.26427E+01
WVDP	- 06	Cs-137	1.16681E+02
WVDP	- 06	Ba-137m	1.10450E+02
WVDP	- 06	Ce-144	3.63967E+01
WVDP	- 06	Pr-144	3.63967E+01
WVDP	- 06	Pr-144m	4.37555E-01
WVDP	- 06	Pm-147	8.88370E+01
WVDP	- 06	Sm-151	8.68481E-01
WVDP	- 06	Eu-152	1.32593E-02

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
WVDP	- 06	Eu-154	2.27396E+00
WVDP	- 06	Eu-155	1.80326E+00
WVDP	- 06	Pu-238	2.73804E+00
WVDP	- 06	Pu-239	2.65185E-02
WVDP	- 06	Pu-240	1.32593E-02
WVDP	- 06	Pu-241	3.06289E+00
WVDP	- 06	Am-241	3.97778E-02
WVDP	- 07	H-3	4.87594E-02
WVDP	- 07	Co-60	2.31607E-01
WVDP	- 07	Ni-63	4.60776E-01
WVDP	- 07	Sr-90	4.09579E+01
WVDP	- 07	Y-90	4.09579E+01
WVDP	- 07	Tc-99	7.31390E-03
WVDP	- 07	Ru-106	3.99827E+00
WVDP	- 07	Rh-106	3.99827E+00
WVDP	- 07	Sb-125	1.14828E+00
WVDP	- 07	Te-125m	2.80366E-01
WVDP	- 07	Cs-134	4.64921E+00
WVDP	- 07	Cs-137	4.29082E+01
WVDP	- 07	Ba-137m	4.06165E+01
WVDP	- 07	Ce-144	1.33844E+01
WVDP	- 07	Pr-144	1.33844E+01
WVDP	- 07	Pr-144m	1.60906E-01
WVDP	- 07	Pm-147	3.26688E+01
WVDP	- 07	Sm-151	3.19374E-01
WVDP	- 07	Eu-152	4.87594E-03
WVDP	- 07	Eu-154	8.36223E-01
WVDP	- 07	Eu-155	6.63127E-01
WVDP	- 07	Pu-238	1.00688E+00
WVDP	- 07	Pu-239	9.75187E-03
WVDP	- 07	Pu-240	4.87594E-03
WVDP	- 07	Pu-241	1.12634E+00
WVDP	- 07	Am-241	1.46278E-02
WVDP	- 09	H-3	3.59924E-03
WVDP	- 09	Co-60	1.70964E-02
WVDP	- 09	Ni-63	3.40129E-02
WVDP	- 09	Sr-90	3.02337E+00
WVDP	- 09	Y-90	3.02337E+00
WVDP	- 09	Tc-99	5.39887E-04
WVDP	- 09	Ru-106	2.95138E-01
WVDP	- 09	Rh-106	2.95138E-01
WVDP	- 09	Sb-125	8.47622E-02
WVDP	- 09	Te-125m	2.06957E-02
WVDP	- 09	Cs-134	3.43188E-01
WVDP	- 09	Cs-137	3.16733E+00
WVDP	- 09	Ba-137m	2.99817E+00
WVDP	- 09	Ce-144	9.87993E-01
WVDP	- 09	Pr-144	9.87993E-01
WVDP	- 09	Pr-144m	1.18775E-02
WVDP	- 09	Pm-147	2.41149E+00
WVDP	- 09	Sm-151	2.35750E-02
WVDP	- 09	Eu-152	3.59924E-04
WVDP	- 09	Eu-154	6.17270E-02
WVDP	- 09	Eu-155	4.89497E-02
WVDP	- 09	Pu-238	7.43244E-02
WVDP	- 09	Pu-239	7.19849E-04
WVDP	- 09	Pu-240	3.59924E-04
WVDP	- 09	Pu-241	8.31425E-02
WVDP	- 09	Am-241	1.07977E-03
Y-12	- 01	Tl-208	9.47733E-06
Y-12	- 01	Pb-212	2.50870E-05
Y-12	- 01	Bi-212	2.50870E-05
Y-12	- 01	Po-212	1.61672E-05

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
Y-12	- 01	Po-216	2.50870E-05
Y-12	- 01	Ra-224	2.50870E-05
Y-12	- 01	Ra-228	1.49965E-04
Y-12	- 01	Ac-228	1.49965E-04
Y-12	- 01	Th-228	2.50870E-05
Y-12	- 01	Th-231	1.44390E-04
Y-12	- 01	Th-232	1.52195E-03
Y-12	- 01	Th-234	1.85070E-01
Y-12	- 01	Pa-234	1.89547E-05
Y-12	- 01	Pa-234m	1.85070E-01
Y-12	- 01	U-235	1.43832E-04
Y-12	- 01	U-238	1.85070E-01
Y-12	- 02	Tl-208	1.11338E-05
Y-12	- 02	Pb-212	2.94718E-05
Y-12	- 02	Bi-212	2.94718E-05
Y-12	- 02	Po-212	1.89930E-05
Y-12	- 02	Po-216	2.94718E-05
Y-12	- 02	Ra-224	2.94718E-05
Y-12	- 02	Ra-228	1.76176E-04
Y-12	- 02	Ac-228	1.76176E-04
Y-12	- 02	Th-228	2.94718E-05
Y-12	- 02	Th-231	1.69627E-04
Y-12	- 02	Th-232	1.78796E-03
Y-12	- 02	Th-234	2.17417E-01
Y-12	- 02	Pa-234	2.22676E-05
Y-12	- 02	Pa-234m	2.17417E-01
Y-12	- 02	U-235	1.68972E-04
Y-12	- 02	U-238	2.17417E-01
Y-12	- 03	Tl-208	6.83910E-07
Y-12	- 03	Pb-212	1.81035E-06
Y-12	- 03	Bi-212	1.81035E-06
Y-12	- 03	Po-212	1.16667E-06
Y-12	- 03	Po-216	1.81035E-06
Y-12	- 03	Ra-224	1.81035E-06
Y-12	- 03	Ra-228	1.08219E-05
Y-12	- 03	Ac-228	1.08219E-05
Y-12	- 03	Th-228	1.81035E-06
Y-12	- 03	Th-231	1.04196E-05
Y-12	- 03	Th-232	1.09828E-04
Y-12	- 03	Th-234	1.33552E-02
Y-12	- 03	Pa-234	1.36782E-06
Y-12	- 03	Pa-234m	1.33552E-02
Y-12	- 03	U-235	1.03793E-05
Y-12	- 03	U-238	1.33552E-02
Y-12	- 04	Tl-208	8.30331E-06
Y-12	- 04	Pb-212	2.19793E-05
Y-12	- 04	Bi-212	2.19793E-05
Y-12	- 04	Po-212	1.41645E-05
Y-12	- 04	Po-216	2.19793E-05
Y-12	- 04	Ra-224	2.19793E-05
Y-12	- 04	Ra-228	1.31388E-04
Y-12	- 04	Ac-228	1.31388E-04
Y-12	- 04	Th-228	2.19793E-05
Y-12	- 04	Th-231	1.26503E-04
Y-12	- 04	Th-232	1.33341E-03
Y-12	- 04	Th-234	1.62144E-01
Y-12	- 04	Pa-234	1.66066E-05
Y-12	- 04	Pa-234m	1.62144E-01
Y-12	- 04	U-235	1.26015E-04
Y-12	- 04	U-238	1.62144E-01
Y-12	- 07	Tl-208	2.75859E-06
Y-12	- 07	Pb-212	7.30215E-06

Feed Stock Radiological Profiles

Waste Stream: LLW

Generating Site	Treat Code	Nuclide	Activity (Ci/yr)
Y-12	- 07	Bi-212	7.30215E-06
Y-12	- 07	Po-212	4.70583E-06
Y-12	- 07	Po-216	7.30215E-06
Y-12	- 07	Ra-224	7.30215E-06
Y-12	- 07	Ra-228	4.36506E-05
Y-12	- 07	Ac-228	4.36506E-05
Y-12	- 07	Th-228	7.30215E-06
Y-12	- 07	Th-231	4.20279E-05
Y-12	- 07	Th-232	4.42997E-04
Y-12	- 07	Th-234	5.38688E-02
Y-12	- 07	Pa-234	5.51718E-06
Y-12	- 07	Pa-234m	5.38688E-02
Y-12	- 07	U-235	4.18657E-05
Y-12	- 07	U-238	5.38688E-02
Y-12	- 08	Tl-208	9.88890E-06
Y-12	- 08	Pb-212	2.61765E-05
Y-12	- 08	Bi-212	2.61765E-05
Y-12	- 08	Po-212	1.68693E-05
Y-12	- 08	Po-216	2.61765E-05
Y-12	- 08	Ra-224	2.61765E-05
Y-12	- 08	Ra-228	1.56477E-04
Y-12	- 08	Ac-228	1.56477E-04
Y-12	- 08	Th-228	2.61765E-05
Y-12	- 08	Th-231	1.50660E-04
Y-12	- 08	Th-232	1.58804E-03
Y-12	- 08	Th-234	1.93107E-01
Y-12	- 08	Pa-234	1.97778E-05
Y-12	- 08	Pa-234m	1.93107E-01
Y-12	- 08	U-235	1.50079E-04
Y-12	- 08	U-238	1.93107E-01

APPENDIX B:

**NO ACTION ALTERNATIVE:
RADIONUCLIDE THROUGHPUT AND AIR RELEASE
BY SITE AND TECHNOLOGY**

APPENDIX B:

NO ACTION ALTERNATIVE: RADIONUCLIDE THROUGHPUT AND AIR RELEASE BY SITE AND TECHNOLOGY

This appendix identifies the radiological characteristics of Waste Management low-level waste sent to the different treatment technologies and the resulting air emissions for each site under the No Action Alternative. The data tables that follow were used as input to the risk assessment in the Waste Management Programmatic Environmental Impact Statement.

The site of waste treatment is identified under the heading "Treatment Site." Each treatment technology employed at that site is listed, followed by the volume and mass of waste treated using that technology. The input activity and resulting air emissions are also noted. Each number is reported on an annual basis (i.e., annual volume and mass and annual air emissions). Numbers preceding the technology names are treatment codes used to track the treatment module through the computational process.

The total disposal volume (m^3), total activity of waste disposed (Ci), and the resulting air emissions (Ci) for each disposal site under the No Action Alternative are presented following the treatment source terms and emissions. In these data tables, the site is identified, the type of disposal technology assumed is noted (shallow land burial, tumulus, or belowground vault), and the total volume and mass of waste disposed of at the site are identified. Following this, each radionuclide disposed of is identified, along with the corresponding activity (in curies) placed in disposal and the total air emissions (in curies).

Belowground vault disposal at Hanford occurs for Hanford grout waste only. Saltstone disposal at Savannah River is included with the total waste disposal volume at that site because all waste is disposed of in belowground vaults. The saltstone-only volume and mass are $5.92E+05 m^3$ and $1.06E+09 kg$, respectively. Table B.1 presents the saltstone-only activities.

**TABLE B.1 Savannah River Site Saltstone Disposal
Activity and Air Release: No Action Alternative**

Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	2.21E+03	1.32E-03
Sr-90	6.66E+03	4.00E-03
Y-90	6.66E+03	4.00E-03
Tc-99	1.24E+03	7.48E-04
Ru-106	1.41E+01	8.51E-06
Rh-106	1.41E+01	8.51E-06
Sb-125	3.40E+02	2.04E-04
Cs-137	1.10E+03	6.63E-04
Ba-137m	1.02E+03	6.12E-04
Pm-147	8.70E+03	5.22E-03

TREATMENT

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites

Treatment Site: ANL-W

Waste Handling: CH non-alpha

2 SOLIDIFICATION	Thruput Volume		Thruput Mass	
	m3/year	7.69E-01	kg/year	9.23E+02
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
	-----	-----	-----	
	H-3	7.56E-04	1.13E-05	
10 AQUEOUS	Thruput Volume		Thruput Mass	
	m3/year	2.05E+03	kg/year	2.05E+06
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
	-----	-----	-----	
	H-3	8.41E-02	8.41E-05	
11 PACKAGING	Thruput Volume		Thruput Mass	
	m3/year	3.01E+01	kg/year	9.04E+04
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
	-----	-----	-----	
	Cr-51	1.79E+03	7.71E-05	
	Mn-54	3.41E+03	1.46E-04	
	Fe-55	1.27E+04	5.48E-04	
	Fe-59	1.15E+02	4.95E-06	
	Co-58	4.58E+03	1.97E-04	
	Co-60	3.59E+04	1.54E-03	
	Ni-59	1.64E+02	7.07E-06	
	Ni-63	2.33E+04	1.00E-03	
	Zr-95	1.39E+02	6.01E-06	
17 DISCHARGE	Thruput Volume		Thruput Mass	
	m3/year	2.05E+03	kg/year	2.05E+06
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
	-----	-----	-----	
	H-3	8.32E-02	.	
96 CERTIFY_SHIP	Thruput Volume		Thruput Mass	
	m3/year	1.37E+02	kg/year	1.89E+05
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
	-----	-----	-----	
	H-3	7.65E-04	.	
	Cr-51	1.79E+03	.	
	Mn-54	3.41E+03	.	
	Fe-55	1.27E+04	.	
	Fe-59	1.15E+02	.	
	Co-58	4.58E+03	.	

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: ANL-W

Waste Handling: CH non-alpha

96 CERTIFY_SHIP -- Cont.

Thruput Volume
m3/year

1.37E+02

Thruput Mass

kg/year

1.89E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Co-60	3.59E+04	.
Ni-59	1.64E+02	.
Ni-63	2.33E+04	.
Sr-90	1.65E-02	.
Y-90	1.65E-02	.
Zr-95	1.39E+02	.
Tc-99	2.96E-06	.
Ru-106	1.61E-03	.
Rh-106	1.61E-03	.
Sb-125	4.64E-04	.
Te-125m	1.13E-04	.
Cs-134	1.88E-03	.
Cs-137	1.16E-01	.
Ba-137m	1.15E-01	.
Ce-144	5.41E-03	.
Pr-144	5.41E-03	.
Pr-144m	6.51E-05	.
Pm-147	1.32E-02	.
Sm-151	1.29E-04	.
Eu-152	1.97E-06	.
Eu-154	3.38E-04	.
Eu-155	2.68E-04	.
Pu-238	4.08E-04	.
Pu-239	4.03E-06	.
Pu-240	2.27E-06	.
Pu-241	4.97E-04	.
Am-241	5.92E-06	.
Cm-242	2.44E-08	.
Cm-244	8.70E-09	.

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: Fermi

Waste Handling: CH non-alpha

2 SOLIDIFICATION

Thruput Volume	Thruput Mass
m3/year 6.94E-02	kg/year 8.33E+01

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	.	.

4 COMPACTION

Thruput Volume	Thruput Mass
m3/year 1.41E+01	kg/year 2.11E+03

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	4.22E-02	6.33E-12
Cr-51	4.31E-03	6.47E-13
Mn-54	8.22E-03	1.23E-12
Fe-55	3.06E-02	4.60E-12
Fe-59	2.77E-04	4.16E-14
Co-58	1.10E-02	1.65E-12
Co-60	8.65E-02	1.29E-11
Ni-59	3.96E-04	5.94E-14
Ni-63	5.63E-02	8.44E-12
Zr-95	3.36E-04	5.05E-14
Tl-208	1.46E-07	2.19E-17
Pb-212	3.87E-07	5.81E-17
Bi-212	3.87E-07	5.81E-17
Po-212	2.49E-07	3.74E-17
Po-216	3.87E-07	5.81E-17
Ra-224	3.87E-07	5.81E-17
Ra-228	2.31E-06	3.47E-16
Ac-228	2.31E-06	3.47E-16
Th-228	3.87E-07	5.81E-17
Th-231	2.23E-06	3.34E-16
Th-232	2.35E-05	3.52E-15
Th-234	2.85E-03	4.28E-13
Pa-234	2.92E-07	4.39E-17
Pa-234m	2.85E-03	4.28E-13
U-235	2.22E-06	3.33E-16
U-238	2.85E-03	4.28E-13

9 EVAPORATION

Thruput Volume	Thruput Mass
m3/year 1.66E+00	kg/year 1.66E+03

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.79E-02	1.29E-02

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: Fermi

Waste Handling: CH non-alpha

11 PACKAGING

Thruput Volume	Thruput Mass
m3/year 5.84E+01	kg/year 4.17E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	4.92E-02	2.11E-09
Cr-51	1.80E-02	7.76E-10
Mn-54	3.43E-02	1.47E-09
Fe-55	1.28E-01	5.51E-09
Fe-59	1.15E-03	4.98E-11
Co-58	4.61E-02	1.98E-09
Co-60	3.61E-01	1.55E-08
Ni-59	1.65E-03	7.12E-11
Ni-63	2.35E-01	1.01E-08
Zr-95	1.40E-03	6.05E-11
Tl-208	4.31E-08	1.85E-15
Pb-212	1.13E-07	4.89E-15
Bi-212	1.13E-07	4.89E-15
Po-212	7.34E-08	3.15E-15
Po-216	1.13E-07	4.89E-15
Ra-224	1.13E-07	4.89E-15
Ra-228	6.80E-07	2.92E-14
Ac-228	6.80E-07	2.92E-14
Th-228	1.13E-07	4.89E-15
Th-231	6.55E-07	2.81E-14
Th-232	6.90E-06	2.96E-13
Th-234	8.39E-04	3.61E-11
Pa-234	8.61E-08	3.70E-15
Pa-234m	8.39E-04	3.61E-11
U-235	6.52E-07	2.80E-14
U-238	8.39E-04	3.61E-11

17 DISCHARGE

Thruput Volume	Thruput Mass
m3/year 1.58E+00	kg/year 1.58E+03

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	5.03E-03	.

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: Fermi

Waste Handling: CH non-alpha

96 CERTIFY_SHIP

Thruput Volume
m3/year

6.13E+01

Thruput Mass

kg/year 4.19E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	9.15E-02	.
Cr-51	2.23E-02	.
Mn-54	4.25E-02	.
Fe-55	1.58E-01	.
Fe-59	1.43E-03	.
Co-58	5.71E-02	.
Co-60	4.48E-01	.
Ni-59	2.05E-03	.
Ni-63	2.91E-01	.
Zr-95	1.74E-03	.
Tl-208	1.89E-07	.
Pb-212	5.01E-07	.
Bi-212	5.01E-07	.
Po-212	3.23E-07	.
Po-216	5.01E-07	.
Ra-224	5.01E-07	.
Ra-228	2.99E-06	.
Ac-228	2.99E-06	.
Th-228	5.01E-07	.
Th-231	2.88E-06	.
Th-232	3.04E-05	.
Th-234	3.69E-03	.
Pa-234	3.79E-07	.
Pa-234m	3.69E-03	.
U-235	2.87E-06	.
U-238	3.69E-03	.

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: Hanford

Waste Handling: CH non-alpha

4 COMPACTION

Thruput Volume	Thruput Mass
m3/year 2.41E+03	kg/year 3.62E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	6.10E+00	9.15E-10
Cr-51	1.55E+01	2.33E-09
Mn-54	2.96E+01	4.44E-09
Fe-55	1.10E+02	1.65E-08
Fe-59	1.00E+00	1.50E-10
Co-58	3.97E+01	5.96E-09
Co-60	3.14E+02	4.72E-08
Ni-59	1.42E+00	2.14E-10
Ni-63	2.09E+02	3.13E-08
Sr-90	5.31E+02	7.96E-08
Y-90	5.31E+02	7.96E-08
Zr-95	1.21E+00	1.82E-10
Tc-99	9.48E-02	1.42E-11
Ru-106	5.18E+01	7.77E-09
Rh-106	5.18E+01	7.77E-09
Sb-125	1.48E+01	2.23E-09
Te-125m	3.63E+00	5.45E-10
Cs-134	6.02E+01	9.04E-09
Cs-137	5.56E+02	8.34E-08
Ba-137m	5.26E+02	7.89E-08
Ce-144	1.73E+02	2.60E-08
Pr-144	1.73E+02	2.60E-08
Pr-144m	2.08E+00	3.12E-10
Pm-147	4.23E+02	6.35E-08
Sm-151	4.14E+00	6.21E-10
Eu-152	6.32E-02	9.48E-12
Eu-154	1.08E+01	1.62E-09
Eu-155	8.59E+00	1.28E-09
Tl-208	7.44E-05	1.11E-14
Pb-212	1.97E-04	2.95E-14
Bi-212	1.97E-04	2.95E-14
Po-212	1.26E-04	1.90E-14
Po-216	1.97E-04	2.95E-14
Ra-224	1.97E-04	2.95E-14
Ra-228	1.17E-03	1.76E-13
Ac-228	1.17E-03	1.76E-13
Th-228	1.97E-04	2.95E-14
Th-231	1.13E-03	1.70E-13
Th-232	1.19E-02	1.79E-12
Th-234	1.45E+00	2.18E-10
Pa-234	1.48E-04	2.23E-14
Pa-234m	1.45E+00	2.18E-10
U-235	1.12E-03	1.69E-13
U-238	1.45E+00	2.18E-10
Pu-238	1.30E+01	1.95E-09
Pu-239	1.26E-01	1.89E-11
Pu-240	6.32E-02	9.48E-12
Pu-241	1.46E+01	2.19E-09
Am-241	1.89E-01	2.84E-11

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: Hanford

Waste Handling: CH non-alpha

11 PACKAGING

Thruput Volume	4.77E+02	Thruput Mass	1.39E+06
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.20E+00	5.19E-08
Cr-51	3.07E+00	1.32E-07
Mn-54	5.86E+00	2.52E-07
Fe-55	2.18E+01	9.40E-07
Fe-59	1.97E-01	8.50E-09
Co-58	7.86E+00	3.38E-07
Co-60	6.22E+01	2.67E-06
Ni-59	2.82E-01	1.21E-08
Ni-63	4.13E+01	1.77E-06
Sr-90	1.04E+02	4.51E-06
Y-90	1.04E+02	4.51E-06
Zr-95	2.40E-01	1.03E-08
Tc-99	1.87E-02	8.06E-10
Ru-106	1.02E+01	4.40E-07
Rh-106	1.02E+01	4.40E-07
Sb-125	2.94E+00	1.26E-07
Te-125m	7.18E-01	3.09E-08
Cs-134	1.19E+01	5.12E-07
Cs-137	1.09E+02	4.72E-06
Ba-137m	1.04E+02	4.47E-06
Ce-144	3.43E+01	1.47E-06
Pr-144	3.43E+01	1.47E-06
Pr-144m	4.12E-01	1.77E-08
Pm-147	8.37E+01	3.60E-06
Sm-151	8.18E-01	3.52E-08
Eu-152	1.24E-02	5.37E-10
Eu-154	2.14E+00	9.21E-08
Eu-155	1.69E+00	7.30E-08
Tl-208	1.47E-05	6.32E-13
Pb-212	3.89E-05	1.67E-12
Bi-212	3.89E-05	1.67E-12
Po-212	2.51E-05	1.07E-12
Po-216	3.89E-05	1.67E-12
Ra-224	3.89E-05	1.67E-12
Ra-228	2.32E-04	1.00E-11
Ac-228	2.32E-04	1.00E-11
Th-228	3.89E-05	1.67E-12
Th-231	2.24E-04	9.64E-12
Th-232	2.36E-03	1.01E-10
Th-234	2.87E-01	1.23E-08
Pa-234	2.94E-05	1.26E-12
Pa-234m	2.87E-01	1.23E-08
U-235	2.23E-04	9.60E-12
U-238	2.87E-01	1.23E-08
Pu-238	2.58E+00	1.10E-07
Pu-239	2.49E-02	1.07E-09
Pu-240	1.24E-02	5.37E-10
Pu-241	2.88E+00	1.24E-07
Am-241	3.74E-02	1.61E-09

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: Hanford

Waste Handling: CH non-alpha

13 SHALLOW_LAND_BU

Thruput Volume	Thruput Mass
m3/year 5.50E+03	kg/year 3.14E+07

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	8.22E+02	4.93E-04
C-14	6.05E-01	3.63E-07
Cr-51	9.24E+03	5.54E-03
Mn-54	1.76E+04	1.06E-02
Fe-55	6.57E+04	3.94E-02
Fe-59	5.93E+02	3.56E-04
Co-58	2.36E+04	1.42E-02
Co-60	1.85E+05	1.11E-01
Ni-59	8.48E+02	5.08E-04
Ni-63	1.20E+05	7.23E-02
Sr-90	1.06E+03	6.37E-04
Y-90	1.06E+03	6.37E-04
Zr-95	7.21E+02	4.32E-04
Tc-99	1.38E+00	8.31E-07
Ru-106	9.54E+01	5.72E-05
Rh-106	9.54E+01	5.72E-05
Sb-125	2.74E+01	1.64E-05
Te-125m	6.69E+00	4.01E-06
Cs-134	2.51E+02	1.51E-04
Cs-137	1.21E+03	7.26E-04
Ba-137m	1.14E+03	6.87E-04
Ce-144	3.19E+02	1.91E-04
Pr-144	3.19E+02	1.91E-04
Pr-144m	3.84E+00	2.30E-06
Pm-147	7.79E+02	4.67E-04
Sm-151	7.62E+00	4.57E-06
Eu-152	1.16E-01	6.98E-08
Eu-154	1.99E+01	1.19E-05
Eu-155	1.58E+01	9.49E-06
Tl-208	1.37E-04	8.26E-11
Pb-212	3.64E-04	2.18E-10
Bi-212	3.64E-04	2.18E-10
Po-212	2.34E-04	1.40E-10
Po-216	3.64E-04	2.18E-10
Ra-224	3.64E-04	2.18E-10
Ra-228	2.17E-03	1.30E-09
Ac-228	2.17E-03	1.30E-09
Th-228	3.64E-04	2.18E-10
Th-231	2.09E-03	1.25E-09
Th-232	2.21E-02	1.32E-08
Th-234	2.68E+00	1.61E-06
Pa-234	2.75E-04	1.65E-10
Pa-234m	2.68E+00	1.61E-06
U-235	2.08E-03	1.25E-09
U-238	1.00E+01	6.03E-06
Pu-238	2.40E+01	1.44E-05
Pu-239	2.32E-01	1.39E-07
Pu-240	1.16E-01	6.98E-08
Pu-241	2.68E+01	1.61E-05
Am-241	3.49E-01	2.09E-07
Cm-242	7.42E-06	4.45E-12
Cm-244	5.27E+00	3.16E-06

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: Hanford

Waste Handling: CH non-alpha

14 BELOW_GROUND_VA

Thruput Volume	Thruput Mass
m3/year 2.12E+04	kg/year 3.81E+07

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Sr-90	1.61E+05	9.66E-02
Y-90	1.61E+05	9.66E-02
Ru-106	2.53E+05	1.51E-01
Rh-106	2.53E+05	1.51E-01
Cs-137	5.48E+06	3.29E+00
Ba-137m	5.18E+06	3.11E+00

96 CERTIFY_SHIP

Thruput Volume	Thruput Mass
m3/year 2.36E+04	kg/year 5.22E+07

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.11E+01	.
Cr-51	4.33E+01	.
Mn-54	8.24E+01	.
Fe-55	3.07E+02	.
Fe-59	2.78E+00	.
Co-58	1.10E+02	.
Co-60	8.73E+02	.
Ni-59	3.97E+00	.
Ni-63	5.75E+02	.
Sr-90	1.61E+05	.
Y-90	1.61E+05	.
Zr-95	3.37E+00	.
Tc-99	1.72E-01	.
Ru-106	2.53E+05	.
Rh-106	2.53E+05	.
Sb-125	2.70E+01	.
Te-125m	6.60E+00	.
Cs-134	1.09E+02	.
Cs-137	5.48E+06	.
Ba-137m	5.18E+06	.
Ce-144	3.15E+02	.
Pr-144	3.15E+02	.
Pr-144m	3.79E+00	.
Pm-147	7.70E+02	.
Sm-151	7.52E+00	.
Eu-152	1.14E-01	.
Eu-154	1.97E+01	.
Eu-155	1.56E+01	.
Tl-208	1.35E-04	.
Pb-212	3.58E-04	.
Bi-212	3.58E-04	.
Po-212	2.30E-04	.
Po-216	3.58E-04	.
Ra-224	3.58E-04	.
Ra-228	2.14E-03	.
Ac-228	2.14E-03	.
Th-228	3.58E-04	.
Th-231	2.06E-03	.
Th-232	2.17E-02	.
Th-234	2.64E+00	.

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: Hanford

Waste Handling: CH non-alpha

96 CERTIFY_SHIP--Cont.

Nuclide	Thruput Volume m3/year	Thruput Mass kg/year
	2.36E+04	5.22E+07
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Pa-234	2.70E-04	.
Pa-234m	2.64E+00	.
U-235	2.05E-03	.
U-238	2.64E+00	.
Pu-238	2.37E+01	.
Pu-239	2.29E-01	.
Pu-240	1.14E-01	.
Pu-241	2.65E+01	.
Am-241	3.44E-01	.

Treatment Site: INEL

Waste Handling: CH non-alpha

1 INCINERATION

Nuclide	Thruput Volume m3/year	Thruput Mass kg/year
	8.54E+02	1.28E+05
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	9.85E-05	9.69E-05
Cr-51	1.58E-01	4.51E-06
Mn-54	3.02E-01	8.59E-06
Fe-55	1.12E+00	3.20E-05
Fe-59	1.02E-02	2.89E-07
Co-58	4.06E-01	1.15E-05
Co-60	3.18E+00	9.04E-05
Ni-59	1.45E-02	4.14E-07
Ni-63	2.07E+00	5.88E-05
Sr-90	8.28E-02	2.35E-06
Y-90	8.28E-02	2.35E-06
Zr-95	1.23E-02	3.51E-07
Tc-99	1.47E-05	4.19E-10
Ru-106	8.08E-03	2.29E-07
Rh-106	8.08E-03	2.29E-07
Sb-125	2.32E-03	6.59E-08
Te-125m	5.66E-04	1.60E-08
Cs-134	9.39E-03	2.66E-07
Cs-137	8.67E-02	2.46E-06
Ba-137m	8.21E-02	2.33E-06
Ce-144	2.70E-02	7.68E-07
Pr-144	2.70E-02	7.68E-07
Pr-144m	3.25E-04	9.23E-09
Pm-147	6.60E-02	1.87E-06
Sm-151	6.45E-04	1.83E-08
Eu-152	9.85E-06	2.79E-10
Eu-154	1.69E-03	4.80E-08
Eu-155	1.34E-03	3.80E-08
Pu-238	2.03E-03	5.78E-08
Pu-239	1.97E-05	5.59E-10
Pu-240	9.85E-06	2.79E-10
Pu-241	2.27E-03	6.46E-08
Am-241	2.95E-05	8.39E-10

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: INEL

Waste Handling: CH non-alpha

2 SOLIDIFICATION

Thruput Volume	Thruput Mass
m3/year 9.71E+02	kg/year 1.16E+06

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.52E+00	2.29E-02
Cr-51	1.58E-01	1.08E-14
Mn-54	3.02E-01	2.05E-14
Fe-55	1.12E+00	7.67E-14
Fe-59	1.02E-02	6.93E-16
Co-58	4.05E-01	2.76E-14
Co-60	3.18E+00	2.16E-13
Ni-59	1.45E-02	9.91E-16
Ni-63	2.07E+00	1.40E-13
Sr-90	8.28E-02	5.63E-15
Y-90	8.28E-02	5.63E-15
Zr-95	1.23E-02	8.42E-16
Tc-99	1.47E-05	1.00E-18
Ru-106	8.08E-03	5.49E-16
Rh-106	8.08E-03	5.49E-16
Sb-125	2.32E-03	1.57E-16
Te-125m	5.66E-04	3.85E-17
Cs-134	9.39E-03	6.39E-16
Cs-137	8.67E-02	5.89E-15
Ba-137m	8.21E-02	5.58E-15
Ce-144	2.70E-02	1.83E-15
Pr-144	2.70E-02	1.83E-15
Pr-144m	3.25E-04	2.21E-17
Pm-147	6.60E-02	4.49E-15
Sm-151	6.45E-04	4.39E-17
Eu-152	9.85E-06	6.70E-19
Eu-154	1.69E-03	1.14E-16
Eu-155	1.34E-03	9.11E-17
Pu-238	2.03E-03	1.38E-16
Pu-239	1.97E-05	1.34E-18
Pu-240	9.85E-06	6.70E-19
Pu-241	2.27E-03	1.54E-16
Am-241	2.95E-05	2.01E-18

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: INEL

Waste Handling: CH non-alpha

4 COMPACTION

Thruput Volume
m3/year 3.41E+02Thruput Mass
kg/year 5.11E+04

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.01E-05	3.02E-15
Cr-51	1.35E-02	2.03E-12
Mn-54	2.58E-02	3.87E-12
Fe-55	9.63E-02	1.44E-11
Fe-59	8.70E-04	1.30E-13
Co-58	3.46E-02	5.19E-12
Co-60	2.71E-01	4.07E-11
Ni-59	1.24E-03	1.86E-13
Ni-63	1.76E-01	2.65E-11
Sr-90	1.69E-02	2.53E-12
Y-90	1.69E-02	2.53E-12
Zr-95	1.05E-03	1.58E-13
Tc-99	3.02E-06	4.53E-16
Ru-106	1.65E-03	2.47E-13
Rh-106	1.65E-03	2.47E-13
Sb-125	4.74E-04	7.11E-14
Te-125m	1.15E-04	1.73E-14
Cs-134	1.92E-03	2.88E-13
Cs-137	1.77E-02	2.65E-12
Ba-137m	1.67E-02	2.51E-12
Ce-144	5.52E-03	8.29E-13
Pr-144	5.52E-03	8.29E-13
Pr-144m	6.64E-05	9.97E-15
Pm-147	1.34E-02	2.02E-12
Sm-151	1.31E-04	1.97E-14
Eu-152	2.01E-06	3.02E-16
Eu-154	3.45E-04	5.18E-14
Eu-155	2.73E-04	4.10E-14
Pu-238	4.17E-04	6.25E-14
Pu-239	4.11E-06	6.17E-16
Pu-240	2.31E-06	3.47E-16
Pu-241	5.07E-04	7.60E-14
Am-241	6.04E-06	9.06E-16
Cm-242	2.44E-08	3.66E-18
Cm-244	8.70E-09	1.30E-18

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: INEL

Waste Handling: CH non-alpha

6 SIZE_REDUCTION

Thruput Volume	4.51E+02	Thruput Mass	3.61E+06
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	6.98E-06	3.00E-13
Cr-51	1.05E-02	4.52E-10
Mn-54	2.00E-02	8.62E-10
Fe-55	7.48E-02	3.21E-09
Fe-59	6.76E-04	2.90E-11
Co-58	2.69E-02	1.15E-09
Co-60	2.11E-01	9.07E-09
Ni-59	9.66E-04	4.15E-11
Ni-63	1.37E-01	5.91E-09
Sr-90	5.86E-03	2.52E-10
Y-90	5.86E-03	2.52E-10
Zr-95	8.21E-04	3.53E-11
Tc-99	1.04E-06	4.50E-14
Ru-106	5.72E-04	2.46E-11
Rh-106	5.72E-04	2.46E-11
Sb-125	1.64E-04	7.07E-12
Te-125m	4.01E-05	1.72E-12
Cs-134	6.66E-04	2.86E-11
Cs-137	1.05E-01	4.54E-09
Ba-137m	1.05E-01	4.52E-09
Ce-144	1.91E-03	8.24E-11
Pr-144	1.91E-03	8.24E-11
Pr-144m	2.30E-05	9.91E-13
Pm-147	4.68E-03	2.01E-10
Sm-151	4.57E-05	1.96E-12
Eu-152	6.98E-07	3.00E-14
Eu-154	1.19E-04	5.15E-12
Eu-155	9.50E-05	4.08E-12
Pu-238	1.44E-04	6.20E-12
Pu-239	1.39E-06	6.00E-14
Pu-240	6.98E-07	3.00E-14
Pu-241	1.61E-04	6.94E-12
Am-241	2.09E-06	9.01E-14

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: INEL

Waste Handling: CH non-alpha

10 AQUEOUS

Thruput Volume	2.48E+06	Thruput Mass	2.48E+09
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.69E+02	1.69E-01

11 PACKAGING

Thruput Volume	9.51E+02	Thruput Mass	2.85E+06
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.97E-02	1.27E-09
Cr-51	5.08E+01	2.18E-06
Mn-54	9.67E+01	4.16E-06
Fe-55	3.61E+02	1.55E-05
Fe-59	3.26E+00	1.40E-07
Co-58	1.29E+02	5.58E-06
Co-60	1.01E+03	4.37E-05
Ni-59	4.66E+00	2.00E-07
Ni-63	6.63E+02	2.85E-05
Sr-90	2.49E+01	1.07E-06
Y-90	2.49E+01	1.07E-06
Zr-95	3.96E+00	1.70E-07
Tc-99	4.46E-03	1.91E-10
Ru-106	2.43E+00	1.04E-07
Rh-106	2.43E+00	1.04E-07
Sb-125	7.00E-01	3.01E-08
Te-125m	1.71E-01	7.35E-09
Cs-134	2.83E+00	1.21E-07
Cs-137	2.61E+01	1.12E-06
Ba-137m	2.47E+01	1.06E-06
Ce-144	8.16E+00	3.51E-07
Pr-144	8.16E+00	3.51E-07
Pr-144m	9.81E-02	4.22E-09
Pm-147	1.99E+01	8.57E-07
Sm-151	1.94E-01	8.38E-09
Eu-152	2.97E-03	1.27E-10
Eu-154	5.10E-01	2.19E-08
Eu-155	4.04E-01	1.74E-08
Pu-238	6.14E-01	2.64E-08
Pu-239	5.95E-03	2.55E-10
Pu-240	2.97E-03	1.27E-10
Pu-241	6.87E-01	2.95E-08
Am-241	8.92E-03	3.83E-10

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: INEL

Waste Handling: CH non-alpha

13 SHALLOW_LAND_BU

Thruput Volume
m3/year

2.48E+03

Thruput Mass

kg/year

1.00E+07

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.53E+00	9.22E-07
Cr-51	1.84E+03	1.10E-03
Mn-54	3.51E+03	2.10E-03
Fe-55	1.31E+04	7.86E-03
Fe-59	1.18E+02	7.10E-05
Co-58	4.71E+03	2.82E-03
Co-60	3.69E+04	2.21E-02
Ni-59	1.69E+02	1.01E-04
Ni-63	2.40E+04	1.44E-02
Sr-90	2.50E+01	1.50E-05
Y-90	2.50E+01	1.50E-05
Zr-95	1.43E+02	8.63E-05
Tc-99	4.48E-03	2.68E-09
Ru-106	2.45E+00	1.47E-06
Rh-106	2.45E+00	1.47E-06
Sb-125	7.03E-01	4.22E-07
Te-125m	1.71E-01	1.03E-07
Cs-134	2.84E+00	1.70E-06
Cs-137	2.63E+01	1.58E-05
Ba-137m	2.49E+01	1.49E-05
Ce-144	8.20E+00	4.92E-06
Pr-144	8.20E+00	4.92E-06
Pr-144m	9.86E-02	5.91E-08
Pm-147	2.00E+01	1.20E-05
Sm-151	1.95E-01	1.17E-07
Eu-152	2.98E-03	1.79E-09
Eu-154	5.12E-01	3.07E-07
Eu-155	4.06E-01	2.43E-07
Pu-238	6.17E-01	3.70E-07
Pu-239	5.97E-03	3.58E-09
Pu-240	2.98E-03	1.79E-09
Pu-241	6.90E-01	4.14E-07
Am-241	8.96E-03	5.37E-09
Cm-242	2.44E-08	1.46E-14
Cm-244	8.70E-09	5.22E-15

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: INEL

Waste Handling: CH non-alpha

17 DISCHARGE

Thruput Volume	Thruput Mass
m3/year 2.48E+06	kg/year 2.48E+09

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.68E+02	.

95 INSPECT_RECEIVE

Thruput Volume	Thruput Mass
m3/year 1.06E+02	kg/year 9.68E+04

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.97E-05	.
Cr-51	1.99E-03	.
Mn-54	3.79E-03	.
Fe-55	1.41E-02	.
Fe-59	1.27E-04	.
Co-58	5.08E-03	.
Co-60	3.99E-02	.
Ni-59	1.82E-04	.
Ni-63	2.61E-02	.
Sr-90	1.65E-02	.
Y-90	1.65E-02	.
Zr-95	1.55E-04	.
Tc-99	2.96E-06	.
Ru-106	1.61E-03	.
Rh-106	1.61E-03	.
Sb-125	4.64E-04	.
Te-125m	1.13E-04	.
Cs-134	1.88E-03	.
Cs-137	1.16E-01	.
Ba-137m	1.15E-01	.
Ce-144	5.41E-03	.
Pr-144	5.41E-03	.
Pr-144m	6.51E-05	.
Pm-147	1.32E-02	.
Sm-151	1.29E-04	.
Eu-152	1.97E-06	.
Eu-154	3.38E-04	.
Eu-155	2.68E-04	.
Pu-238	4.08E-04	.
Pu-239	4.03E-06	.
Pu-240	2.27E-06	.
Pu-241	4.97E-04	.
Am-241	5.92E-06	.
Cm-242	2.44E-08	.
Cm-244	8.70E-09	.

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: INEL

Waste Handling: CH non-alpha

96 CERTIFY_SHIP

Thruput Volume
m3/year

2.35E+03

Thruput Mass

kg/year

9.97E+06

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.53E+00	.
Cr-51	5.10E+01	.
Mn-54	9.70E+01	.
Fe-55	3.62E+02	.
Fe-59	3.27E+00	.
Co-58	1.30E+02	.
Co-60	1.02E+03	.
Ni-59	4.67E+00	.
Ni-63	6.65E+02	.
Sr-90	2.50E+01	.
Y-90	2.50E+01	.
Zr-95	3.97E+00	.
Tc-99	4.48E-03	.
Ru-106	2.45E+00	.
Rh-106	2.45E+00	.
Sb-125	7.03E-01	.
Te-125m	1.71E-01	.
Cs-134	2.84E+00	.
Cs-137	2.63E+01	.
Ba-137m	2.49E+01	.
Ce-144	8.20E+00	.
Pr-144	8.20E+00	.
Pr-144m	9.86E-02	.
Pm-147	2.00E+01	.
Sm-151	1.95E-01	.
Eu-152	2.98E-03	.
Eu-154	5.12E-01	.
Eu-155	4.06E-01	.
Pu-238	6.17E-01	.
Pu-239	5.97E-03	.
Pu-240	2.98E-03	.
Pu-241	6.90E-01	.
Am-241	8.96E-03	.
Cm-242	2.44E-08	.
Cm-244	8.70E-09	.

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: LBL

Waste Handling: CH non-alpha

2 SOLIDIFICATION

Thruput Volume	Thruput Mass
m3/year 4.97E+00	kg/year 4.97E+03

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	4.33E+02	6.50E+00

4 COMPACTION

Thruput Volume	Thruput Mass
m3/year 3.60E+01	kg/year 5.41E+03

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	9.10E+00	1.36E-09
C-14	4.47E-01	6.71E-11
Mn-54	5.04E+01	7.56E-09
Co-58	4.65E+01	6.98E-09
Co-60	1.34E+02	2.01E-08
Sr-90	6.32E+01	9.49E-09
Y-90	6.32E+01	9.49E-09
Tc-99	8.95E-01	1.34E-10
Cs-134	1.04E+02	1.56E-08
Cs-137	1.37E+02	2.06E-08
Ba-137m	1.30E+02	1.95E-08
U-238	5.44E+00	8.17E-10
Cm-244	5.27E+00	7.91E-10

11 PACKAGING

Thruput Volume	Thruput Mass
m3/year 2.35E+01	kg/year 1.60E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	3.08E+02	1.32E-05
C-14	1.17E-01	5.06E-09
Cr-51	3.16E-02	1.35E-09
Mn-54	1.33E+01	5.73E-07
Fe-55	2.24E-01	9.66E-09
Fe-59	2.03E-03	8.73E-11
Co-58	1.23E+01	5.30E-07
Co-60	3.60E+01	1.55E-06
Ni-59	2.90E-03	1.24E-10
Ni-63	4.12E-01	1.77E-08
Sr-90	1.66E+01	7.16E-07
Y-90	1.66E+01	7.16E-07
Zr-95	2.46E-03	1.06E-10
Tc-99	2.35E-01	1.01E-08
Cs-134	2.74E+01	1.18E-06
Cs-137	3.62E+01	1.55E-06
Ba-137m	3.42E+01	1.47E-06
U-238	1.43E+00	6.16E-08

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: LBL

Waste Handling: CH non-alpha

96 CERTIFY_SHIP	Thruput Volume		Thruput Mass	
	m3/year	3.72E+01	kg/year	1.80E+05
Nuclide		Activity (Ci/yr)	Air Release (Ci/yr)	
-----		-----	-----	
H-3		7.44E+02	-	
C-14		5.65E-01	-	
Cr-51		3.16E-02	-	
Mn-54		6.37E+01	-	
Fe-55		2.24E-01	-	
Fe-59		2.03E-03	-	
Co-58		5.89E+01	-	
Co-60		1.70E+02	-	
Ni-59		2.90E-03	-	
Ni-63		4.12E-01	-	
Sr-90		7.99E+01	-	
Y-90		7.99E+01	-	
Zr-95		2.46E-03	-	
Tc-99		1.13E+00	-	
Cs-134		1.31E+02	-	
Cs-137		1.73E+02	-	
Ba-137m		1.64E+02	-	
U-238		6.88E+00	-	
Cm-244		5.27E+00	-	

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: LLNL

Waste Handling: CH non-alpha

4 COMPACTION

Thruput Volume	Thruput Mass
m3/year 3.59E+01	kg/year 5.39E+03

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	3.77E+03	5.65E-07
C-14	1.74E-04	2.61E-14
Mn-54	1.96E-02	2.94E-12
Co-58	1.81E-02	2.71E-12
Co-60	5.25E-02	7.88E-12
Ni-63	5.48E-04	8.22E-14
Sr-90	7.33E-02	1.10E-11
Y-90	7.33E-02	1.10E-11
Tc-99	3.56E-04	5.35E-14
Ru-106	4.75E-03	7.13E-13
Rh-106	4.75E-03	7.13E-13
Sb-125	1.36E-03	2.04E-13
Te-125m	3.33E-04	5.00E-14
Cs-134	4.60E-02	6.91E-12
Cs-137	1.04E-01	1.56E-11
Ba-137m	9.89E-02	1.48E-11
Ce-144	1.59E-02	2.38E-12
Pr-144	1.59E-02	2.38E-12
Pr-144m	1.91E-04	2.87E-14
Pm-147	3.88E-02	5.83E-12
Sm-151	3.80E-04	5.70E-14
Eu-152	5.80E-06	8.70E-16
Eu-154	9.95E-04	1.49E-13
Eu-155	7.89E-04	1.18E-13
U-238	2.11E-03	3.17E-13
Pu-238	8.80E-03	1.32E-12
Pu-239	5.91E-04	8.87E-14
Pu-240	2.03E-03	3.05E-13
Pu-241	2.81E-01	4.21E-11
Am-241	2.90E-05	4.35E-15
Cm-242	1.62E-04	2.43E-14
Cm-244	5.80E-05	8.70E-15

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: LLNL

Waste Handling: CH non-alpha

6 SIZE_REDUCTION

Thruput Volume	2.11E+01	Thruput Mass	1.61E+05
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.22E+03	9.56E-05
C-14	1.02E-04	4.41E-12
Mn-54	1.15E-02	4.97E-10
Co-58	1.06E-02	4.59E-10
Co-60	3.10E-02	1.33E-09
Ni-63	3.23E-04	1.39E-11
Sr-90	4.32E-02	1.86E-09
Y-90	4.32E-02	1.86E-09
Tc-99	2.10E-04	9.05E-12
Ru-106	2.80E-03	1.20E-10
Rh-106	2.80E-03	1.20E-10
Sb-125	8.06E-04	3.46E-11
Te-125m	1.96E-04	8.46E-12
Cs-134	2.71E-02	1.16E-09
Cs-137	6.16E-02	2.65E-09
Ba-137m	5.83E-02	2.51E-09
Ce-144	9.39E-03	4.03E-10
Pr-144	9.39E-03	4.03E-10
Pr-144m	1.12E-04	4.85E-12
Pm-147	2.29E-02	9.86E-10
Sm-151	2.24E-04	9.63E-12
Eu-152	3.42E-06	1.47E-13
Eu-154	5.86E-04	2.52E-11
Eu-155	4.65E-04	2.00E-11
U-238	1.24E-03	5.37E-11
Pu-238	5.19E-03	2.23E-10
Pu-239	3.49E-04	1.50E-11
Pu-240	1.20E-03	5.16E-11
Pu-241	1.65E-01	7.12E-09
Am-241	1.71E-05	7.35E-13
Cm-242	9.58E-05	4.12E-12
Cm-244	3.42E-05	1.47E-12

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: LLNL

Waste Handling: CH non-alpha

11 PACKAGING

Thruput Volume	1.06E+02	Thruput Mass	2.85E+05
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.30E+04	5.61E-04
C-14	6.02E-04	2.59E-11
Mn-54	6.78E-02	2.91E-09
Co-58	6.26E-02	2.69E-09
Co-60	1.81E-01	7.82E-09
Ni-63	1.89E-03	8.15E-11
Sr-90	2.53E-01	1.09E-08
Y-90	2.53E-01	1.09E-08
Tc-99	1.23E-03	5.31E-11
Ru-106	1.64E-02	7.07E-10
Rh-106	1.64E-02	7.07E-10
Sb-125	4.72E-03	2.03E-10
Te-125m	1.15E-03	4.96E-11
Cs-134	1.59E-01	6.85E-09
Cs-137	3.61E-01	1.55E-08
Ba-137m	3.42E-01	1.47E-08
Ce-144	5.51E-02	2.36E-09
Pr-144	5.51E-02	2.36E-09
Pr-144m	6.62E-04	2.84E-11
Pm-147	1.34E-01	5.78E-09
Sm-151	1.31E-03	5.65E-11
Eu-152	2.00E-05	8.63E-13
Eu-154	3.44E-03	1.48E-10
Eu-155	2.73E-03	1.17E-10
U-238	7.32E-03	3.15E-10
Pu-238	3.04E-02	1.30E-09
Pu-239	2.04E-03	8.80E-11
Pu-240	7.04E-03	3.03E-10
Pu-241	9.72E-01	4.18E-08
Am-241	1.00E-04	4.31E-12
Cm-242	5.62E-04	2.41E-11
Cm-244	2.00E-04	8.63E-12

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: LLNL

Waste Handling: CH non-alpha

96 CERTIFY_SHIP

Thruput Volume	1.13E+02	Thruput Mass	2.91E+05
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.68E+04	.
C-14	7.76E-04	.
Mn-54	8.74E-02	.
Co-58	8.07E-02	.
Co-60	2.34E-01	.
Ni-63	2.44E-03	.
Sr-90	3.27E-01	.
Y-90	3.27E-01	.
Tc-99	1.59E-03	.
Ru-106	2.12E-02	.
Rh-106	2.12E-02	.
Sb-125	6.09E-03	.
Te-125m	1.48E-03	.
Cs-134	2.05E-01	.
Cs-137	4.66E-01	.
Ba-137m	4.41E-01	.
Ce-144	7.10E-02	.
Pr-144	7.10E-02	.
Pr-144m	8.54E-04	.
Pm-147	1.73E-01	.
Sm-151	1.69E-03	.
Eu-152	2.58E-05	.
Eu-154	4.43E-03	.
Eu-155	3.51E-03	.
U-238	9.44E-03	.
Pu-238	3.92E-02	.
Pu-239	2.64E-03	.
Pu-240	9.08E-03	.
Pu-241	1.25E+00	.
Am-241	1.29E-04	.
Cm-242	7.24E-04	.
Cm-244	2.58E-04	.

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: Mound

Waste Handling: CH non-alpha

11 PACKAGING

Thruput Volume	Thruput Mass
m3/year 1.67E+03	kg/year 3.94E+06

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	6.70E+03	2.88E-04
Pu-238	4.05E-02	1.74E-09
Pu-239	3.09E-03	1.33E-10
Pu-240	1.08E-02	4.66E-10
Pu-241	1.49E+00	6.41E-08
Am-241	6.19E-05	2.66E-12
Cm-242	8.67E-04	3.72E-11
Cm-244	3.09E-04	1.33E-11

22 a-SOLIDIFICATION

Thruput Volume	Thruput Mass
m3/year 2.51E+02	kg/year 3.01E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Pu-238	3.96E-02	2.69E-15
Pu-239	3.02E-03	2.05E-16
Pu-240	1.05E-02	7.20E-16
Pu-241	1.45E+00	9.91E-14
Am-241	6.05E-05	4.11E-18
Cm-242	8.47E-04	5.76E-17
Cm-244	3.02E-04	2.05E-17

96 CERTIFY_SHIP

Thruput Volume	Thruput Mass
m3/year 2.00E+03	kg/year 4.83E+06

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	6.70E+03	.
Pu-238	8.02E-02	.
Pu-239	6.12E-03	.
Pu-240	2.14E-02	.
Pu-241	2.95E+00	.
Am-241	1.22E-04	.
Cm-242	1.71E-03	.
Cm-244	6.12E-04	.

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: ORR

Waste Handling: CH non-alpha

2 SOLIDIFICATION

Thruput Volume m3/year	3.49E+01	Thruput Mass kg/year	4.18E+04
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
Tl-208	8.98E-06	6.10E-19	
Pb-212	2.38E-05	1.62E-18	
Bi-212	2.38E-05	1.62E-18	
Po-212	1.53E-05	1.04E-18	
Po-216	2.38E-05	1.62E-18	
Ra-224	2.38E-05	1.62E-18	
Ra-228	1.42E-04	9.66E-18	
Ac-228	1.42E-04	9.66E-18	
Th-228	2.38E-05	1.62E-18	
Th-231	1.37E-04	9.30E-18	
Th-232	1.44E-03	9.80E-17	
Th-234	1.75E-01	1.19E-14	
Pa-234	1.80E-05	1.22E-18	
Pa-234m	1.75E-01	1.19E-14	
U-235	1.36E-04	9.26E-18	
U-238	1.75E-01	1.19E-14	
Pu-238	1.38E-02	9.41E-16	
Pu-239	1.06E-03	7.18E-17	
Pu-240	3.70E-03	2.51E-16	
Pu-241	5.09E-01	3.46E-14	
Am-241	2.11E-05	1.44E-18	
Cm-242	2.96E-04	2.01E-17	
Cm-244	1.06E-04	7.18E-18	

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: ORR

Waste Handling: CH non-alpha

4 COMPACTION

Nuclide	Thruput Volume m3/year	3.08E+03	Thruput Mass kg/year	4.62E+05
	Activity (Ci/yr)	Air Release (Ci/yr)		
H-3	6.19E-02	9.29E-12		
C-14	3.05E-03	4.57E-13		
Cr-51	5.56E-05	8.34E-15		
Mn-54	3.43E-01	5.15E-11		
Fe-55	3.95E-04	5.92E-14		
Fe-59	3.57E-06	5.35E-16		
Co-58	3.17E-01	4.75E-11		
Co-60	9.16E-01	1.37E-10		
Ni-59	5.10E-06	7.65E-16		
Ni-63	7.30E-04	1.09E-13		
Sr-90	4.31E-01	6.46E-11		
Y-90	4.31E-01	6.46E-11		
Zr-95	4.33E-06	6.50E-16		
Tc-99	6.09E-03	9.14E-13		
Ru-106	4.18E-05	6.27E-15		
Rh-106	4.18E-05	6.27E-15		
Sb-125	1.20E-05	1.80E-15		
Te-125m	2.93E-06	4.40E-16		
Cs-134	7.10E-01	1.06E-10		
Cs-137	9.37E-01	1.41E-10		
Ba-137m	8.86E-01	1.33E-10		
Ce-144	1.40E-04	2.10E-14		
Pr-144	1.40E-04	2.10E-14		
Pr-144m	1.68E-06	2.52E-16		
Pm-147	3.42E-04	5.12E-14		
Sm-151	3.34E-06	5.01E-16		
Eu-152	5.10E-08	7.65E-18		
Eu-154	8.74E-06	1.31E-15		
Eu-155	6.93E-06	1.04E-15		
Tl-208	3.90E-05	5.85E-15		
Pb-212	1.03E-04	1.55E-14		
Bi-212	1.03E-04	1.55E-14		
Po-212	6.65E-05	9.98E-15		
Po-216	1.03E-04	1.55E-14		
Ra-224	1.03E-04	1.55E-14		
Ra-228	6.17E-04	9.26E-14		
Ac-228	6.17E-04	9.26E-14		
Th-228	1.03E-04	1.55E-14		
Th-231	5.94E-04	8.91E-14		
Th-232	6.26E-03	9.39E-13		
Th-234	7.62E-01	1.14E-10		
Pa-234	7.80E-05	1.17E-14		
Pa-234m	7.62E-01	1.14E-10		
U-235	5.92E-04	8.88E-14		
U-238	7.99E-01	1.20E-10		
Pu-238	1.05E-05	1.58E-15		
Pu-239	1.02E-07	1.53E-17		
Pu-240	5.10E-08	7.65E-18		
Pu-241	1.18E-05	1.77E-15		
Am-241	1.53E-07	2.29E-17		

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: ORR

Waste Handling: CH non-alpha

11 PACKAGING

Thruput Volume m3/year	3.36E+02	Thruput Mass kg/year	1.01E+06
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
H-3	4.87E-01	2.09E-08	
Co-60	2.31E+00	9.95E-08	
Ni-63	4.60E+00	1.98E-07	
Sr-90	4.09E+02	1.76E-05	
Y-90	4.09E+02	1.76E-05	
Tc-99	7.30E-02	3.14E-09	
Ru-106	3.99E+01	1.72E-06	
Rh-106	3.99E+01	1.72E-06	
Sb-125	1.15E+01	4.93E-07	
Te-125m	2.80E+00	1.20E-07	
Cs-134	4.64E+01	2.00E-06	
Cs-137	4.29E+02	1.84E-05	
Ba-137m	4.06E+02	1.74E-05	
Ce-144	1.34E+02	5.75E-06	
Pr-144	1.34E+02	5.75E-06	
Pr-144m	1.61E+00	6.91E-08	
Pm-147	3.26E+02	1.40E-05	
Sm-151	3.19E+00	1.37E-07	
Eu-152	4.87E-02	2.09E-09	
Eu-154	8.35E+00	3.59E-07	
Eu-155	6.62E+00	2.85E-07	
Pu-238	1.01E+01	4.32E-07	
Pu-239	9.74E-02	4.19E-09	
Pu-240	4.87E-02	2.09E-09	
Pu-241	1.12E+01	4.84E-07	
Am-241	1.46E-01	6.28E-09	

16 TUMULUS

Thruput Volume m3/year	1.20E+04	Thruput Mass kg/year	5.48E+07
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
H-3	4.84E+01	2.90E-05	
C-14	2.36E+00	1.41E-06	
Cr-51	5.56E-05	3.34E-11	
Mn-54	2.65E+02	1.59E-04	
Fe-55	3.95E-04	2.37E-10	
Fe-59	3.57E-06	2.14E-12	
Co-58	2.45E+02	1.47E-04	
Co-60	7.10E+02	4.26E-04	
Ni-59	5.10E-06	3.06E-12	
Ni-63	4.60E+00	2.76E-06	
Sr-90	7.42E+02	4.45E-04	
Y-90	7.42E+02	4.45E-04	
Zr-95	4.33E-06	2.60E-12	
Tc-99	4.78E+00	2.87E-06	
Ru-106	3.99E+01	2.40E-05	
Rh-106	3.99E+01	2.40E-05	
Sb-125	1.15E+01	6.88E-06	
Te-125m	2.80E+00	1.68E-06	

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: ORR

Waste Handling: CH non-alpha

16 TUMULUS -- Cont.

Nuclide	Thruput Volume m3/year	1.20E+04	Thruput Mass kg/year	5.48E+07
	Activity (Ci/yr)		Air Release (Ci/yr)	
Cs-134	5.95E+02		3.57E-04	
Cs-137	1.15E+03		6.92E-04	
Ba-137m	1.09E+03		6.54E-04	
Ce-144	1.34E+02		8.02E-05	
Pr-144	1.34E+02		8.02E-05	
Pr-144m	1.61E+00		9.64E-07	
Pm-147	3.26E+02		1.96E-04	
Sm-151	3.19E+00		1.91E-06	
Eu-152	4.87E-02		2.92E-08	
Eu-154	8.35E+00		5.01E-06	
Eu-155	6.62E+00		3.97E-06	
Tl-208	1.91E-04		1.15E-10	
Pb-212	5.05E-04		3.03E-10	
Bi-212	5.05E-04		3.03E-10	
Po-212	3.26E-04		1.95E-10	
Po-216	5.05E-04		3.03E-10	
Ra-224	5.05E-04		3.03E-10	
Ra-228	3.02E-03		1.81E-09	
Ac-228	3.02E-03		1.81E-09	
Th-228	5.05E-04		3.03E-10	
Th-231	2.91E-03		1.74E-09	
Th-232	3.07E-02		1.84E-08	
Th-234	3.73E+00		2.24E-06	
Pa-234	3.82E-04		2.29E-10	
Pa-234m	3.73E+00		2.24E-06	
U-235	2.90E-03		1.74E-09	
U-238	3.24E+01		1.94E-05	
Pu-238	1.01E+01		6.04E-06	
Pu-239	9.84E-02		5.91E-08	
Pu-240	5.24E-02		3.14E-08	
Pu-241	1.18E+01		7.05E-06	
Am-241	1.46E-01		8.77E-08	
Cm-242	2.96E-04		1.77E-10	
Cm-244	1.06E-04		6.34E-11	

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: ORR

Waste Handling: CH non-alpha

95 INSPECT_RECEIVE

Nuclide	Thruput Volume m3/year	Thruput Mass kg/year	Air Release (Ci/yr)
	Activity (Ci/yr)		
Tl-208	3.90E-05		.
Pb-212	1.03E-04		.
Bi-212	1.03E-04		.
Po-212	6.65E-05		.
Po-216	1.03E-04		.
Ra-224	1.03E-04		.
Ra-228	6.17E-04		.
Ac-228	6.17E-04		.
Th-228	1.03E-04		.
Th-231	5.94E-04		.
Th-232	6.26E-03		.
Th-234	7.62E-01		.
Pa-234	7.80E-05		.
Pa-234m	7.62E-01		.
U-235	5.92E-04		.
U-238	7.62E-01		.

96 CERTIFY_SHIP

Nuclide	Thruput Volume m3/year	Thruput Mass kg/year	Air Release (Ci/yr)
	Activity (Ci/yr)		
H-3	4.84E+01		.
C-14	2.36E+00		.
Cr-51	5.56E-05		.
Mn-54	2.65E+02		.
Fe-55	3.95E-04		.
Fe-59	3.57E-06		.
Co-58	2.45E+02		.
Co-60	7.10E+02		.
Ni-59	5.10E-06		.
Ni-63	4.60E+00		.
Sr-90	7.42E+02		.
Y-90	7.42E+02		.
Zr-95	4.33E-06		.
Tc-99	4.78E+00		.
Ru-106	3.99E+01		.
Rh-106	3.99E+01		.
Sb-125	1.15E+01		.
Te-125m	2.80E+00		.
Cs-134	5.95E+02		.
Cs-137	1.15E+03		.
Ba-137m	1.09E+03		.
Ce-144	1.34E+02		.
Pr-144	1.34E+02		.
Pr-144m	1.61E+00		.
Pm-147	3.26E+02		.
Sm-151	3.19E+00		.
Eu-152	4.87E-02		.
Eu-154	8.35E+00		.

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: ORR

Waste Handling: CH non-alpha

96 CERTIFY_SHIP -- Cont.		Thruput Volume m3/year	2.02E+03	Thruput Mass kg/year	2.83E+06
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)			
Eu-155	6.62E+00	.			
Tl-208	4.80E-05	.			
Pb-212	1.27E-04	.			
Bi-212	1.27E-04	.			
Po-212	8.18E-05	.			
Po-216	1.27E-04	.			
Ra-224	1.27E-04	.			
Ra-228	7.59E-04	.			
Ac-228	7.59E-04	.			
Th-228	1.27E-04	.			
Th-231	7.31E-04	.			
Th-232	7.70E-03	.			
Th-234	9.37E-01	.			
Pa-234	9.60E-05	.			
Pa-234m	9.37E-01	.			
U-235	7.28E-04	.			
U-238	2.96E+01	.			
Pu-238	1.01E+01	.			
Pu-239	9.84E-02	.			
Pu-240	5.24E-02	.			
Pu-241	1.18E+01	.			
Am-241	1.46E-01	.			
Cm-242	2.96E-04	.			
Cm-244	1.06E-04	.			

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: Pantex

Waste Handling: CH non-alpha

2 SOLIDIFICATION

Thruput Volume m3/year	1.31E+00	Thruput Mass kg/year	1.58E+03
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
H-3	.	.	
Tl-208	1.67E-06	1.14E-19	
Pb-212	4.43E-06	3.01E-19	
Bi-212	4.43E-06	3.01E-19	
Po-212	2.86E-06	1.94E-19	
Po-216	4.43E-06	3.01E-19	
Ra-224	4.43E-06	3.01E-19	
Ra-228	2.65E-05	1.80E-18	
Ac-228	2.65E-05	1.80E-18	
Th-228	4.43E-06	3.01E-19	
Th-231	2.55E-05	1.73E-18	
Th-232	2.69E-04	1.83E-17	
Th-234	3.27E-02	2.22E-15	
Pa-234	3.35E-06	2.28E-19	
Pa-234m	3.27E-02	2.22E-15	
U-235	2.54E-05	1.73E-18	
U-238	3.27E-02	2.22E-15	

9 EVAPORATION

Thruput Volume m3/year	3.15E+01	Thruput Mass kg/year	3.15E+04
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
H-3	1.87E+00	1.35E+00	
Tl-208	1.67E-06	1.67E-17	
Pb-212	4.43E-06	4.43E-17	
Bi-212	4.43E-06	4.43E-17	
Po-212	2.86E-06	2.86E-17	
Po-216	4.43E-06	4.43E-17	
Ra-224	4.43E-06	4.43E-17	
Ra-228	2.65E-05	2.65E-16	
Ac-228	2.65E-05	2.65E-16	
Th-228	4.43E-06	4.43E-17	
Th-231	2.55E-05	2.55E-16	
Th-232	2.69E-04	2.69E-15	
Th-234	3.27E-02	3.27E-13	
Pa-234	3.35E-06	3.35E-17	
Pa-234m	3.27E-02	3.27E-13	
U-235	2.54E-05	2.54E-16	
U-238	3.27E-02	3.27E-13	

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: Pantex

Waste Handling: CH non-alpha

11 PACKAGING

Thruput Volume	1.32E+02	Thruput Mass	3.98E+05
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	4.54E-02	1.95E-09
Tl-208	4.06E-08	1.75E-15
Pb-212	1.07E-07	4.62E-15
Bi-212	1.07E-07	4.62E-15
Po-212	6.93E-08	2.98E-15
Po-216	1.07E-07	4.62E-15
Ra-224	1.07E-07	4.62E-15
Ra-228	6.42E-07	2.76E-14
Ac-228	6.42E-07	2.76E-14
Th-228	1.07E-07	4.62E-15
Th-231	6.19E-07	2.66E-14
Th-232	6.52E-06	2.80E-13
Th-234	7.93E-04	3.41E-11
Pa-234	8.12E-08	3.49E-15
Pa-234m	7.93E-04	3.41E-11
U-235	6.16E-07	2.65E-14
U-238	7.93E-04	3.41E-11

17 DISCHARGE

Thruput Volume	2.99E+01	Thruput Mass	2.99E+04
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	5.24E-01	.
Tl-208	1.67E-10	.
Pb-212	4.43E-10	.
Bi-212	4.43E-10	.
Po-212	2.86E-10	.
Po-216	4.43E-10	.
Ra-224	4.43E-10	.
Ra-228	2.65E-09	.
Ac-228	2.65E-09	.
Th-228	4.43E-10	.
Th-231	2.55E-09	.
Th-232	2.69E-08	.
Th-234	3.27E-06	.
Pa-234	3.35E-10	.
Pa-234m	3.27E-06	.
U-235	2.54E-09	.
U-238	3.27E-06	.

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: Pantex

Waste Handling: CH non-alpha

96 CERTIFY_SHIP

Thruput Volume m3/year	1.34E+02	Thruput Mass kg/year	4.02E+05
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
H-3	4.54E-02	.	
Tl-208	1.71E-06	.	
Pb-212	4.54E-06	.	
Bi-212	4.54E-06	.	
Po-212	2.93E-06	.	
Po-216	4.54E-06	.	
Ra-224	4.54E-06	.	
Ra-228	2.71E-05	.	
Ac-228	2.71E-05	.	
Th-228	4.54E-06	.	
Th-231	2.61E-05	.	
Th-232	2.75E-04	.	
Th-234	3.35E-02	.	
Pa-234	3.43E-06	.	
Pa-234m	3.35E-02	.	
U-235	2.60E-05	.	
U-238	3.35E-02	.	

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: PGDP

Waste Handling: CH non-alpha

2 SOLIDIFICATION

Thruput Volume	Thruput Mass
m3/year 5.41E+01	kg/year 5.41E+04

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tc-99	9.69E-05	6.58E-18
Tl-208	4.07E-07	2.77E-20
Pb-212	1.07E-06	7.33E-20
Bi-212	1.07E-06	7.33E-20
Po-212	6.95E-07	4.72E-20
Po-216	1.07E-06	7.33E-20
Ra-224	1.07E-06	7.33E-20
Ra-228	6.45E-06	4.38E-19
Ac-228	6.45E-06	4.38E-19
Th-228	1.07E-06	7.33E-20
Th-231	6.21E-06	4.22E-19
Th-232	6.54E-05	4.45E-18
Th-234	7.96E-03	5.41E-16
Pa-234	8.15E-07	5.54E-20
Pa-234m	7.96E-03	5.41E-16
U-235	6.18E-06	4.20E-19
U-238	7.96E-03	5.41E-16
Np-237	7.26E-05	4.94E-18
Pu-239	7.26E-05	4.94E-18

11 PACKAGING

Thruput Volume	Thruput Mass
m3/year 2.44E+03	kg/year 5.95E+06

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tc-99	4.37E-03	1.88E-10
Tl-208	1.83E-05	7.91E-13
Pb-212	4.86E-05	2.09E-12
Bi-212	4.86E-05	2.09E-12
Po-212	3.13E-05	1.34E-12
Po-216	4.86E-05	2.09E-12
Ra-224	4.86E-05	2.09E-12
Ra-228	2.91E-04	1.25E-11
Ac-228	2.91E-04	1.25E-11
Th-228	4.86E-05	2.09E-12
Th-231	2.80E-04	1.20E-11
Th-232	2.95E-03	1.27E-10
Th-234	3.59E-01	1.54E-08
Pa-234	3.67E-05	1.58E-12
Pa-234m	3.59E-01	1.54E-08
U-235	2.79E-04	1.20E-11
U-238	3.59E-01	1.54E-08
Np-237	3.27E-03	1.41E-10
Pu-239	3.27E-03	1.41E-10

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: PGDP Waste Handling: CH non-alpha

96 CERTIFY_SHIP	Thruput Volume	Thruput Mass
	m3/year 2.51E+03	kg/year 6.11E+06
Nuclide	Activity	Air Release
	(Ci/yr)	(Ci/yr)
Tc-99	4.46E-03	.
Tl-208	1.88E-05	.
Pb-212	4.97E-05	.
Bi-212	4.97E-05	.
Po-212	3.20E-05	.
Po-216	4.97E-05	.
Ra-224	4.97E-05	.
Ra-228	2.97E-04	.
Ac-228	2.97E-04	.
Th-228	4.97E-05	.
Th-231	2.86E-04	.
Th-232	3.01E-03	.
Th-234	3.67E-01	.
Pa-234	3.76E-05	.
Pa-234m	3.67E-01	.
U-235	2.85E-04	.
U-238	3.67E-01	.
Np-237	3.35E-03	.
Pu-239	3.35E-03	.

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: RFETS Waste Handling: CH non-alpha

96 CERTIFY_SHIP	Thruput Volume m3/year	6.51E+02	Thruput Mass kg/year	2.87E+06
-----------------	---------------------------	----------	-------------------------	----------

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Pu-238	8.83E-02	.
Pu-239	6.74E-03	.
Pu-240	2.35E-02	.
Pu-241	3.24E+00	.
Am-241	1.34E-04	.
Cm-242	1.88E-03	.
Cm-244	6.74E-04	.

Treatment Site: RFETS Waste Handling: CH alpha

24 a-COMPACTION	Thruput Volume m3/year	1.40E+03	Thruput Mass kg/year	2.10E+05
-----------------	---------------------------	----------	-------------------------	----------

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	1.23E-05	1.84E-15
Pb-212	3.25E-05	4.88E-15
Bi-212	3.25E-05	4.88E-15
Po-212	2.09E-05	3.14E-15
Po-216	3.25E-05	4.88E-15
Ra-224	3.25E-05	4.88E-15
Ra-228	1.94E-04	2.92E-14
Ac-228	1.94E-04	2.92E-14
Th-228	3.25E-05	4.88E-15
Th-231	1.87E-04	2.81E-14
Th-232	1.97E-03	2.96E-13
Th-234	2.40E-01	3.60E-11
Pa-234	2.46E-05	3.69E-15
Pa-234m	2.40E-01	3.60E-11
U-235	1.86E-04	2.80E-14
U-238	2.40E-01	3.60E-11
Pu-238	1.89E-01	2.84E-11
Pu-239	1.44E-02	2.17E-12
Pu-240	5.06E-02	7.60E-12
Pu-241	6.98E+00	1.04E-09
Am-241	2.89E-04	4.34E-14
Cm-242	4.05E-03	6.08E-13
Cm-244	1.44E-03	2.17E-13

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: RFETS

Waste Handling: CH non-alpha

96 CERTIFY_SHIP	Thruput Volume		Thruput Mass	
	m3/year	2.80E+02	kg/year	2.10E+05
Nuclide	Activity		Air Release	
	(Ci/yr)		(Ci/yr)	
Tl-208	1.23E-05		.	
Pb-212	3.25E-05		.	
Bi-212	3.25E-05		.	
Po-212	2.09E-05		.	
Po-216	3.25E-05		.	
Ra-224	3.25E-05		.	
Ra-228	1.94E-04		.	
Ac-228	1.94E-04		.	
Th-228	3.25E-05		.	
Th-231	1.87E-04		.	
Th-232	1.97E-03		.	
Th-234	2.40E-01		.	
Pa-234	2.46E-05		.	
Pa-234m	2.40E-01		.	
U-235	1.86E-04		.	
U-238	2.40E-01		.	
Pu-238	1.89E-01		.	
Pu-239	1.44E-02		.	
Pu-240	5.06E-02		.	
Pu-241	6.98E+00		.	
Am-241	2.89E-04		.	
Cm-242	4.05E-03		.	
Cm-244	1.44E-03		.	

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: RMI

Waste Handling: CH non-alpha

4 COMPACTION

Nuclide	Thruput Volume	Thruput Mass
	m3/year 1.02E+02	kg/year 1.53E+04
	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	7.30E-09	1.09E-18
Pb-212	1.92E-08	2.88E-18
Bi-212	1.92E-08	2.88E-18
Po-212	1.24E-08	1.86E-18
Po-216	1.92E-08	2.88E-18
Ra-224	1.92E-08	2.88E-18
Ra-228	1.14E-07	1.71E-17
Ac-228	1.14E-07	1.71E-17
Th-228	1.92E-08	2.88E-18
Th-231	1.10E-07	1.65E-17
Th-232	1.16E-06	1.74E-16
Th-234	1.41E-04	2.11E-14
Pa-234	1.45E-08	2.17E-18
Pa-234m	1.41E-04	2.11E-14
U-235	1.09E-07	1.64E-17
U-238	1.41E-04	2.11E-14

11 PACKAGING

Nuclide	Thruput Volume	Thruput Mass
	m3/year 2.43E+03	kg/year 7.02E+06
	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	1.71E-07	7.39E-15
Pb-212	4.54E-07	1.95E-14
Bi-212	4.54E-07	1.95E-14
Po-212	2.93E-07	1.25E-14
Po-216	4.54E-07	1.95E-14
Ra-224	4.54E-07	1.95E-14
Ra-228	2.71E-06	1.16E-13
Ac-228	2.71E-06	1.16E-13
Th-228	4.54E-07	1.95E-14
Th-231	2.61E-06	1.12E-13
Th-232	2.75E-05	1.18E-12
Th-234	3.35E-03	1.44E-10
Pa-234	3.43E-07	1.47E-14
Pa-234m	3.35E-03	1.44E-10
U-235	2.60E-06	1.12E-13
U-238	3.35E-03	1.44E-10

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: RMI

Waste Handling: CH non-alpha

96 CERTIFY_SHIP

Thruput Volume	2.45E+03	Thruput Mass	7.03E+06
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	1.79E-07	.
Pb-212	4.73E-07	.
Bi-212	4.73E-07	.
Po-212	3.05E-07	.
Po-216	4.73E-07	.
Ra-224	4.73E-07	.
Ra-228	2.83E-06	.
Ac-228	2.83E-06	.
Th-228	4.73E-07	.
Th-231	2.72E-06	.
Th-232	2.87E-05	.
Th-234	3.49E-03	.
Pa-234	3.58E-07	.
Pa-234m	3.49E-03	.
U-235	2.71E-06	.
U-238	3.49E-03	.

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: SNL-CA

Waste Handling: CH non-alpha

4 COMPACTION

Thruput Volume	Thruput Mass
m3/year 1.19E-01	kg/year 1.79E+01

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	9.84E+01	1.47E-08
Fe-55	1.57E-01	2.36E-11
Co-60	1.57E-01	2.36E-11
Tl-208	2.67E-06	4.01E-16
Pb-212	7.08E-06	1.06E-15
Bi-212	7.08E-06	1.06E-15
Po-212	4.56E-06	6.85E-16
Po-216	7.08E-06	1.06E-15
Ra-224	7.08E-06	1.06E-15
Ra-228	4.23E-05	6.35E-15
Ac-228	4.23E-05	6.35E-15
Th-228	7.08E-06	1.06E-15
Th-231	4.07E-05	6.11E-15
Th-232	4.29E-04	6.44E-14
Th-234	5.22E-02	7.84E-12
Pa-234	5.35E-06	8.03E-16
Pa-234m	5.22E-02	7.84E-12
U-235	4.06E-05	6.09E-15
U-238	5.22E-02	7.84E-12

11 PACKAGING

Thruput Volume	Thruput Mass
m3/year 1.63E+01	kg/year 4.68E+04

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.40E+04	6.02E-04
Tl-208	2.93E-05	1.26E-12
Pb-212	7.76E-05	3.33E-12
Bi-212	7.76E-05	3.33E-12
Po-212	5.00E-05	2.15E-12
Po-216	7.76E-05	3.33E-12
Ra-224	7.76E-05	3.33E-12
Ra-228	4.64E-04	1.99E-11
Ac-228	4.64E-04	1.99E-11
Th-228	7.76E-05	3.33E-12
Th-231	4.46E-04	1.92E-11
Th-232	4.71E-03	2.02E-10
Th-234	5.72E-01	2.46E-08
Pa-234	5.86E-05	2.52E-12
Pa-234m	5.72E-01	2.46E-08
U-235	4.45E-04	1.91E-11
U-238	5.72E-01	2.46E-08

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: SNL-CA

Waste Handling: CH non-alpha

96 CERTIFY_SHIP

Thruput Volume	Thruput Mass
m3/year 1.63E+01	kg/year 4.68E+04

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.41E+04	.
Fe-55	1.57E-01	.
Co-60	1.57E-01	.
Tl-208	3.20E-05	.
Pb-212	8.47E-05	.
Bi-212	8.47E-05	.
Po-212	5.46E-05	.
Po-216	8.47E-05	.
Ra-224	8.47E-05	.
Ra-228	5.06E-04	.
Ac-228	5.06E-04	.
Th-228	8.47E-05	.
Th-231	4.87E-04	.
Th-232	5.14E-03	.
Th-234	6.25E-01	.
Pa-234	6.40E-05	.
Pa-234m	6.25E-01	.
U-235	4.85E-04	.
U-238	6.25E-01	.

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: SRS

Waste Handling: CH non-alpha

1 INCINERATION	Thruput Volume	Thruput Mass	
	m3/year 7.29E+02	kg/year 1.10E+05	
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
H-3	1.88E+02	1.85E+02	
Cr-51	4.99E-01	1.41E-05	
Mn-54	9.50E-01	2.69E-05	
Fe-55	3.54E+00	1.00E-04	
Fe-59	3.20E-02	9.10E-07	
Co-58	1.27E+00	3.62E-05	
Co-60	1.00E+01	2.84E-04	
Ni-59	4.58E-02	1.30E-06	
Ni-63	6.55E+00	1.86E-04	
Sr-90	3.84E+00	1.09E-04	
Y-90	3.84E+00	1.09E-04	
Zr-95	3.89E-02	1.10E-06	
Tc-99	6.87E-04	1.95E-08	
Ru-106	3.75E-01	1.06E-05	
Rh-106	3.75E-01	1.06E-05	
Sb-125	1.07E-01	3.06E-06	
Te-125m	2.63E-02	7.47E-07	
Cs-134	4.36E-01	1.24E-05	
Cs-137	4.03E+00	1.14E-04	
Ba-137m	3.81E+00	1.08E-04	
Ce-144	1.25E+00	3.57E-05	
Pr-144	1.25E+00	3.57E-05	
Pr-144m	1.51E-02	4.29E-07	
Pm-147	3.06E+00	8.71E-05	
Sm-151	3.00E-02	8.52E-07	
Eu-152	4.58E-04	1.30E-08	
Eu-154	7.85E-02	2.23E-06	
Eu-155	6.22E-02	1.76E-06	
Tl-208	3.26E-04	9.27E-09	
Pb-212	8.64E-04	2.45E-08	
Bi-212	8.64E-04	2.45E-08	
Po-212	5.57E-04	1.58E-08	
Po-216	8.64E-04	2.45E-08	
Ra-224	8.64E-04	2.45E-08	
Ra-228	5.16E-03	1.46E-07	
Ac-228	5.16E-03	1.46E-07	
Th-228	8.64E-04	2.45E-08	
Th-231	4.97E-03	1.41E-07	
Th-232	5.24E-02	1.48E-06	
Th-234	6.37E+00	1.81E-04	
Pa-234	6.53E-04	1.85E-08	
Pa-234m	6.37E+00	1.81E-04	
U-235	4.95E-03	1.40E-07	
U-238	6.37E+00	1.81E-04	
Pu-238	9.45E-02	2.68E-06	
Pu-239	9.16E-04	2.60E-08	
Pu-240	4.58E-04	1.30E-08	
Pu-241	1.05E-01	3.00E-06	
Am-241	1.37E-03	3.90E-08	

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: SRS

Waste Handling: CH non-alpha

2 SOLIDIFICATION

Thruput Volume	Thruput Mass
m3/year 3.26E+01	kg/year 4.04E+04

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	3.20E+00	4.80E-02
Cr-51	4.99E-01	3.39E-14
Mn-54	9.50E-01	6.46E-14
Fe-55	3.54E+00	2.41E-13
Fe-59	3.20E-02	2.18E-15
Co-58	1.27E+00	8.67E-14
Co-60	1.00E+01	6.81E-13
Ni-59	4.58E-02	3.11E-15
Ni-63	6.55E+00	4.45E-13
Sr-90	3.84E+00	2.61E-13
Y-90	3.84E+00	2.61E-13
Zr-95	3.89E-02	2.64E-15
Tc-99	6.87E-04	4.67E-17
Ru-106	3.75E-01	2.55E-14
Rh-106	3.75E-01	2.55E-14
Sb-125	1.07E-01	7.33E-15
Te-125m	2.63E-02	1.79E-15
Cs-134	4.36E-01	2.96E-14
Cs-137	4.03E+00	2.74E-13
Ba-137m	3.81E+00	2.59E-13
Ce-144	1.25E+00	8.54E-14
Pr-144	1.25E+00	8.54E-14
Pr-144m	1.51E-02	1.02E-15
Pm-147	3.06E+00	2.08E-13
Sm-151	2.99E-02	2.03E-15
Eu-152	4.58E-04	3.11E-17
Eu-154	7.85E-02	5.34E-15
Eu-155	6.22E-02	4.23E-15
Tl-208	3.26E-04	2.22E-17
Pb-212	8.64E-04	5.87E-17
Bi-212	8.64E-04	5.87E-17
Po-212	5.57E-04	3.78E-17
Po-216	8.64E-04	5.87E-17
Ra-224	8.64E-04	5.87E-17
Ra-228	5.16E-03	3.51E-16
Ac-228	5.16E-03	3.51E-16
Th-228	8.64E-04	5.87E-17
Th-231	4.97E-03	3.38E-16
Th-232	5.24E-02	3.56E-15
Th-234	6.37E+00	4.33E-13
Pa-234	6.53E-04	4.44E-17
Pa-234m	6.37E+00	4.33E-13
U-235	4.95E-03	3.37E-16
U-238	6.37E+00	4.33E-13
Pu-238	9.45E-02	6.43E-15
Pu-239	9.16E-04	6.22E-17
Pu-240	4.58E-04	3.11E-17
Pu-241	1.05E-01	7.19E-15
Am-241	1.37E-03	9.34E-17

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: SRS

Waste Handling: CH non-alpha

4 COMPACTION

Thruput Volume	4.62E+03	Thruput Mass	6.94E+05
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	6.65E-01	9.98E-11
C-14	3.27E-02	4.90E-12
Mn-54	3.68E+00	5.52E-10
Co-58	3.40E+00	5.10E-10
Co-60	9.83E+00	1.47E-09
Ni-63	9.14E-03	1.37E-12
Sr-90	5.43E+00	8.15E-10
Y-90	5.43E+00	8.15E-10
Tc-99	6.55E-02	9.83E-12
Ru-106	7.93E-02	1.19E-11
Rh-106	7.93E-02	1.19E-11
Sb-125	2.27E-02	3.41E-12
Te-125m	5.56E-03	8.34E-13
Cs-134	7.71E+00	1.15E-09
Cs-137	1.09E+01	1.63E-09
Ba-137m	1.03E+01	1.54E-09
Ce-144	2.65E-01	3.98E-11
Pr-144	2.65E-01	3.98E-11
Pr-144m	3.19E-03	4.79E-13
Pm-147	6.48E-01	9.72E-11
Sm-151	6.33E-03	9.50E-13
Eu-152	9.67E-05	1.45E-14
Eu-154	1.65E-02	2.48E-12
Eu-155	1.31E-02	1.97E-12
Tl-208	2.05E-05	3.08E-15
Pb-212	5.44E-05	8.16E-15
Bi-212	5.44E-05	8.16E-15
Po-212	3.50E-05	5.26E-15
Po-216	5.44E-05	8.16E-15
Ra-224	5.44E-05	8.16E-15
Ra-228	3.25E-04	4.88E-14
Ac-228	3.25E-04	4.88E-14
Th-228	5.44E-05	8.16E-15
Th-231	3.13E-04	4.70E-14
Th-232	3.30E-03	4.95E-13
Th-234	4.01E-01	6.02E-11
Pa-234	4.11E-05	6.17E-15
Pa-234m	4.01E-01	6.02E-11
U-235	3.12E-04	4.68E-14
U-238	7.99E-01	1.19E-10
Pu-238	1.99E-02	2.99E-12
Pu-239	1.93E-04	2.90E-14
Pu-240	9.67E-05	1.45E-14
Pu-241	2.23E-02	3.35E-12
Am-241	2.90E-04	4.35E-14

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: SRS

Waste Handling: CH non-alpha

11 PACKAGING

Thruput Volume	Thruput Mass
m3/year 1.99E+04	kg/year 5.82E+07

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.36E+04	1.01E-03
C-14	5.11E-01	2.19E-08
Cr-51	9.76E+02	4.20E-05
Mn-54	1.91E+03	8.24E-05
Fe-55	6.94E+03	2.98E-04
Fe-59	6.27E+01	2.69E-06
Co-58	2.54E+03	1.09E-04
Co-60	1.97E+04	8.48E-04
Ni-59	8.96E+01	3.85E-06
Ni-63	1.27E+04	5.48E-04
Sr-90	1.76E+03	7.60E-05
Y-90	1.76E+03	7.60E-05
Zr-95	7.61E+01	3.27E-06
Tc-99	1.32E+00	5.70E-08
Ru-106	1.65E+02	7.12E-06
Rh-106	1.65E+02	7.12E-06
Sb-125	4.75E+01	2.04E-06
Te-125m	1.16E+01	4.99E-07
Cs-134	3.11E+02	1.34E-05
Cs-137	1.93E+03	8.32E-05
Ba-137m	1.83E+03	7.87E-05
Ce-144	5.54E+02	2.38E-05
Pr-144	5.54E+02	2.38E-05
Pr-144m	6.66E+00	2.86E-07
Pm-147	1.35E+03	5.82E-05
Sm-151	1.32E+01	5.69E-07
Eu-152	2.02E-01	8.68E-09
Eu-154	3.46E+01	1.48E-06
Eu-155	2.74E+01	1.18E-06
U-238	6.22E+00	2.67E-07
Pu-238	4.19E+01	1.80E-06
Pu-239	4.18E-01	1.79E-08
Pu-240	2.51E-01	1.08E-08
Pu-241	5.35E+01	2.30E-06
Am-241	6.06E-01	2.60E-08
Cm-242	3.97E-03	1.70E-10
Cm-244	1.42E-03	6.10E-11

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: SRS

Waste Handling: CH non-alpha

14 BELOW_GROUND_VA	Thruput Volume m3/year	5.30E+04	Thruput Mass kg/year	1.15E+08
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	3.37E+04		2.02E-02	
C-14	5.43E-01		3.26E-07	
Cr-51	9.77E+02		5.86E-04	
Mn-54	1.92E+03		1.15E-03	
Fe-55	6.94E+03		4.16E-03	
Fe-59	6.27E+01		3.76E-05	
Co-58	2.55E+03		1.53E-03	
Co-60	1.97E+04		1.18E-02	
Ni-59	8.96E+01		5.37E-05	
Ni-63	1.27E+04		7.65E-03	
Sr-90	2.11E+03		1.26E-03	
Y-90	2.11E+03		1.26E-03	
Zr-95	7.62E+01		4.57E-05	
Tc-99	6.38E+01		3.82E-05	
Ru-106	1.67E+02		1.00E-04	
Rh-106	1.67E+02		1.00E-04	
Sb-125	6.48E+01		3.88E-05	
Te-125m	1.16E+01		7.00E-06	
Cs-134	3.20E+02		1.92E-04	
Cs-137	2.00E+03		1.20E-03	
Ba-137m	1.90E+03		1.14E-03	
Ce-144	5.57E+02		3.34E-04	
Pr-144	5.57E+02		3.34E-04	
Pr-144m	6.69E+00		4.01E-06	
Pm-147	1.79E+03		1.07E-03	
Sm-151	1.32E+01		7.97E-06	
Eu-152	2.02E-01		1.21E-07	
Eu-154	3.48E+01		2.08E-05	
Eu-155	2.76E+01		1.65E-05	
Tl-208	4.27E-04		2.56E-10	
Pb-212	1.13E-03		6.78E-10	
Bi-212	1.13E-03		6.78E-10	
Po-212	7.28E-04		4.37E-10	
Po-216	1.13E-03		6.78E-10	
Ra-224	1.13E-03		6.78E-10	
Ra-228	6.75E-03		4.05E-09	
Ac-228	6.75E-03		4.05E-09	
Th-228	1.13E-03		6.78E-10	
Th-231	6.50E-03		3.90E-09	
Th-232	6.85E-02		4.11E-08	
Th-234	8.33E+00		5.00E-06	
Pa-234	8.54E-04		5.12E-10	
Pa-234m	8.33E+00		5.00E-06	
U-235	6.48E-03		3.88E-09	
U-238	1.49E+01		8.97E-06	
Pu-238	4.22E+01		2.53E-05	
Pu-239	4.32E-01		2.59E-07	
Pu-240	2.94E-01		1.76E-07	
Pu-241	5.95E+01		3.57E-05	
Am-241	6.09E-01		3.65E-07	
Cm-242	7.33E-03		4.40E-09	
Cm-244	2.62E-03		1.57E-09	

Table B.2 No Action Alternative LLW: Radionuclide Thruput and Air Release by Site and Technology at Treatment Sites -- Cont.

Treatment Site: SRS

Waste Handling: CH non-alpha

96 CERTIFY_SHIP

Thruput Volume	5.10E+04	Thruput Mass	1.15E+08
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.37E+04	.
C-14	5.43E-01	.
Cr-51	9.77E+02	.
Mn-54	1.92E+03	.
Fe-55	6.94E+03	.
Fe-59	6.27E+01	.
Co-58	2.55E+03	.
Co-60	1.97E+04	.
Ni-59	8.96E+01	.
Ni-63	1.27E+04	.
Sr-90	2.11E+03	.
Y-90	2.11E+03	.
Zr-95	7.62E+01	.
Tc-99	6.38E+01	.
Ru-106	1.67E+02	.
Rh-106	1.67E+02	.
Sb-125	6.48E+01	.
Te-125m	1.16E+01	.
Cs-134	3.20E+02	.
Cs-137	2.00E+03	.
Ba-137m	1.90E+03	.
Ce-144	5.57E+02	.
Pr-144	5.57E+02	.
Pr-144m	6.69E+00	.
Pm-147	1.79E+03	.
Sm-151	1.32E+01	.
Eu-152	2.02E-01	.
Eu-154	3.48E+01	.
Eu-155	2.76E+01	.
Tl-208	4.27E-04	.
Pb-212	1.13E-03	.
Bi-212	1.13E-03	.
Po-212	7.28E-04	.
Po-216	1.13E-03	.
Ra-224	1.13E-03	.
Ra-228	6.75E-03	.
Ac-228	6.75E-03	.
Th-228	1.13E-03	.
Th-231	6.50E-03	.
Th-232	6.85E-02	.
Th-234	8.33E+00	.
Pa-234	8.54E-04	.
Pa-234m	8.33E+00	.
U-235	6.48E-03	.
U-238	1.49E+01	.
Pu-238	4.22E+01	.
Pu-239	4.32E-01	.
Pu-240	2.94E-01	.
Pu-241	5.95E+01	.
Am-241	6.09E-01	.
Cm-242	7.33E-03	.
Cm-244	2.62E-03	.

DISPOSAL

Table B.3 No Action Alternative: Disposal Volumes, Activities, and Air Release at Disposal Sites

Disposal Site: Hanford

Waste Handling: CH non-alpha

13 SHALLOW_LAND_BU	Thruput Volume		Thruput Mass	
	m3/year	5.50E+03	kg/year	3.14E+07
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	8.22E+02		4.93E-04	
C-14	6.05E-01		3.63E-07	
Cr-51	9.24E+03		5.54E-03	
Mn-54	1.76E+04		1.06E-02	
Fe-55	6.57E+04		3.94E-02	
Fe-59	5.93E+02		3.56E-04	
Co-58	2.36E+04		1.42E-02	
Co-60	1.85E+05		1.11E-01	
Ni-59	8.48E+02		5.08E-04	
Ni-63	1.20E+05		7.23E-02	
Sr-90	1.06E+03		6.37E-04	
Y-90	1.06E+03		6.37E-04	
Zr-95	7.21E+02		4.32E-04	
Tc-99	1.38E+00		8.31E-07	
Ru-106	9.54E+01		5.72E-05	
Rh-106	9.54E+01		5.72E-05	
Sb-125	2.74E+01		1.64E-05	
Te-125m	6.69E+00		4.01E-06	
Cs-134	2.51E+02		1.51E-04	
Cs-137	1.21E+03		7.26E-04	
Ba-137m	1.14E+03		6.87E-04	
Ce-144	3.19E+02		1.91E-04	
Pr-144	3.19E+02		1.91E-04	
Pr-144m	3.84E+00		2.30E-06	
Pm-147	7.79E+02		4.67E-04	
Sm-151	7.62E+00		4.57E-06	
Eu-152	1.16E-01		6.98E-08	
Eu-154	1.99E+01		1.19E-05	
Eu-155	1.58E+01		9.49E-06	
Tl-208	1.37E-04		8.26E-11	
Pb-212	3.64E-04		2.18E-10	
Bi-212	3.64E-04		2.18E-10	
Po-212	2.34E-04		1.40E-10	
Po-216	3.64E-04		2.18E-10	
Ra-224	3.64E-04		2.18E-10	
Ra-228	2.17E-03		1.30E-09	
Ac-228	2.17E-03		1.30E-09	
Th-228	3.64E-04		2.18E-10	
Th-231	2.09E-03		1.25E-09	
Th-232	2.21E-02		1.32E-08	
Th-234	2.68E+00		1.61E-06	
Pa-234	2.75E-04		1.65E-10	
Pa-234m	2.68E+00		1.61E-06	
U-235	2.08E-03		1.25E-09	
U-238	1.00E+01		6.03E-06	
Pu-238	2.40E+01		1.44E-05	
Pu-239	2.32E-01		1.39E-07	
Pu-240	1.16E-01		6.98E-08	
Pu-241	2.68E+01		1.61E-05	
Am-241	3.49E-01		2.09E-07	
Cm-242	7.42E-06		4.45E-12	
Cm-244	5.27E+00		3.16E-06	

Table B.3 No Action Alternative: Disposal Volumes, Activities, and Air Release at Disposal Sites -- Cont.

Disposal Site: Hanford Waste Handling: CH non-alpha

14 BELOW_GROUND_VA	Thruput Volume m3/year	2.12E+04	Thruput Mass kg/year	3.81E+07
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
	Sr-90	1.61E+05	9.66E-02	
	Y-90	1.61E+05	9.66E-02	
	Ru-106	2.53E+05	1.51E-01	
	Rh-106	2.53E+05	1.51E-01	
	Cs-137	5.48E+06	3.29E+00	
	Ba-137m	5.18E+06	3.11E+00	
13 SHALLOW_LAND_BU	Thruput Volume m3/year	2.48E+03	Thruput Mass kg/year	1.00E+07
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
	H-3	1.53E+00	9.22E-07	
	Cr-51	1.84E+03	1.10E-03	
	Mn-54	3.51E+03	2.10E-03	
	Fe-55	1.31E+04	7.86E-03	
	Fe-59	1.18E+02	7.10E-05	
	Co-58	4.71E+03	2.82E-03	
	Co-60	3.69E+04	2.21E-02	
	Ni-59	1.69E+02	1.01E-04	
	Ni-63	2.40E+04	1.44E-02	
	Sr-90	2.50E+01	1.50E-05	
	Y-90	2.50E+01	1.50E-05	
	Zr-95	1.43E+02	8.63E-05	
	Tc-99	4.48E-03	2.68E-09	
	Ru-106	2.45E+00	1.47E-06	
	Rh-106	2.45E+00	1.47E-06	
	Sb-125	7.03E-01	4.22E-07	
	Te-125m	1.71E-01	1.03E-07	
	Cs-134	2.84E+00	1.70E-06	
	Cs-137	2.63E+01	1.58E-05	
	Ba-137m	2.49E+01	1.49E-05	

Table B.3 No Action Alternative: Disposal Volumes, Activities, and Air Release at Disposal Sites -- Cont.

Disposal Site: INEL Waste Handling: CH non-alpha

13 SHALLOW_LAND_BU	Thruput Volume		Thruput Mass	
	m3/year	2.48E+03	kg/year	1.00E+07
Nuclide		Activity (Ci/yr)	Air Release (Ci/yr)	
-----		-----	-----	
Ce-144		8.20E+00	4.92E-06	
Pr-144		8.20E+00	4.92E-06	
Pr-144m		9.86E-02	5.91E-08	
Pm-147		2.00E+01	1.20E-05	
Sm-151		1.95E-01	1.17E-07	
Eu-152		2.98E-03	1.79E-09	
Eu-154		5.12E-01	3.07E-07	
Eu-155		4.06E-01	2.43E-07	
Pu-238		6.17E-01	3.70E-07	
Pu-239		5.97E-03	3.58E-09	
Pu-240		2.98E-03	1.79E-09	
Pu-241		6.90E-01	4.14E-07	
Am-241		8.96E-03	5.37E-09	
Cm-242		2.44E-08	1.46E-14	
Cm-244		8.70E-09	5.22E-15	

Table B.3 No Action Alternative: Disposal Volumes, Activities, and Air Release at Disposal Sites -- Cont.

Disposal Site: ORR

Waste Handling: CH non-alpha

16 TUMULUS

Thruput Volume m3/year	1.20E+04	Thruput Mass kg/year	5.48E+07
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
H-3	4.84E+01	2.90E-05	
C-14	2.36E+00	1.41E-06	
Cr-51	5.56E-05	3.34E-11	
Mn-54	2.65E+02	1.59E-04	
Fe-55	3.95E-04	2.37E-10	
Fe-59	3.57E-06	2.14E-12	
Co-58	2.45E+02	1.47E-04	
Co-60	7.10E+02	4.26E-04	
Ni-59	5.10E-06	3.06E-12	
Ni-63	4.60E+00	2.76E-06	
Sr-90	7.42E+02	4.45E-04	
Y-90	7.42E+02	4.45E-04	
Zr-95	4.33E-06	2.60E-12	
Tc-99	4.78E+00	2.87E-06	
Ru-106	3.99E+01	2.40E-05	
Rh-106	3.99E+01	2.40E-05	
Sb-125	1.15E+01	6.88E-06	
Te-125m	2.80E+00	1.68E-06	
Cs-134	5.95E+02	3.57E-04	
Cs-137	1.15E+03	6.92E-04	
Ba-137m	1.09E+03	6.54E-04	
Ce-144	1.34E+02	8.02E-05	
Pr-144	1.34E+02	8.02E-05	
Pr-144m	1.61E+00	9.64E-07	
Pm-147	3.26E+02	1.96E-04	
Sm-151	3.19E+00	1.91E-06	
Eu-152	4.87E-02	2.92E-08	
Eu-154	8.35E+00	5.01E-06	
Eu-155	6.62E+00	3.97E-06	
Tl-208	1.91E-04	1.15E-10	
Pb-212	5.05E-04	3.03E-10	
Bi-212	5.05E-04	3.03E-10	
Po-212	3.26E-04	1.95E-10	
Po-216	5.05E-04	3.03E-10	
Ra-224	5.05E-04	3.03E-10	
Ra-228	3.02E-03	1.81E-09	
Ac-228	3.02E-03	1.81E-09	
Th-228	5.05E-04	3.03E-10	
Th-231	2.91E-03	1.74E-09	
Th-232	3.07E-02	1.84E-08	
Th-234	3.73E+00	2.24E-06	
Pa-234	3.82E-04	2.29E-10	
Pa-234m	3.73E+00	2.24E-06	
U-235	2.90E-03	1.74E-09	
U-238	3.24E+01	1.94E-05	
Pu-238	1.01E+01	6.04E-06	
Pu-239	9.84E-02	5.91E-08	
Pu-240	5.24E-02	3.14E-08	
Pu-241	1.18E+01	7.05E-06	
Am-241	1.46E-01	8.77E-08	
Cm-242	2.96E-04	1.77E-10	
Cm-244	1.06E-04	6.34E-11	

Table B.3 No Action Alternative: Disposal Volumes, Activities, and Air Release at Disposal Sites -- Cont.

Disposal Site: SRS

Waste Handling: CH non-alpha

14 BELOW_GROUND_VA

Thruput Volume	5.30E+04	Thruput Mass	1.15E+08
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	3.37E+04	2.02E-02
C-14	5.43E-01	3.26E-07
Cr-51	9.77E+02	5.86E-04
Mn-54	1.92E+03	1.15E-03
Fe-55	6.94E+03	4.16E-03
Fe-59	6.27E+01	3.76E-05
Co-58	2.55E+03	1.53E-03
Co-60	1.97E+04	1.18E-02
Ni-59	8.96E+01	5.37E-05
Ni-63	1.27E+04	7.65E-03
Sr-90	2.11E+03	1.26E-03
Y-90	2.11E+03	1.26E-03
Zr-95	7.62E+01	4.57E-05
Tc-99	6.38E+01	3.82E-05
Ru-106	1.67E+02	1.00E-04
Rh-106	1.67E+02	1.00E-04
Sb-125	6.48E+01	3.88E-05
Te-125m	1.16E+01	7.00E-06
Cs-134	3.20E+02	1.92E-04
Cs-137	2.00E+03	1.20E-03
Ba-137m	1.90E+03	1.14E-03
Ce-144	5.57E+02	3.34E-04
Pr-144	5.57E+02	3.34E-04
Pr-144m	6.69E+00	4.01E-06
Pm-147	1.79E+03	1.07E-03
Sm-151	1.32E+01	7.97E-06
Eu-152	2.02E-01	1.21E-07
Eu-154	3.48E+01	2.08E-05
Eu-155	2.76E+01	1.65E-05
Tl-208	4.27E-04	2.56E-10
Pb-212	1.13E-03	6.78E-10
Bi-212	1.13E-03	6.78E-10
Po-212	7.28E-04	4.37E-10
Po-216	1.13E-03	6.78E-10
Ra-224	1.13E-03	6.78E-10
Ra-228	6.75E-03	4.05E-09
Ac-228	6.75E-03	4.05E-09
Th-228	1.13E-03	6.78E-10
Th-231	6.50E-03	3.90E-09
Th-232	6.85E-02	4.11E-08
Th-234	8.33E+00	5.00E-06
Pa-234	8.54E-04	5.12E-10
Pa-234m	8.33E+00	5.00E-06
U-235	6.48E-03	3.88E-09
U-238	1.49E+01	8.97E-06
Pu-238	4.22E+01	2.53E-05
Pu-239	4.32E-01	2.59E-07
Pu-240	2.94E-01	1.76E-07
Pu-241	5.95E+01	3.57E-05
Am-241	6.09E-01	3.65E-07
Cm-242	7.33E-03	4.40E-09
Cm-244	2.62E-03	1.57E-09

Table B.3 No Action Alternative: Disposal Volumes, Activities, and Air Release at Disposal Sites -- Cont.

Disposal Site: SRS

Waste Handling: CH non-alpha

96 CERTIFY_SHIP

Thruput Volume	5.10E+04	Thruput Mass	1.15E+08
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.37E+04	.
C-14	5.43E-01	.
Cr-51	9.77E+02	.
Mn-54	1.92E+03	.
Fe-55	6.94E+03	.

APPENDIX C:

**MINIMUM TREATMENT ALTERNATIVES
RADIONUCLIDE THROUGHPUT AND AIR RELEASE BY SITE**

APPENDIX C:**MINIMUM TREATMENT ALTERNATIVES
RADIONUCLIDE THROUGHPUT AND AIR RELEASE BY SITE**

This appendix identifies the radiological characteristics of Waste Management low-level waste (LLW) managed at each site under the minimum treatment cases and the resulting air emissions. The data tables that follow were used as input to the risk assessment in the Waste Management Programmatic Environmental Impact Statement.

The site of waste treatment is identified under the heading "Treatment Site." The total input activity of LLW sent to the site for management is identified and the resulting air emissions are noted. Total activity and air release are reported on an annual basis (Ci/yr). The treatment quantities and air emissions would be the same across all minimum treatment cases, except for changes in packaging and disposal because of the changing number of disposal sites.

The total disposal volume (m^3), total activity (Ci) of waste disposed of, and the resulting air emissions (Ci) for each disposal site under the Regionalized 1, 3, 6 and Centralized 1 alternatives are presented following the treatment source terms and emissions for Regionalized 1 (which remain constant across all of the minimum treatment cases). In these data tables, the site is identified, the type of disposal technology assumed is noted (shallow land burial, tumulus, or belowground vault), and the total volume and mass of waste disposed of at the site are identified. Following this, each radionuclide disposed of is identified, along with the corresponding activity (in curies) placed in disposal and the total air emissions (in curies).

Belowground vault disposal at Hanford occurs for Hanford grout waste only. Saltstone disposal at Savannah River is included with the total waste disposal volume at that site because all waste is disposed of in belowground vaults. The saltstone-only volume, mass, and activities are the same as shown on the cover page of Appendix B and in Table B.1, respectively.

TREATMENT

Table C.1 Radionuclide Thruput and Air Release by Site

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: AMES

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	4.50E-07	1.93E-14
Pb-212	1.19E-06	5.12E-14
Bi-212	1.19E-06	5.12E-14
Po-212	7.68E-07	3.30E-14
Po-216	1.19E-06	5.12E-14
Ra-224	1.19E-06	5.12E-14
Ra-228	7.12E-06	3.06E-13
Ac-228	7.12E-06	3.06E-13
Th-228	1.19E-06	5.12E-14
Th-231	6.86E-06	2.95E-13
Th-232	7.23E-05	3.11E-12
Th-234	8.79E-03	3.78E-10
Pa-234	9.01E-07	3.87E-14
Pa-234m	8.79E-03	3.78E-10
U-235	6.83E-06	2.93E-13
U-238	8.79E-03	3.78E-10
Pu-238	6.94E-04	2.98E-11
Pu-239	5.30E-05	2.27E-12
Pu-240	1.85E-04	7.97E-12
Pu-241	2.55E-02	1.09E-09
Am-241	1.06E-06	4.55E-14
Cm-242	1.48E-05	6.38E-13
Cm-244	5.30E-06	2.27E-13

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: ANL-E

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.33E+02	5.74E-06
C-14	7.91E-02	3.40E-09
Cr-51	2.87E+00	1.23E-07
Mn-54	1.43E+01	6.19E-07
Fe-55	2.04E+01	8.78E-07
Fe-59	1.84E-01	7.94E-09
Co-58	1.55E+01	6.70E-07
Co-60	8.15E+01	3.50E-06
Ni-59	2.63E-01	1.13E-08
Ni-63	3.77E+01	1.62E-06
Sr-90	3.33E+01	1.43E-06
Y-90	3.33E+01	1.43E-06
Zr-95	2.24E-01	9.64E-09
Tc-99	1.62E-01	6.97E-09
Ru-106	2.16E+00	9.30E-08
Rh-106	2.16E+00	9.30E-08
Sb-125	6.21E-01	2.67E-08
Te-125m	1.51E-01	6.52E-09
Cs-134	2.09E+01	9.01E-07
Cs-137	4.75E+01	2.04E-06
Ba-137m	4.50E+01	1.93E-06
Ce-144	7.24E+00	3.11E-07
Pr-144	7.24E+00	3.11E-07
Pr-144m	8.70E-02	3.74E-09
Pm-147	1.76E+01	7.60E-07
Sm-151	1.72E-01	7.43E-09
Eu-152	2.63E-03	1.13E-10
Eu-154	4.52E-01	1.94E-08
Eu-155	3.58E-01	1.54E-08
U-238	9.63E-01	4.14E-08
Pu-238	5.44E-01	2.34E-08
Pu-239	5.27E-03	2.26E-10
Pu-240	2.63E-03	1.13E-10
Pu-241	6.09E-01	2.62E-08
Am-241	7.91E-03	3.40E-10

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: ANL-W

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	8.41E-02	9.54E-05
Cr-51	3.58E+03	1.54E-04
Mn-54	6.83E+03	2.93E-04
Fe-55	2.54E+04	1.09E-03
Fe-59	2.30E+02	9.90E-06
Co-58	9.16E+03	3.94E-04
Co-60	7.18E+04	3.09E-03
Ni-59	3.29E+02	1.41E-05
Ni-63	4.67E+04	2.01E-03
Sr-90	3.31E-02	1.36E-09
Y-90	3.31E-02	1.36E-09
Zr-95	2.79E+02	1.20E-05
Tc-99	5.91E-06	2.43E-13
Ru-106	3.23E-03	1.33E-10
Rh-106	3.23E-03	1.33E-10
Sb-125	9.29E-04	3.82E-11
Te-125m	2.26E-04	9.33E-12
Cs-134	3.76E-03	1.54E-10
Cs-137	2.33E-01	1.42E-09
Ba-137m	2.31E-01	1.35E-09
Ce-144	1.08E-02	4.45E-10
Pr-144	1.08E-02	4.45E-10
Pr-144m	1.30E-04	5.35E-12
Pm-147	2.64E-02	1.08E-09
Sm-151	2.58E-04	1.06E-11
Eu-152	3.94E-06	1.62E-13
Eu-154	6.76E-04	2.78E-11
Eu-155	5.36E-04	2.20E-11
Pu-238	8.17E-04	3.36E-11
Pu-239	8.06E-06	3.32E-13
Pu-240	4.55E-06	1.88E-13
Pu-241	9.95E-04	4.11E-11
Am-241	1.18E-05	4.87E-13
Cm-242	4.88E-08	2.09E-15
Cm-244	1.74E-08	7.48E-16

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: BAPL

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.51E-03	1.08E-10
Cr-51	4.75E+03	2.04E-04
Mn-54	9.04E+03	3.89E-04
Fe-55	3.37E+04	1.45E-03
Fe-59	3.05E+02	1.31E-05
Co-58	1.21E+04	5.22E-04
Co-60	9.52E+04	4.09E-03
Ni-59	4.36E+02	1.87E-05
Ni-63	6.19E+04	2.66E-03
Sr-90	2.11E+00	9.10E-08
Y-90	2.11E+00	9.10E-08
Zr-95	3.70E+02	1.59E-05
Tc-99	3.77E-04	1.62E-11
Ru-106	2.06E-01	8.88E-09
Rh-106	2.06E-01	8.88E-09
Sb-125	5.93E-02	2.55E-09
Te-125m	1.44E-02	6.22E-10
Cs-134	2.40E-01	1.03E-08
Cs-137	2.21E+00	9.53E-08
Ba-137m	2.09E+00	9.02E-08
Ce-144	6.91E-01	2.97E-08
Pr-144	6.91E-01	2.97E-08
Pr-144m	8.31E-03	3.57E-10
Pm-147	1.68E+00	7.25E-08
Sm-151	1.65E-02	7.09E-10
Eu-152	2.51E-04	1.08E-11
Eu-154	4.32E-02	1.85E-09
Eu-155	3.42E-02	1.47E-09
Tl-208	3.82E-06	1.64E-13
Pb-212	1.01E-05	4.34E-13
Bi-212	1.01E-05	4.34E-13
Po-212	6.51E-06	2.80E-13
Po-216	1.01E-05	4.34E-13
Ra-224	1.01E-05	4.34E-13
Ra-228	6.04E-05	2.60E-12
Ac-228	6.04E-05	2.60E-12
Th-228	1.01E-05	4.34E-13
Th-231	5.82E-05	2.50E-12
Th-232	6.13E-04	2.63E-11
Th-234	7.46E-02	3.20E-09
Pa-234	7.64E-06	3.28E-13
Pa-234m	7.46E-02	3.20E-09
U-235	5.79E-05	2.49E-12
U-238	7.46E-02	3.20E-09
Pu-238	5.20E-02	2.23E-09
Pu-239	5.03E-04	2.16E-11
Pu-240	2.51E-04	1.08E-11
Pu-241	5.81E-02	2.50E-09
Am-241	7.55E-04	3.25E-11

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: BNL

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	3.07E+02	6.29E-04
C-14	1.82E-01	7.81E-09
Cr-51	6.60E+00	2.84E-07
Mn-54	3.30E+01	1.42E-06
Fe-55	4.69E+01	2.02E-06
Fe-59	4.24E-01	1.82E-08
Co-58	3.58E+01	1.54E-06
Co-60	1.87E+02	8.04E-06
Ni-59	6.06E-01	2.60E-08
Ni-63	8.67E+01	3.73E-06
Sr-90	7.65E+01	3.29E-06
Y-90	7.65E+01	3.29E-06
Zr-95	5.15E-01	2.21E-08
Tc-99	3.72E-01	1.60E-08
Ru-106	4.96E+00	2.13E-07
Rh-106	4.96E+00	2.13E-07
Sb-125	1.43E+00	6.13E-08
Te-125m	3.48E-01	1.50E-08
Cs-134	4.81E+01	2.07E-06
Cs-137	1.09E+02	4.69E-06
Ba-137m	1.03E+02	4.44E-06
Ce-144	1.66E+01	7.15E-07
Pr-144	1.66E+01	7.15E-07
Pr-144m	2.00E-01	8.59E-09
Pm-147	4.06E+01	1.74E-06
Sm-151	3.97E-01	1.71E-08
Eu-152	6.05E-03	2.60E-10
Eu-154	1.04E+00	4.46E-08
Eu-155	8.23E-01	3.54E-08
U-238	2.21E+00	9.50E-08
Pu-238	1.25E+00	5.38E-08
Pu-239	1.21E-02	5.21E-10
Pu-240	6.05E-03	2.60E-10
Pu-241	1.40E+00	6.01E-08
Am-241	1.82E-02	7.81E-10

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: Fermi

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.01E-01	1.43E-02
Cr-51	4.47E-02	1.84E-09
Mn-54	8.51E-02	3.51E-09
Fe-55	3.17E-01	1.31E-08
Fe-59	2.87E-03	1.18E-10
Co-58	1.14E-01	4.71E-09
Co-60	8.96E-01	3.69E-08
Ni-59	4.10E-03	1.69E-10
Ni-63	5.83E-01	2.40E-08
Zr-95	3.48E-03	1.44E-10
Tl-208	3.78E-07	1.36E-14
Pb-212	1.00E-06	3.61E-14
Bi-212	1.00E-06	3.61E-14
Po-212	6.46E-07	2.33E-14
Po-216	1.00E-06	3.61E-14
Ra-224	1.00E-06	3.61E-14
Ra-228	5.99E-06	2.16E-13
Ac-228	5.99E-06	2.16E-13
Th-228	1.00E-06	3.61E-14
Th-231	5.77E-06	2.08E-13
Th-232	6.08E-05	2.19E-12
Th-234	7.39E-03	2.66E-10
Pa-234	7.57E-07	2.73E-14
Pa-234m	7.39E-03	2.66E-10
U-235	5.75E-06	2.07E-13
U-238	7.39E-03	2.66E-10

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.22E+01	1.53E-03
Cr-51	8.66E+01	5.35E-05
Mn-54	1.64E+02	1.01E-04
Fe-55	6.15E+02	3.80E-04
Fe-59	5.56E+00	3.44E-06
Co-58	2.21E+02	1.36E-04
Co-60	1.74E+03	1.07E-03
Ni-59	7.94E+00	4.91E-06
Ni-63	1.15E+03	7.12E-04
Sr-90	1.62E+05	9.78E-02
Y-90	1.62E+05	9.78E-02
Zr-95	6.75E+00	4.17E-06
Tc-99	3.44E-01	2.16E-07
Ru-106	2.53E+05	1.51E-01
Rh-106	2.53E+05	1.51E-01
Sb-125	5.41E+01	3.40E-05
Te-125m	1.32E+01	8.30E-06
Cs-134	2.19E+02	1.37E-04
Cs-137	5.48E+06	3.29E+00
Ba-137m	5.18E+06	3.11E+00
Ce-144	6.31E+02	3.96E-04
Pr-144	6.31E+02	3.96E-04
Pr-144m	7.58E+00	4.76E-06
Pm-147	1.54E+03	9.67E-04
Sm-151	1.50E+01	9.45E-06
Eu-152	2.29E-01	1.44E-07
Eu-154	3.94E+01	2.47E-05
Eu-155	3.12E+01	1.96E-05
Tl-208	2.70E-04	1.70E-10
Pb-212	7.16E-04	4.50E-10
Bi-212	7.16E-04	4.50E-10
Po-212	4.61E-04	2.90E-10
Po-216	7.16E-04	4.50E-10
Ra-224	7.16E-04	4.50E-10
Ra-228	4.28E-03	2.69E-09
Ac-228	4.28E-03	2.69E-09
Th-228	7.16E-04	4.50E-10
Th-231	4.12E-03	2.59E-09
Th-232	4.34E-02	2.73E-08
Th-234	5.28E+00	3.32E-06
Pa-234	5.41E-04	3.40E-10
Pa-234m	5.28E+00	3.32E-06
U-235	4.10E-03	2.58E-09
U-238	5.28E+00	3.32E-06
Pu-238	4.74E+01	2.98E-05
Pu-239	4.59E-01	2.88E-07
Pu-240	2.29E-01	1.44E-07
Pu-241	5.31E+01	3.33E-05
Am-241	6.89E-01	4.33E-07

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.69E+02	1.92E-01
Cr-51	6.00E+03	3.60E-03
Mn-54	1.14E+04	6.86E-03
Fe-55	4.26E+04	2.56E-02
Fe-59	3.85E+02	2.31E-04
Co-58	1.53E+04	9.21E-03
Co-60	1.20E+05	7.22E-02
Ni-59	5.50E+02	3.30E-04
Ni-63	7.83E+04	4.70E-02
Sr-90	5.01E+01	3.22E-05
Y-90	5.01E+01	3.22E-05
Zr-95	4.68E+02	2.81E-04
Tc-99	8.96E-03	5.76E-09
Ru-106	4.90E+00	3.15E-06
Rh-106	4.90E+00	3.15E-06
Sb-125	1.40E+00	9.04E-07
Te-125m	3.43E-01	2.20E-07
Cs-134	5.69E+00	3.66E-06
Cs-137	5.27E+01	3.39E-05
Ba-137m	4.99E+01	3.21E-05
Ce-144	1.64E+01	1.05E-05
Pr-144	1.64E+01	1.05E-05
Pr-144m	1.97E-01	1.26E-07
Pm-147	4.00E+01	2.57E-05
Sm-151	3.91E-01	2.51E-07
Eu-152	5.97E-03	3.84E-09
Eu-154	1.02E+00	6.58E-07
Eu-155	8.12E-01	5.22E-07
Pu-238	1.23E+00	7.93E-07
Pu-239	1.19E-02	7.68E-09
Pu-240	5.97E-03	3.84E-09
Pu-241	1.38E+00	8.87E-07
Am-241	1.79E-02	1.15E-08
Cm-242	4.88E-08	2.92E-14
Cm-244	1.74E-08	1.04E-14

Treatment Site: ITRI

H-3	6.17E+00	2.65E-07
C-14	3.03E-01	1.30E-08
Mn-54	3.41E+01	1.47E-06
Co-58	3.15E+01	1.35E-06
Co-60	9.12E+01	3.92E-06
Sr-90	4.28E+01	1.84E-06
Y-90	4.28E+01	1.84E-06
Tc-99	6.07E-01	2.61E-08
Cs-134	7.07E+01	3.04E-06
Cs-137	9.33E+01	4.01E-06
Ba-137m	8.82E+01	3.79E-06
U-238	3.69E+00	1.58E-07

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: K-25

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	3.04E-04	5.35E-12
Pb-212	8.05E-04	1.42E-11
Bi-212	8.05E-04	1.42E-11
Po-212	5.19E-04	9.13E-12
Po-216	8.05E-04	1.42E-11
Ra-224	8.05E-04	1.42E-11
Ra-228	4.81E-03	8.47E-11
Ac-228	4.81E-03	8.47E-11
Th-228	8.05E-04	1.42E-11
Th-231	4.63E-03	8.16E-11
Th-232	4.88E-02	8.60E-10
Th-234	5.94E+00	1.05E-07
Pa-234	6.08E-04	1.07E-11
Pa-234m	5.94E+00	1.05E-07
U-235	4.62E-03	8.12E-11
U-238	5.94E+00	1.05E-07

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: KAPL

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.02E-03	4.42E-11
C-14	4.80E-05	2.06E-12
Cr-51	1.13E+04	4.87E-04
Mn-54	2.15E+04	9.27E-04
Fe-55	8.05E+04	3.46E-03
Fe-59	7.28E+02	3.13E-05
Co-58	2.89E+04	1.24E-03
Co-60	2.27E+05	9.76E-03
Ni-59	1.04E+03	4.47E-05
Ni-63	1.47E+05	6.35E-03
Sr-90	5.21E-02	2.24E-09
Y-90	5.21E-02	2.24E-09
Zr-95	8.84E+02	3.80E-05
Tc-99	1.04E-04	4.47E-12
Ru-106	4.42E-03	1.90E-10
Rh-106	4.42E-03	1.90E-10
Sb-125	1.27E-03	5.46E-11
Te-125m	3.10E-04	1.33E-11
Cs-134	1.63E-02	7.02E-10
Cs-137	6.22E-02	2.67E-09
Ba-137m	5.89E-02	2.53E-09
Ce-144	1.48E-02	6.37E-10
Pr-144	1.48E-02	6.37E-10
Pr-144m	1.78E-04	7.66E-12
Pm-147	3.61E-02	1.55E-09
Sm-151	3.53E-04	1.52E-11
Eu-152	5.39E-06	2.32E-13
Eu-154	9.25E-04	3.98E-11
Eu-155	7.34E-04	3.15E-11
Tl-208	3.41E-08	1.46E-15
Pb-212	9.02E-08	3.87E-15
Bi-212	9.02E-08	3.87E-15
Po-212	5.81E-08	2.49E-15
Po-216	9.02E-08	3.87E-15
Ra-224	9.02E-08	3.87E-15
Ra-228	5.39E-07	2.31E-14
Ac-228	5.39E-07	2.31E-14
Th-228	9.02E-08	3.87E-15
Th-231	5.19E-07	2.23E-14
Th-232	5.47E-06	2.35E-13
Th-234	6.65E-04	2.86E-11
Pa-234	6.81E-08	2.92E-15
Pa-234m	6.65E-04	2.86E-11
U-235	5.17E-07	2.22E-14
U-238	1.24E-03	5.37E-11
Pu-238	1.11E-03	4.79E-11
Pu-239	1.07E-05	4.64E-13
Pu-240	5.39E-06	2.32E-13
Pu-241	1.24E-03	5.36E-11
Am-241	1.61E-05	6.96E-13

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: KCP

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.70E-02	1.16E-09
C-14	1.44E-04	6.22E-12
Mn-54	1.62E-02	7.00E-10
Co-58	1.50E-02	6.46E-10
Co-60	4.34E-02	1.86E-09
Sr-90	2.04E-02	8.79E-10
Y-90	2.04E-02	8.79E-10
Tc-99	2.89E-04	1.24E-11
Cs-134	3.37E-02	1.44E-09
Cs-137	4.44E-02	1.91E-09
Ba-137m	4.20E-02	1.80E-09
U-238	1.76E-03	7.56E-11

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: LANL

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	3.84E+05	2.46E-01
C-14	3.03E-01	1.82E-07
Cr-51	3.02E+01	1.83E-05
Mn-54	9.17E+01	5.55E-05
Fe-55	2.14E+02	1.30E-04
Fe-59	1.94E+00	1.18E-06
Co-58	1.08E+02	6.59E-05
Co-60	1.06E+03	6.58E-04
Ni-59	2.77E+00	1.68E-06
Ni-63	1.12E+03	7.08E-04
Sr-90	6.48E+04	4.16E-02
Y-90	6.48E+04	4.16E-02
Zr-95	2.35E+00	1.43E-06
Tc-99	1.21E+01	7.80E-06
Ru-106	6.32E+03	4.06E-03
Rh-106	6.32E+03	4.06E-03
Sb-125	1.81E+03	1.16E-03
Te-125m	4.43E+02	2.85E-04
Cs-134	7.42E+03	4.76E-03
Cs-137	6.79E+04	4.36E-02
Ba-137m	6.43E+04	4.13E-02
Ce-144	2.11E+04	1.36E-02
Pr-144	2.11E+04	1.36E-02
Pr-144m	2.54E+02	1.63E-04
Pm-147	5.16E+04	3.32E-02
Sm-151	5.04E+02	3.24E-04
Eu-152	7.70E+00	4.95E-06
Eu-154	1.32E+03	8.50E-04
Eu-155	1.04E+03	6.74E-04
Tl-208	1.66E-02	1.07E-08
Pb-212	4.42E-02	2.84E-08
Bi-212	4.42E-02	2.84E-08
Po-212	2.84E-02	1.83E-08
Po-216	4.42E-02	2.84E-08
Ra-224	4.42E-02	2.84E-08
Ra-228	2.64E-01	1.69E-07
Ac-228	2.64E-01	1.69E-07
Th-228	4.42E-02	2.84E-08
Th-231	2.54E-01	1.63E-07
Th-232	2.68E+00	1.72E-06
Th-234	3.26E+02	2.09E-04
Pa-234	3.33E-02	2.14E-08
Pa-234m	3.26E+02	2.09E-04
U-235	2.53E-01	1.62E-07
U-238	3.29E+02	2.11E-04
Pu-238	1.59E+03	1.02E-03
Pu-239	1.57E+01	1.01E-05
Pu-240	8.96E+00	5.76E-06
Pu-241	1.95E+03	1.25E-03
Am-241	2.31E+01	1.48E-05

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: LANL

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Cm-242	1.00E-01	6.42E-08
Cm-244	3.57E-02	2.29E-08

Treatment Site: LBL

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.06E+03	3.12E+02
C-14	1.13E+00	4.86E-08
Cr-51	6.32E-02	2.71E-09
Mn-54	1.27E+02	5.48E-06
Fe-55	4.49E-01	1.93E-08
Fe-59	4.06E-03	1.74E-10
Co-58	1.17E+02	5.06E-06
Co-60	3.41E+02	1.46E-05
Ni-59	5.80E-03	2.49E-10
Ni-63	8.24E-01	3.54E-08
Sr-90	1.59E+02	6.87E-06
Y-90	1.59E+02	6.87E-06
Zr-95	4.93E-03	2.12E-10
Tc-99	2.26E+00	9.72E-08
Cs-134	2.63E+02	1.13E-05
Cs-137	3.47E+02	1.49E-05
Ba-137m	3.28E+02	1.41E-05
U-238	1.37E+01	5.91E-07
Cm-244	1.05E+01	4.54E-07

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: LLNL

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	6.20E+04	3.24E+02
C-14	1.13E+00	6.79E-07
Cr-51	6.71E-02	4.02E-08
Mn-54	1.27E+02	7.66E-05
Fe-55	7.91E-01	4.75E-07
Fe-59	4.31E-03	2.58E-09
Co-58	1.17E+02	7.07E-05
Co-60	3.42E+02	2.05E-04
Ni-59	6.15E-03	3.69E-09
Ni-63	8.80E-01	5.28E-07
Sr-90	1.60E+02	9.63E-05
Y-90	1.60E+02	9.63E-05
Zr-95	5.23E-03	3.14E-09
Tc-99	2.26E+00	1.35E-06
Ru-106	4.24E-02	2.58E-08
Rh-106	4.24E-02	2.58E-08
Sb-125	1.21E-02	7.43E-09
Te-125m	2.97E-03	1.81E-09
Cs-134	2.63E+02	1.58E-04
Cs-137	3.48E+02	2.09E-04
Ba-137m	3.29E+02	1.97E-04
Ce-144	1.42E-01	8.66E-08
Pr-144	1.42E-01	8.66E-08
Pr-144m	1.70E-03	1.04E-09
Pm-147	3.46E-01	2.11E-07
Sm-151	3.39E-03	2.06E-09
Eu-152	5.17E-05	3.15E-11
Eu-154	8.87E-03	5.41E-09
Eu-155	7.03E-03	4.29E-09
Tl-208	6.40E-05	3.84E-11
Pb-212	1.69E-04	1.01E-10
Bi-212	1.69E-04	1.01E-10
Po-212	1.09E-04	6.55E-11
Po-216	1.69E-04	1.01E-10
Ra-224	1.69E-04	1.01E-10
Ra-228	1.01E-03	6.07E-10
Ac-228	1.01E-03	6.07E-10
Th-228	1.69E-04	1.01E-10
Th-231	9.75E-04	5.85E-10
Th-232	1.02E-02	6.16E-09
Th-234	1.25E+00	7.50E-07
Pa-234	1.28E-04	7.68E-11
Pa-234m	1.25E+00	7.50E-07
U-235	9.71E-04	5.83E-10
U-238	1.50E+01	9.01E-06
Pu-238	7.85E-02	4.78E-08
Pu-239	5.28E-03	3.22E-09
Pu-240	1.81E-02	1.10E-08
Pu-241	2.50E+00	1.52E-06
Am-241	2.58E-04	1.57E-10

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: LLNL

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Cm-242	1.44E-03	8.84E-10
Cm-244	1.05E+01	6.33E-06

Treatment Site: Mound

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.34E+04	5.76E-04
Pu-238	1.60E-01	3.48E-09
Pu-239	1.22E-02	2.66E-10
Pu-240	4.28E-02	9.32E-10
Pu-241	5.90E+00	1.28E-07
Am-241	2.44E-04	5.32E-12
Cm-242	3.42E-03	7.45E-11
Cm-244	1.22E-03	2.66E-11

Treatment Site: NRF

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Cr-51	2.31E+03	.
Mn-54	4.40E+03	.
Fe-55	1.64E+04	.
Fe-59	1.48E+02	.
Co-58	5.91E+03	.
Co-60	4.63E+04	.
Ni-59	2.12E+02	.
Ni-63	3.01E+04	.
Zr-95	1.80E+02	.

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: NTS

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	7.34E-05	2.81E-12
Co-60	3.49E-04	1.34E-11
Ni-63	6.94E-04	2.66E-11
Sr-90	6.17E-02	2.36E-09
Y-90	6.17E-02	2.36E-09
Tc-99	1.10E-05	4.22E-13
Ru-106	6.02E-03	2.31E-10
Rh-106	6.02E-03	2.31E-10
Sb-125	1.73E-03	6.63E-11
Te-125m	4.22E-04	1.62E-11
Cs-134	7.00E-03	2.68E-10
Cs-137	6.46E-02	2.48E-09
Ba-137m	6.12E-02	2.34E-09
Ce-144	2.02E-02	7.73E-10
Pr-144	2.02E-02	7.73E-10
Pr-144m	2.42E-04	9.29E-12
Pm-147	4.92E-02	1.89E-09
Sm-151	4.81E-04	1.84E-11
Eu-152	7.34E-06	2.81E-13
Eu-154	1.26E-03	4.83E-11
Eu-155	9.99E-04	3.83E-11
Pu-238	1.52E-03	5.81E-11
Pu-239	1.47E-05	5.63E-13
Pu-240	7.34E-06	2.81E-13
Pu-241	1.70E-03	6.50E-11
Am-241	2.20E-05	8.44E-13

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: ORISE

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	4.01E-04	1.72E-11
C-14	2.38E-07	1.02E-14
Mn-54	2.68E-05	1.15E-12
Co-58	2.47E-05	1.06E-12
Co-60	7.14E-05	3.07E-12
Sr-90	3.36E-05	1.44E-12
Y-90	3.36E-05	1.44E-12
Tc-99	4.75E-07	2.04E-14
Cs-134	5.54E-05	2.38E-12
Cs-137	7.31E-05	3.14E-12
Ba-137m	6.91E-05	2.97E-12
Tl-208	6.73E-09	2.89E-16
Pb-212	1.78E-08	7.66E-16
Bi-212	1.78E-08	7.66E-16
Po-212	1.15E-08	4.94E-16
Po-216	1.78E-08	7.66E-16
Ra-224	1.78E-08	7.66E-16
Ra-228	1.07E-07	4.58E-15
Ac-228	1.07E-07	4.58E-15
Th-228	1.78E-08	7.66E-16
Th-231	1.03E-07	4.41E-15
Th-232	1.08E-06	4.65E-14
Th-234	1.31E-04	5.65E-12
Pa-234	1.35E-08	5.79E-16
Pa-234m	1.31E-04	5.65E-12
U-235	1.02E-07	4.39E-15
U-238	1.34E-04	5.78E-12

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: ORNL

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	9.68E+01	4.72E-08
C-14	4.71E+00	2.62E-10
Cr-51	1.11E-04	4.78E-12
Mn-54	5.31E+02	2.95E-08
Fe-55	7.90E-04	3.40E-11
Fe-59	7.14E-06	3.07E-13
Co-58	4.90E+02	2.72E-08
Co-60	1.42E+03	2.78E-07
Ni-59	1.02E-05	4.39E-13
Ni-63	9.20E+00	3.96E-07
Sr-90	1.48E+03	3.52E-05
Y-90	1.48E+03	3.52E-05
Zr-95	8.67E-06	3.73E-13
Tc-99	9.57E+00	6.81E-09
Ru-106	7.99E+01	3.43E-06
Rh-106	7.99E+01	3.43E-06
Sb-125	2.29E+01	9.86E-07
Te-125m	5.60E+00	2.41E-07
Cs-134	1.19E+03	4.05E-06
Cs-137	2.31E+03	3.69E-05
Ba-137m	2.18E+03	3.50E-05
Ce-144	2.67E+02	1.15E-05
Pr-144	2.67E+02	1.15E-05
Pr-144m	3.21E+00	1.38E-07
Pm-147	6.52E+02	2.81E-05
Sm-151	6.38E+00	2.74E-07
Eu-152	9.74E-02	4.19E-09
Eu-154	1.67E+01	7.18E-07
Eu-155	1.32E+01	5.70E-07
Tl-208	1.80E-05	1.22E-18
Pb-212	4.75E-05	3.23E-18
Bi-212	4.75E-05	3.23E-18
Po-212	3.06E-05	2.08E-18
Po-216	4.75E-05	3.23E-18
Ra-224	4.75E-05	3.23E-18
Ra-228	2.84E-04	1.93E-17
Ac-228	2.84E-04	1.93E-17
Th-228	4.75E-05	3.23E-18
Th-231	2.74E-04	1.86E-17
Th-232	2.88E-03	1.96E-16
Th-234	3.51E-01	2.38E-14
Pa-234	3.59E-05	2.44E-18
Pa-234m	3.51E-01	2.38E-14
U-235	2.72E-04	1.85E-17
U-238	5.77E+01	3.19E-09
Pu-238	2.01E+01	8.65E-07
Pu-239	1.97E-01	8.38E-09
Pu-240	1.05E-01	4.19E-09
Pu-241	2.35E+01	9.67E-07

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: ORNL

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Am-241	2.92E-01	1.26E-08
Cm-242	5.91E-04	4.02E-17
Cm-244	2.11E-04	1.44E-17

Treatment Site: Pantex

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.96E+00	1.35E+00
Tl-208	1.76E-06	9.08E-17
Pb-212	4.65E-06	2.40E-16
Bi-212	4.65E-06	2.40E-16
Po-212	3.00E-06	1.55E-16
Po-216	4.65E-06	2.40E-16
Ra-224	4.65E-06	2.40E-16
Ra-228	2.78E-05	1.44E-15
Ac-228	2.78E-05	1.44E-15
Th-228	4.65E-06	2.40E-16
Th-231	2.67E-05	1.38E-15
Th-232	2.82E-04	1.46E-14
Th-234	3.43E-02	1.77E-12
Pa-234	3.51E-06	1.82E-16
Pa-234m	3.43E-02	1.77E-12
U-235	2.66E-05	1.38E-15
U-238	3.43E-02	1.77E-12

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: PORTS

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.35E+04	8.12E-03
C-14	7.92E-02	4.75E-08
Cr-51	1.60E+04	9.65E-03
Mn-54	3.06E+04	1.83E-02
Fe-55	1.14E+05	6.86E-02
Fe-59	1.03E+03	6.20E-04
Co-58	4.11E+04	2.46E-02
Co-60	3.22E+05	1.93E-01
Ni-59	1.47E+03	8.85E-04
Ni-63	2.09E+05	1.25E-01
Sr-90	3.55E+01	2.13E-05
Y-90	3.55E+01	2.13E-05
Zr-95	1.25E+03	7.52E-04
Tc-99	1.62E-01	9.76E-08
Ru-106	2.37E+00	1.42E-06
Rh-106	2.37E+00	1.42E-06
Sb-125	6.81E-01	4.09E-07
Te-125m	1.66E-01	9.99E-08
Cs-134	2.12E+01	1.27E-05
Cs-137	4.98E+01	2.99E-05
Ba-137m	4.71E+01	2.82E-05
Ce-144	7.94E+00	4.76E-06
Pr-144	7.94E+00	4.76E-06
Pr-144m	9.55E-02	5.73E-08
Pm-147	1.94E+01	1.16E-05
Sm-151	1.89E-01	1.13E-07
Eu-152	2.89E-03	1.73E-09
Eu-154	4.96E-01	2.97E-07
Eu-155	3.93E-01	2.36E-07
Tl-208	8.49E-06	5.12E-12
Pb-212	2.24E-05	1.35E-11
Bi-212	2.24E-05	1.35E-11
Po-212	1.44E-05	8.73E-12
Po-216	2.24E-05	1.35E-11
Ra-224	2.24E-05	1.35E-11
Ra-228	1.34E-04	8.10E-11
Ac-228	1.34E-04	8.10E-11
Th-228	2.24E-05	1.35E-11
Th-231	1.29E-04	7.80E-11
Th-232	1.36E-03	8.22E-10
Th-234	1.65E-01	9.99E-08
Pa-234	1.69E-05	1.02E-11
Pa-234m	1.65E-01	9.99E-08
U-235	1.28E-04	7.77E-11
U-238	1.12E+00	6.78E-07
Pu-238	7.59E-01	4.55E-07
Pu-239	1.80E-02	1.08E-08
Pu-240	4.59E-02	2.75E-08
Pu-241	6.59E+00	3.95E-06
Am-241	8.93E-03	5.36E-09

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: PORTS

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
-----	-----	-----
Cm-242	3.44E-03	2.06E-09
Cm-244	1.23E-03	7.38E-10

Treatment Site: PPPL

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
-----	-----	-----
H-3	2.01E-01	8.70E-05
Cr-51	8.50E-04	3.65E-11
Mn-54	1.61E-03	6.95E-11
Fe-55	6.04E-03	2.59E-10
Fe-59	5.46E-05	2.34E-12
Co-58	2.17E-03	9.34E-11
Co-60	1.70E-02	7.32E-10
Ni-59	7.80E-05	3.35E-12
Ni-63	1.10E-02	4.76E-10
Zr-95	6.63E-05	2.85E-12

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: PGDP

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.70E-02	1.62E-08
C-14	1.44E-04	8.68E-11
Mn-54	1.62E-02	9.77E-09
Co-58	1.50E-02	9.02E-09
Co-60	4.34E-02	2.60E-08
Sr-90	2.04E-02	1.22E-08
Y-90	2.04E-02	1.22E-08
Tc-99	9.13E-03	5.84E-09
Cs-134	3.37E-02	2.02E-08
Cs-137	4.44E-02	2.66E-08
Ba-137m	4.20E-02	2.52E-08
Tl-208	3.72E-05	2.38E-11
Pb-212	9.84E-05	6.31E-11
Bi-212	9.84E-05	6.31E-11
Po-212	6.34E-05	4.06E-11
Po-216	9.84E-05	6.31E-11
Ra-224	9.84E-05	6.31E-11
Ra-228	5.88E-04	3.77E-10
Ac-228	5.88E-04	3.77E-10
Th-228	9.84E-05	6.31E-11
Th-231	5.66E-04	3.63E-10
Th-232	5.97E-03	3.83E-09
Th-234	7.26E-01	4.65E-07
Pa-234	7.44E-05	4.77E-11
Pa-234m	7.26E-01	4.65E-07
U-235	5.64E-04	3.62E-10
U-238	7.28E-01	4.66E-07
Np-237	6.63E-03	4.25E-09
Pu-239	6.63E-03	4.25E-09

Treatment Site: Pinellas

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.99E+04	8.56E-04

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: RFP

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	1.14E-05	7.15E-12
Pb-212	3.03E-05	1.89E-11
Bi-212	3.03E-05	1.89E-11
Po-212	1.95E-05	1.22E-11
Po-216	3.03E-05	1.89E-11
Ra-224	3.03E-05	1.89E-11
Ra-228	1.81E-04	1.13E-10
Ac-228	1.81E-04	1.13E-10
Th-228	3.03E-05	1.89E-11
Th-231	1.74E-04	1.09E-10
Th-232	1.84E-03	1.14E-09
Th-234	2.23E-01	1.39E-07
Pa-234	2.29E-05	1.43E-11
Pa-234m	2.23E-01	1.39E-07
U-235	1.73E-04	1.08E-10
U-238	2.23E-01	1.39E-07
Pu-238	1.76E-01	1.10E-07
Pu-239	1.34E-02	8.42E-09
Pu-240	4.71E-02	2.94E-08
Pu-241	6.49E+00	4.05E-06
Am-241	2.69E-04	1.68E-10
Cm-242	3.77E-03	2.35E-09
Cm-244	1.34E-03	8.42E-10
Tl-208	2.46E-05	1.58E-11
Pb-212	6.51E-05	4.19E-11
Bi-212	6.51E-05	4.19E-11
Po-212	4.19E-05	2.70E-11
Po-216	6.51E-05	4.19E-11
Ra-224	6.51E-05	4.19E-11
Ra-228	3.89E-04	2.50E-10
Ac-228	3.89E-04	2.50E-10
Th-228	6.51E-05	4.19E-11
Th-231	3.75E-04	2.41E-10
Th-232	3.95E-03	2.54E-09
Th-234	4.80E-01	3.09E-07
Pa-234	4.92E-05	3.16E-11
Pa-234m	4.80E-01	3.09E-07
U-235	3.73E-04	2.40E-10
U-238	4.80E-01	3.09E-07
Pu-238	3.79E-01	2.43E-07
Pu-239	2.89E-02	1.86E-08
Pu-240	1.01E-01	6.51E-08
Pu-241	1.39E+01	8.97E-06
Am-241	5.79E-04	3.72E-10
Cm-242	8.10E-03	5.21E-09
Cm-244	2.89E-03	1.86E-09

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: RMI

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	3.58E-07	1.44E-14
Pb-212	9.47E-07	3.82E-14
Bi-212	9.47E-07	3.82E-14
Po-212	6.10E-07	2.46E-14
Po-216	9.47E-07	3.82E-14
Ra-224	9.47E-07	3.82E-14
Ra-228	5.66E-06	2.28E-13
Ac-228	5.66E-06	2.28E-13
Th-228	9.47E-07	3.82E-14
Th-231	5.45E-06	2.20E-13
Th-232	5.74E-05	2.32E-12
Th-234	6.98E-03	2.82E-10
Pa-234	7.15E-07	2.89E-14
Pa-234m	6.98E-03	2.82E-10
U-235	5.43E-06	2.19E-13
U-238	6.98E-03	2.82E-10

Treatment Site: SLAC

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Cr-51	3.86E-03	1.66E-10
Mn-54	7.36E-03	3.16E-10
Fe-55	2.74E-02	1.17E-09
Fe-59	2.48E-04	1.06E-11
Co-58	9.88E-03	4.24E-10
Co-60	7.74E-02	3.32E-09
Ni-59	3.54E-04	1.52E-11
Ni-63	5.04E-02	2.16E-09
Zr-95	3.01E-04	1.29E-11

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: SNL-NM

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	3.00E+00	1.29E-07
Cr-51	6.54E-04	2.81E-11
Mn-54	1.24E-03	5.35E-11
Fe-55	4.64E-03	1.99E-10
Fe-59	4.20E-05	1.80E-12
Co-58	1.67E-03	7.18E-11
Co-60	1.31E-02	5.64E-10
Ni-59	6.00E-05	2.58E-12
Ni-63	8.58E-03	3.69E-10
Sr-90	5.04E-03	2.16E-10
Y-90	5.04E-03	2.16E-10
Zr-95	5.10E-05	2.19E-12
Tc-99	9.00E-07	3.87E-14
Ru-106	4.92E-04	2.11E-11
Rh-106	4.92E-04	2.11E-11
Sb-125	1.41E-04	6.07E-12
Te-125m	3.45E-05	1.48E-12
Cs-134	5.72E-04	2.46E-11
Cs-137	5.28E-03	2.27E-10
Ba-137m	4.99E-03	2.14E-10
Ce-144	1.64E-03	7.08E-11
Pr-144	1.64E-03	7.08E-11
Pr-144m	1.98E-05	8.51E-13
Pm-147	4.02E-03	1.72E-10
Sm-151	3.93E-05	1.68E-12
Eu-152	6.00E-07	2.58E-14
Eu-154	1.02E-04	4.42E-12
Eu-155	8.16E-05	3.50E-12
Tl-208	5.10E-06	2.19E-13
Pb-212	1.35E-05	5.80E-13
Bi-212	1.35E-05	5.80E-13
Po-212	8.70E-06	3.74E-13
Po-216	1.35E-05	5.80E-13
Ra-224	1.35E-05	5.80E-13
Ra-228	8.07E-05	3.47E-12
Ac-228	8.07E-05	3.47E-12
Th-228	1.35E-05	5.80E-13
Th-231	7.77E-05	3.34E-12
Th-232	8.19E-04	3.52E-11
Th-234	9.96E-02	4.28E-09
Pa-234	1.02E-05	4.38E-13
Pa-234m	9.96E-02	4.28E-09
U-235	7.74E-05	3.32E-12
U-238	9.96E-02	4.28E-09
Pu-238	7.87E-02	3.38E-09
Pu-239	6.00E-03	2.58E-10
Pu-240	2.10E-02	9.03E-10
Pu-241	2.89E+00	1.24E-07
Am-241	1.21E-04	5.23E-12
Cm-242	1.68E-03	7.22E-11

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: SNL-NM

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
-----	-----	-----
Cm-244	6.00E-04	2.58E-11

Treatment Site: SNL-CA

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
-----	-----	-----
H-3	2.82E+04	4.20E+02
Fe-55	3.15E-01	1.35E-08
Co-60	3.15E-01	1.35E-08
Tl-208	6.40E-05	2.75E-12
Pb-212	1.69E-04	7.28E-12
Bi-212	1.69E-04	7.28E-12
Po-212	1.09E-04	4.69E-12
Po-216	1.69E-04	7.28E-12
Ra-224	1.69E-04	7.28E-12
Ra-228	1.01E-03	4.35E-11
Ac-228	1.01E-03	4.35E-11
Th-228	1.69E-04	7.28E-12
Th-231	9.75E-04	4.19E-11
Th-232	1.02E-02	4.42E-10
Th-234	1.25E+00	5.37E-08
Pa-234	1.28E-04	5.50E-12
Pa-234m	1.25E+00	5.37E-08
U-235	9.71E-04	4.17E-11
U-238	1.25E+00	5.37E-08

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	6.77E+04	5.70E+00
C-14	1.08E+00	6.99E-07
Cr-51	1.95E+03	1.25E-03
Mn-54	3.84E+03	2.47E-03
Fe-55	1.38E+04	8.92E-03
Fe-59	1.25E+02	8.07E-05
Co-58	5.10E+03	3.28E-03
Co-60	3.94E+04	2.53E-02
Ni-59	1.79E+02	1.15E-04
Ni-63	2.55E+04	1.64E-02
Sr-90	3.89E+03	2.49E-03
Y-90	3.89E+03	2.49E-03
Zr-95	1.52E+02	9.80E-05
Tc-99	6.51E+01	3.92E-05
Ru-106	3.33E+02	2.14E-04
Rh-106	3.33E+02	2.14E-04
Sb-125	1.12E+02	7.16E-05
Te-125m	2.33E+01	1.50E-05
Cs-134	6.40E+02	4.11E-04
Cs-137	3.96E+03	2.54E-03
Ba-137m	3.74E+03	2.40E-03
Ce-144	1.11E+03	7.16E-04
Pr-144	1.11E+03	7.16E-04
Pr-144m	1.33E+01	8.61E-06
Pm-147	3.15E+03	2.01E-03
Sm-151	2.65E+01	1.70E-05
Eu-152	4.05E-01	2.61E-07
Eu-154	6.96E+01	4.47E-05
Eu-155	5.52E+01	3.54E-05
Tl-208	8.54E-04	5.42E-10
Pb-212	2.26E-03	1.43E-09
Bi-212	2.26E-03	1.43E-09
Po-212	1.45E-03	9.25E-10
Po-216	2.26E-03	1.43E-09
Ra-224	2.26E-03	1.43E-09
Ra-228	1.35E-02	8.58E-09
Ac-228	1.35E-02	8.58E-09
Th-228	2.26E-03	1.43E-09
Th-231	1.30E-02	8.26E-09
Th-232	1.37E-01	8.70E-08
Th-234	1.66E+01	1.05E-05
Pa-234	1.70E-03	1.08E-09
Pa-234m	1.66E+01	1.05E-05
U-235	1.29E-02	8.23E-09
U-238	2.99E+01	1.91E-05
Pu-238	8.45E+01	5.43E-05
Pu-239	8.64E-01	5.54E-07
Pu-240	5.89E-01	3.75E-07
Pu-241	1.19E+02	7.60E-05
Am-241	1.21E+00	7.83E-07

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
-----	-----	-----
Cm-242	1.46E-02	9.14E-09
Cm-244	5.24E-03	3.26E-09

Treatment Site: WVDP

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
-----	-----	-----
H-3	2.87E-01	2.04E-03
Co-60	1.36E+00	3.09E-08
Ni-63	2.72E+00	6.14E-08
Sr-90	2.41E+02	5.46E-06
Y-90	2.41E+02	5.46E-06
Tc-99	4.31E-02	9.75E-10
Ru-106	2.36E+01	5.33E-07
Rh-106	2.36E+01	5.33E-07
Sb-125	6.77E+00	1.53E-07
Te-125m	1.65E+00	3.74E-08
Cs-134	2.74E+01	6.20E-07
Cs-137	2.53E+02	5.72E-06
Ba-137m	2.39E+02	5.41E-06
Ce-144	7.89E+01	1.78E-06
Pr-144	7.89E+01	1.78E-06
Pr-144m	9.48E-01	2.14E-08
Pm-147	1.93E+02	4.35E-06
Sm-151	1.88E+00	4.26E-08
Eu-152	2.87E-02	6.50E-10
Eu-154	4.93E+00	1.11E-07
Eu-155	3.91E+00	8.84E-08
Pu-238	5.93E+00	1.34E-07
Pu-239	5.75E-02	1.30E-09
Pu-240	2.87E-02	6.50E-10
Pu-241	6.64E+00	1.50E-07
Am-241	8.62E-02	1.95E-09

Table C.1 Radionuclide Thruput and Air Release by Site -- Cont.

Alternative: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: Y-12

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	4.22E-05	9.16E-13
Pb-212	1.12E-04	2.42E-12
Bi-212	1.12E-04	2.42E-12
Po-212	7.21E-05	1.56E-12
Po-216	1.12E-04	2.42E-12
Ra-224	1.12E-04	2.42E-12
Ra-228	6.68E-04	1.45E-11
Ac-228	6.68E-04	1.45E-11
Th-228	1.12E-04	2.42E-12
Th-231	6.44E-04	1.40E-11
Th-232	6.78E-03	1.47E-10
Th-234	8.25E-01	1.79E-08
Pa-234	8.45E-05	1.83E-12
Pa-234m	8.25E-01	1.79E-08
U-235	6.41E-04	1.39E-11
U-238	8.25E-01	1.79E-08

DISPOSAL

Table C.2 Total Disposal Volume and Air Release by Site

LLW ALTERNATIVE: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Site: Hanford

SHALLOW_LAND_BURIAL	Total Volume (m3)	Total Mass (kg)
	9.44E+04	2.82E+08
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	2.22E+02	1.33E-04
Cr-51	8.66E+02	5.19E-04
Mn-54	1.64E+03	9.89E-04
Fe-55	6.15E+03	3.69E-03
Fe-59	5.56E+01	3.33E-05
Co-58	2.21E+03	1.32E-03
Co-60	1.74E+04	1.04E-02
Ni-59	7.94E+01	4.76E-05
Ni-63	1.15E+04	6.90E-03
Sr-90	1.93E+04	1.15E-02
Y-90	1.93E+04	1.15E-02
Zr-95	6.75E+01	4.05E-05
Tc-99	3.44E+00	2.06E-06
Ru-106	1.88E+03	1.13E-03
Rh-106	1.88E+03	1.13E-03
Sb-125	5.41E+02	3.24E-04
Te-125m	1.32E+02	7.93E-05
Cs-134	2.19E+03	1.31E-03
Cs-137	2.02E+04	1.21E-02
Ba-137m	1.91E+04	1.14E-02
Ce-144	6.31E+03	3.78E-03
Pr-144	6.31E+03	3.78E-03
Pr-144m	7.58E+01	4.55E-05
Pm-147	1.54E+04	9.24E-03
Sm-151	1.50E+02	9.03E-05
Eu-152	2.29E+00	1.37E-06
Eu-154	3.94E+02	2.36E-04
Eu-155	3.12E+02	1.87E-04
Tl-208	2.70E-03	1.62E-09
Pb-212	7.16E-03	4.29E-09
Bi-212	7.16E-03	4.29E-09
Po-212	4.61E-03	2.77E-09
Po-216	7.16E-03	4.29E-09
Ra-224	7.16E-03	4.29E-09
Ra-228	4.28E-02	2.57E-08
Ac-228	4.28E-02	2.57E-08
Th-228	7.16E-03	4.29E-09
Th-231	4.12E-02	2.47E-08
Th-232	4.34E-01	2.60E-07
Th-234	5.28E+01	3.17E-05
Pa-234	5.41E-03	3.24E-09
Pa-234m	5.28E+01	3.17E-05
U-235	4.10E-02	2.46E-08
U-238	5.28E+01	3.17E-05
Pu-238	4.74E+02	2.84E-04
Pu-239	4.59E+00	2.75E-06
Pu-240	2.29E+00	1.37E-06
Pu-241	5.31E+02	3.18E-04
Am-241	6.89E+00	4.13E-06

Table C.2 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Site: Hanford

BELOW_GROUND_VAULT	Total Volume (m3)	Total Mass (kg)
	4.24E+05	7.63E+08
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
Sr-90	3.22E+06	1.93E+00
Y-90	3.22E+06	1.93E+00
Ru-106	5.06E+06	3.03E+00
Rh-106	5.06E+06	3.03E+00
Cs-137	1.09E+08	6.58E+01
Ba-137m	1.03E+08	6.22E+01

Table C.2 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Site: INEL

SHALLOW_LAND_BURIAL	Total Volume (m3)	9.41E+04	Total Mass (kg)	2.95E+08
Radionuclide	Disposal Activity (Ci)		Air Release (Ci)	
H-3	3.07E+01		1.84E-05	
Cr-51	6.00E+04		3.60E-02	
Mn-54	1.14E+05		6.85E-02	
Fe-55	4.26E+05		2.56E-01	
Fe-59	3.85E+03		2.31E-03	
Co-58	1.53E+05		9.20E-02	
Co-60	1.20E+06		7.21E-01	
Ni-59	5.50E+03		3.30E-03	
Ni-63	7.83E+05		4.69E-01	
Sr-90	5.01E+02		3.01E-04	
Y-90	5.01E+02		3.01E-04	
Zr-95	4.68E+03		2.80E-03	
Tc-99	8.96E-02		5.37E-08	
Ru-106	4.90E+01		2.94E-05	
Rh-106	4.90E+01		2.94E-05	
Sb-125	1.40E+01		8.44E-06	
Te-125m	3.43E+00		2.06E-06	
Cs-134	5.69E+01		3.41E-05	
Cs-137	5.27E+02		3.16E-04	
Ba-137m	4.99E+02		2.99E-04	
Ce-144	1.64E+02		9.84E-05	
Pr-144	1.64E+02		9.84E-05	
Pr-144m	1.97E+00		1.18E-06	
Pm-147	4.00E+02		2.40E-04	
Sm-151	3.91E+00		2.34E-06	
Eu-152	5.97E-02		3.58E-08	
Eu-154	1.02E+01		6.14E-06	
Eu-155	8.12E+00		4.87E-06	
Pu-238	1.23E+01		7.40E-06	
Pu-239	1.19E-01		7.17E-08	
Pu-240	5.97E-02		3.58E-08	
Pu-241	1.38E+01		8.28E-06	
Am-241	1.79E-01		1.07E-07	
Cm-242	4.88E-07		2.92E-13	
Cm-244	1.74E-07		1.04E-13	

Table C.2 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Site: LANL

SHALLOW_LAND_BURIAL	Total Volume (m3)	Total Mass (kg)
	1.66E+05	2.14E+08
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	3.84E+06	2.30E+00
C-14	3.03E+00	1.82E-06
Cr-51	3.02E+02	1.81E-04
Mn-54	9.17E+02	5.50E-04
Fe-55	2.14E+03	1.28E-03
Fe-59	1.94E+01	1.16E-05
Co-58	1.08E+03	6.52E-04
Co-60	1.06E+04	6.37E-03
Ni-59	2.77E+01	1.66E-05
Ni-63	1.12E+04	6.73E-03
Sr-90	6.48E+05	3.88E-01
Y-90	6.48E+05	3.88E-01
Zr-95	2.35E+01	1.41E-05
Tc-99	1.21E+02	7.30E-05
Ru-106	6.32E+04	3.79E-02
Rh-106	6.32E+04	3.79E-02
Sb-125	1.81E+04	1.08E-02
Te-125m	4.43E+03	2.65E-03
Cs-134	7.42E+04	4.45E-02
Cs-137	6.79E+05	4.07E-01
Ba-137m	6.43E+05	3.85E-01
Ce-144	2.11E+05	1.26E-01
Pr-144	2.11E+05	1.26E-01
Pr-144m	2.54E+03	1.52E-03
Pm-147	5.16E+05	3.09E-01
Sm-151	5.04E+03	3.02E-03
Eu-152	7.70E+01	4.62E-05
Eu-154	1.32E+04	7.93E-03
Eu-155	1.04E+04	6.29E-03
Tl-208	1.66E-01	1.00E-07
Pb-212	4.42E-01	2.65E-07
Bi-212	4.42E-01	2.65E-07
Po-212	2.84E-01	1.70E-07
Po-216	4.42E-01	2.65E-07
Ra-224	4.42E-01	2.65E-07
Ra-228	2.64E+00	1.58E-06
Ac-228	2.64E+00	1.58E-06
Th-228	4.42E-01	2.65E-07
Th-231	2.54E+00	1.52E-06
Th-232	2.68E+01	1.60E-05
Th-234	3.26E+03	1.95E-03
Pa-234	3.33E-01	2.00E-07
Pa-234m	3.26E+03	1.95E-03
U-235	2.53E+00	1.52E-06
U-238	3.29E+03	1.97E-03
Pu-238	1.59E+04	9.58E-03
Pu-239	1.57E+02	9.46E-05
Pu-240	8.96E+01	5.37E-05
Pu-241	1.95E+04	1.17E-02
Am-241	2.31E+02	1.38E-04
Cm-242	1.00E+00	6.00E-07
Cm-244	3.57E-01	2.14E-07

Table C.2 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Site: LLNL

SHALLOW_LAND_BURIAL	Total Volume (m3)	8.32E+03	Total Mass (kg)	2.24E+07
Radionuclide	Disposal Activity (Ci)		Air Release (Ci)	
H-3	6.17E+05		3.70E-01	
C-14	1.13E+01		6.79E-06	
Cr-51	6.71E-01		4.02E-07	
Mn-54	1.27E+03		7.66E-04	
Fe-55	7.91E+00		4.75E-06	
Fe-59	4.31E-02		2.58E-08	
Co-58	1.17E+03		7.07E-04	
Co-60	3.42E+03		2.05E-03	
Ni-59	6.15E-02		3.69E-08	
Ni-63	8.80E+00		5.28E-06	
Sr-90	1.60E+03		9.63E-04	
Y-90	1.60E+03		9.63E-04	
Zr-95	5.23E-02		3.14E-08	
Tc-99	2.26E+01		1.35E-05	
Ru-106	4.24E-01		2.54E-07	
Rh-106	4.24E-01		2.54E-07	
Sb-125	1.21E-01		7.31E-08	
Te-125m	2.97E-02		1.78E-08	
Cs-134	2.63E+03		1.58E-03	
Cs-137	3.48E+03		2.09E-03	
Ba-137m	3.29E+03		1.97E-03	
Ce-144	1.42E+00		8.52E-07	
Pr-144	1.42E+00		8.52E-07	
Pr-144m	1.70E-02		1.02E-08	
Pm-147	3.46E+00		2.08E-06	
Sm-151	3.39E-02		2.03E-08	
Eu-152	5.17E-04		3.10E-10	
Eu-154	8.87E-02		5.32E-08	
Eu-155	7.03E-02		4.22E-08	
Tl-208	6.40E-04		3.84E-10	
Pb-212	1.69E-03		1.01E-09	
Bi-212	1.69E-03		1.01E-09	
Po-212	1.09E-03		6.55E-10	
Po-216	1.69E-03		1.01E-09	
Ra-224	1.69E-03		1.01E-09	
Ra-228	1.01E-02		6.07E-09	
Ac-228	1.01E-02		6.07E-09	
Th-228	1.69E-03		1.01E-09	
Th-231	9.75E-03		5.85E-09	
Th-232	1.02E-01		6.16E-08	
Th-234	1.25E+01		7.50E-06	
Pa-234	1.28E-03		7.68E-10	
Pa-234m	1.25E+01		7.50E-06	
U-235	9.71E-03		5.83E-09	
U-238	1.50E+02		9.01E-05	
Pu-238	7.85E-01		4.71E-07	
Pu-239	5.28E-02		3.16E-08	
Pu-240	1.81E-01		1.09E-07	
Pu-241	2.50E+01		1.50E-05	
Am-241	2.58E-03		1.55E-09	
Cm-242	1.44E-02		8.69E-09	
Cm-244	1.05E+02		6.33E-05	

Table C.2 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Site: ORR

TUMULUS
 Volume: 2.94E+05 (m3) Mass: 1.09E+09 (kg)
 Activity: 1.27E+05 (Ci) Release: 7.65E-02 (Ci)

Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	9.68E+02	5.81E-04
C-14	4.71E+01	2.83E-05
Cr-51	1.11E-03	6.67E-10
Mn-54	5.31E+03	3.18E-03
Fe-55	7.90E-03	4.74E-09
Fe-59	7.14E-05	4.28E-11
Co-58	4.90E+03	2.94E-03
Co-60	1.42E+04	8.52E-03
Ni-59	1.02E-04	6.12E-11
Ni-63	9.20E+01	5.52E-05
Sr-90	1.48E+04	8.90E-03
Y-90	1.48E+04	8.90E-03
Zr-95	8.67E-05	5.20E-11
Tc-99	9.57E+01	5.74E-05
Ru-106	7.99E+02	4.79E-04
Rh-106	7.99E+02	4.79E-04
Sb-125	2.29E+02	1.38E-04
Te-125m	5.60E+01	3.36E-05
Cs-134	1.19E+04	7.14E-03
Cs-137	2.31E+04	1.38E-02
Ba-137m	2.18E+04	1.31E-02
Ce-144	2.67E+03	1.60E-03
Pr-144	2.67E+03	1.60E-03
Pr-144m	3.21E+01	1.93E-05
Pm-147	6.52E+03	3.91E-03
Sm-151	6.38E+01	3.83E-05
Eu-152	9.74E-01	5.84E-07
Eu-154	1.67E+02	1.00E-04
Eu-155	1.32E+02	7.95E-05
Tl-208	3.64E-03	2.19E-09
Pb-212	9.64E-03	5.79E-09
Bi-212	9.64E-03	5.79E-09
Po-212	6.21E-03	3.73E-09
Po-216	9.64E-03	5.79E-09
Ra-224	9.64E-03	5.79E-09
Ra-228	5.76E-02	3.46E-08
Ac-228	5.76E-02	3.46E-08
Th-228	9.64E-03	5.79E-09
Th-231	5.55E-02	3.33E-08
Th-232	5.85E-01	3.51E-07
Th-234	7.11E+01	4.27E-05
Pa-234	7.29E-03	4.37E-09
Pa-234m	7.11E+01	4.27E-05
U-235	5.53E-02	3.32E-08
U-238	6.44E+02	3.87E-04
Pu-238	2.01E+02	1.21E-04
Pu-239	1.97E+00	1.18E-06
Pu-240	1.05E+00	6.29E-07
Pu-241	2.35E+02	1.41E-04

Table C.2 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Site: NTS		
SHALLOW_LAND_BURIAL	Volume: 1.83E+03 (m3)	Mass: 2.01E+06 (kg)
	Activity: 3.67E+00 (Ci)	Release: 2.20E-06 (Ci)
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	7.34E-04	4.41E-10
Co-60	3.49E-03	2.09E-09
Ni-63	6.94E-03	4.16E-09
Sr-90	6.17E-01	3.70E-07
Y-90	6.17E-01	3.70E-07
Tc-99	1.10E-04	6.61E-11
Ru-106	6.02E-02	3.61E-08
Rh-106	6.02E-02	3.61E-08
Sb-125	1.73E-02	1.04E-08
Te-125m	4.22E-03	2.53E-09
Cs-134	7.00E-02	4.20E-08
Cs-137	6.46E-01	3.88E-07
Ba-137m	6.12E-01	3.67E-07
Ce-144	2.02E-01	1.21E-07
Pr-144	2.02E-01	1.21E-07
Pr-144m	2.42E-03	1.45E-09
Pm-147	4.92E-01	2.95E-07
Sm-151	4.81E-03	2.89E-09
Eu-152	7.34E-05	4.41E-11
Eu-154	1.26E-02	7.56E-09
Eu-155	9.99E-03	5.99E-09
Pu-238	1.52E-02	9.10E-09
Pu-239	1.47E-04	8.81E-11
Pu-240	7.34E-05	4.41E-11
Pu-241	1.70E-02	1.02E-08
Am-241	2.20E-04	1.32E-10

Table C.2 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Site: Pantex

SHALLOW_LAND_BURIAL Volume: 2.93E+03 (m3) Mass: 8.00E+06 (kg)
 Activity: 1.94E+00 (Ci) Release: 1.16E-06 (Ci)

Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	9.07E-01	5.44E-07
Tl-208	1.76E-05	1.05E-11
Pb-212	4.65E-05	2.79E-11
Bi-212	4.65E-05	2.79E-11
Po-212	2.99E-05	1.80E-11
Po-216	4.65E-05	2.79E-11
Ra-224	4.65E-05	2.79E-11
Ra-228	2.78E-04	1.67E-10
Ac-228	2.78E-04	1.67E-10
Th-228	4.65E-05	2.79E-11
Th-231	2.67E-04	1.60E-10
Th-232	2.82E-03	1.69E-09
Th-234	3.43E-01	2.06E-07
Pa-234	3.51E-05	2.11E-11
Pa-234m	3.43E-01	2.06E-07
U-235	2.66E-04	1.60E-10
U-238	3.43E-01	2.06E-07

Table C.2 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Site: PORTS

TUMULUS	Total Volume (m3) 2.94E+05	Total Mass (kg) 1.16E+09
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	1.35E+05	8.12E-02
C-14	7.92E-01	4.75E-07
Cr-51	1.60E+05	9.65E-02
Mn-54	3.06E+05	1.83E-01
Fe-55	1.14E+06	6.86E-01
Fe-59	1.03E+04	6.20E-03
Co-58	4.11E+05	2.46E-01
Co-60	3.22E+06	1.93E+00
Ni-59	1.47E+04	8.85E-03
Ni-63	2.09E+06	1.25E+00
Sr-90	3.55E+02	2.13E-04
Y-90	3.55E+02	2.13E-04
Zr-95	1.25E+04	7.52E-03
Tc-99	1.62E+00	9.76E-07
Ru-106	2.37E+01	1.42E-05
Rh-106	2.37E+01	1.42E-05
Sb-125	6.81E+00	4.09E-06
Te-125m	1.66E+00	9.99E-07
Cs-134	2.12E+02	1.27E-04
Cs-137	4.98E+02	2.99E-04
Ba-137m	4.71E+02	2.82E-04
Ce-144	7.94E+01	4.76E-05
Pr-144	7.94E+01	4.76E-05
Pr-144m	9.55E-01	5.73E-07
Pm-147	1.94E+02	1.16E-04
Sm-151	1.89E+00	1.13E-06
Eu-152	2.89E-02	1.73E-08
Eu-154	4.96E+00	2.97E-06
Eu-155	3.93E+00	2.36E-06
Tl-208	8.49E-05	5.09E-11
Pb-212	2.24E-04	1.34E-10
Bi-212	2.24E-04	1.34E-10
Po-212	1.44E-04	8.69E-11
Po-216	2.24E-04	1.34E-10
Ra-224	2.24E-04	1.34E-10
Ra-228	1.34E-03	8.06E-10
Ac-228	1.34E-03	8.06E-10
Th-228	2.24E-04	1.34E-10
Th-231	1.29E-03	7.76E-10
Th-232	1.36E-02	8.18E-09
Th-234	1.65E+00	9.95E-07
Pa-234	1.69E-04	1.01E-10
Pa-234m	1.65E+00	9.95E-07
U-235	1.28E-03	7.73E-10
U-238	1.12E+01	6.77E-06
Pu-238	7.59E+00	4.55E-06
Pu-239	1.80E-01	1.08E-07
Pu-240	4.59E-01	2.75E-07
Pu-241	6.59E+01	3.95E-05
Am-241	8.93E-02	5.36E-08
Cm-242	3.44E-02	2.06E-08
Cm-244	1.23E-02	7.38E-09

Table C.2 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Site: PGDP

TUMULUS	Total Volume (m3)	5.38E+04	Total Mass (kg)	1.20E+08
Radionuclide	Disposal Activity (Ci)		Air Release (Ci)	
H-3	2.70E-01		1.62E-07	
C-14	1.44E-03		8.68E-10	
Mn-54	1.62E-01		9.77E-08	
Co-58	1.50E-01		9.02E-08	
Co-60	4.34E-01		2.60E-07	
Sr-90	2.04E-01		1.22E-07	
Y-90	2.04E-01		1.22E-07	
Tc-99	9.22E-02		5.53E-08	
Cs-134	3.37E-01		2.02E-07	
Cs-137	4.44E-01		2.66E-07	
Ba-137m	4.20E-01		2.52E-07	
Tl-208	3.76E-04		2.25E-10	
Pb-212	9.95E-04		5.97E-10	
Bi-212	9.95E-04		5.97E-10	
Po-212	6.41E-04		3.84E-10	
Po-216	9.95E-04		5.97E-10	
Ra-224	9.95E-04		5.97E-10	
Ra-228	5.95E-03		3.57E-09	
Ac-228	5.95E-03		3.57E-09	
Th-228	9.95E-04		5.97E-10	
Th-231	5.72E-03		3.43E-09	
Th-232	6.03E-02		3.62E-08	
Th-234	7.34E+00		4.40E-06	
Pa-234	7.52E-04		4.51E-10	
Pa-234m	7.34E+00		4.40E-06	
U-235	5.70E-03		3.42E-09	
U-238	7.36E+00		4.41E-06	
Np-237	6.70E-02		4.02E-08	
Pu-239	6.70E-02		4.02E-08	

Table C.2 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Site: RFETS

TUMULUS	Total Volume (m3)	4.50E+04	Total Mass (kg)	6.49E+07
Radionuclide	Disposal Activity (Ci)		Air Release (Ci)	
Tl-208	3.60E-04		2.16E-10	
Pb-212	9.55E-04		5.73E-10	
Bi-212	9.55E-04		5.73E-10	
Po-212	6.15E-04		3.69E-10	
Po-216	9.55E-04		5.73E-10	
Ra-224	9.55E-04		5.73E-10	
Ra-228	5.70E-03		3.42E-09	
Ac-228	5.70E-03		3.42E-09	
Th-228	9.55E-04		5.73E-10	
Th-231	5.49E-03		3.29E-09	
Th-232	5.79E-02		3.47E-08	
Th-234	7.04E+00		4.22E-06	
Pa-234	7.21E-04		4.32E-10	
Pa-234m	7.04E+00		4.22E-06	
U-235	5.47E-03		3.28E-09	
U-238	7.04E+00		4.22E-06	
Pu-238	5.56E+00		3.33E-06	
Pu-239	4.24E-01		2.54E-07	
Pu-240	1.48E+00		8.91E-07	
Pu-241	2.04E+02		1.22E-04	
Am-241	8.48E-03		5.09E-09	
Cm-242	1.18E-01		7.13E-08	
Cm-244	4.24E-02		2.54E-08	

Table C.2 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #1 Minimum Treat -- On-Site -- 12 Site Disposal

Site: SRS

BELOW_GROUND_VAULT	Total Volume (m3)	1.16E+06	Total Mass (kg)	2.36E+09
Radionuclide	Disposal Activity (Ci)		Air Release (Ci)	
H-3	6.78E+05		4.07E-01	
C-14	1.08E+01		6.52E-06	
Cr-51	1.95E+04		1.17E-02	
Mn-54	3.84E+04		2.30E-02	
Fe-55	1.38E+05		8.33E-02	
Fe-59	1.25E+03		7.53E-04	
Co-58	5.10E+04		3.06E-02	
Co-60	3.94E+05		2.36E-01	
Ni-59	1.79E+03		1.07E-03	
Ni-63	2.55E+05		1.53E-01	
Sr-90	4.23E+04		2.53E-02	
Y-90	4.23E+04		2.53E-02	
Zr-95	1.52E+03		9.14E-04	
Tc-99	1.27E+03		7.65E-04	
Ru-106	3.34E+03		2.00E-03	
Rh-106	3.34E+03		2.00E-03	
Sb-125	1.29E+03		7.77E-04	
Te-125m	2.33E+02		1.40E-04	
Cs-134	6.40E+03		3.84E-03	
Cs-137	4.01E+04		2.41E-02	
Ba-137m	3.80E+04		2.28E-02	
Ce-144	1.11E+04		6.68E-03	
Pr-144	1.11E+04		6.68E-03	
Pr-144m	1.33E+02		8.03E-05	
Pm-147	3.59E+04		2.15E-02	
Sm-151	2.65E+02		1.59E-04	
Eu-152	4.05E+00		2.43E-06	
Eu-154	6.96E+02		4.17E-04	
Eu-155	5.52E+02		3.31E-04	
Tl-208	8.54E-03		5.12E-09	
Pb-212	2.26E-02		1.35E-08	
Bi-212	2.26E-02		1.35E-08	
Po-212	1.45E-02		8.74E-09	
Po-216	2.26E-02		1.35E-08	
Ra-224	2.26E-02		1.35E-08	
Ra-228	1.35E-01		8.10E-08	
Ac-228	1.35E-01		8.10E-08	
Th-228	2.26E-02		1.35E-08	
Th-231	1.30E-01		7.80E-08	
Th-232	1.37E+00		8.22E-07	
Th-234	1.66E+02		1.00E-04	
Pa-234	1.70E-02		1.02E-08	
Pa-234m	1.66E+02		1.00E-04	
U-235	1.29E-01		7.77E-08	
U-238	2.99E+02		1.79E-04	
Pu-238	8.45E+02		5.07E-04	
Pu-239	8.64E+00		5.18E-06	
Pu-240	5.89E+00		3.53E-06	
Pu-241	1.19E+03		7.14E-04	
Am-241	1.21E+01		7.31E-06	
Cm-242	1.46E-01		8.80E-08	
Cm-244	5.24E-02		3.14E-08	

Table C.3 Disposal Volume and Air Release by Site

LLW ALTERNATIVE: Regionalized #3 Minimum Treat -- On-Site -- 6 Site Disposal

Site: Hanford

SHALLOW_LAND_BURIAL	Total Volume (m3)	9.44E+04	Total Mass (kg)	2.82E+08
Radionuclide	Disposal Activity (Ci)		Air Release (Ci)	
H-3	2.22E+02		1.33E-04	
Cr-51	8.66E+02		5.19E-04	
Mn-54	1.64E+03		9.89E-04	
Fe-55	6.15E+03		3.69E-03	
Fe-59	5.56E+01		3.33E-05	
Co-58	2.21E+03		1.32E-03	
Co-60	1.74E+04		1.04E-02	
Ni-59	7.94E+01		4.76E-05	
Ni-63	1.15E+04		6.90E-03	
Sr-90	1.93E+04		1.15E-02	
Y-90	1.93E+04		1.15E-02	
Zr-95	6.75E+01		4.05E-05	
Tc-99	3.44E+00		2.06E-06	
Ru-106	1.88E+03		1.13E-03	
Rh-106	1.88E+03		1.13E-03	
Sb-125	5.41E+02		3.24E-04	
Te-125m	1.32E+02		7.93E-05	
Cs-134	2.19E+03		1.31E-03	
Cs-137	2.02E+04		1.21E-02	
Ba-137m	1.91E+04		1.14E-02	
Ce-144	6.31E+03		3.78E-03	
Pr-144	6.31E+03		3.78E-03	
Pr-144m	7.58E+01		4.55E-05	
Pm-147	1.54E+04		9.24E-03	
Sm-151	1.50E+02		9.03E-05	
Eu-152	2.29E+00		1.37E-06	
Eu-154	3.94E+02		2.36E-04	
Eu-155	3.12E+02		1.87E-04	
Tl-208	2.70E-03		1.62E-09	
Pb-212	7.16E-03		4.29E-09	
Bi-212	7.16E-03		4.29E-09	
Po-212	4.61E-03		2.77E-09	
Po-216	7.16E-03		4.29E-09	
Ra-224	7.16E-03		4.29E-09	
Ra-228	4.28E-02		2.57E-08	
Ac-228	4.28E-02		2.57E-08	
Th-228	7.16E-03		4.29E-09	
Th-231	4.12E-02		2.47E-08	
Th-232	4.34E-01		2.60E-07	
Th-234	5.28E+01		3.17E-05	
Pa-234	5.41E-03		3.24E-09	
Pa-234m	5.28E+01		3.17E-05	
U-235	4.10E-02		2.46E-08	
U-238	5.28E+01		3.17E-05	
Pu-238	4.74E+02		2.84E-04	
Pu-239	4.59E+00		2.75E-06	
Pu-240	2.29E+00		1.37E-06	
Pu-241	5.31E+02		3.18E-04	
Am-241	6.89E+00		4.13E-06	

Table C.3 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #3 Minimum Treat -- On-Site -- 6 Site Disposal

Site: Hanford

BELOW_GROUND_VAULT	Total Volume (m3)	4.24E+05	Total Mass (kg)	7.63E+08
Radionuclide	Disposal Activity (Ci)		Air Release (Ci)	
Sr-90	3.22E+06		1.93E+00	
Y-90	3.22E+06		1.93E+00	
Ru-106	5.06E+06		3.03E+00	
Rh-106	5.06E+06		3.03E+00	
Cs-137	1.09E+08		6.58E+01	
Ba-137m	1.03E+08		6.22E+01	

Site: INEL

SHALLOW_LAND_BURIAL	Total Volume (m3)	9.41E+04	Total Mass (kg)	2.95E+08
Radionuclide	Disposal Activity (Ci)		Air Release (Ci)	
H-3	3.07E+01		1.84E-05	
Cr-51	6.00E+04		3.60E-02	
Mn-54	1.14E+05		6.85E-02	
Fe-55	4.26E+05		2.56E-01	
Fe-59	3.85E+03		2.31E-03	
Co-58	1.53E+05		9.20E-02	
Co-60	1.20E+06		7.21E-01	
Ni-59	5.50E+03		3.30E-03	
Ni-63	7.83E+05		4.69E-01	
Sr-90	5.01E+02		3.01E-04	
Y-90	5.01E+02		3.01E-04	
Zr-95	4.68E+03		2.80E-03	
Tc-99	8.96E-02		5.37E-08	
Ru-106	4.90E+01		2.94E-05	
Rh-106	4.90E+01		2.94E-05	
Sb-125	1.40E+01		8.44E-06	
Te-125m	3.43E+00		2.06E-06	
Cs-134	5.69E+01		3.41E-05	
Cs-137	5.27E+02		3.16E-04	
Ba-137m	4.99E+02		2.99E-04	
Ce-144	1.64E+02		9.84E-05	
Pr-144	1.64E+02		9.84E-05	
Pr-144m	1.97E+00		1.18E-06	
Pm-147	4.00E+02		2.40E-04	
Sm-151	3.91E+00		2.34E-06	
Eu-152	5.97E-02		3.58E-08	
Eu-154	1.02E+01		6.14E-06	
Eu-155	8.12E+00		4.87E-06	
Pu-238	1.23E+01		7.40E-06	
Pu-239	1.19E-01		7.17E-08	
Pu-240	5.97E-02		3.58E-08	
Pu-241	1.38E+01		8.28E-06	
Am-241	1.79E-01		1.07E-07	
Cm-242	4.88E-07		2.92E-13	
Cm-244	1.74E-07		1.04E-13	

Table C.3 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #3 Minimum Treat -- On-Site -- 6 Site Disposal

Site: LANL

SHALLOW_LAND_BURIAL	Total Volume (m3)	2.14E+05	Total Mass (kg)	5.67E+08
Radionuclide	Disposal Activity (Ci)		Air Release (Ci)	
H-3	3.84E+06		2.30E+00	
C-14	3.03E+00		1.82E-06	
Cr-51	3.02E+02		1.81E-04	
Mn-54	9.17E+02		5.50E-04	
Fe-55	2.14E+03		1.28E-03	
Fe-59	1.94E+01		1.16E-05	
Co-58	1.08E+03		6.52E-04	
Co-60	1.06E+04		6.37E-03	
Ni-59	2.77E+01		1.66E-05	
Ni-63	1.12E+04		6.73E-03	
Sr-90	6.48E+05		3.88E-01	
Y-90	6.48E+05		3.88E-01	
Zr-95	2.35E+01		1.41E-05	
Tc-99	1.21E+02		7.30E-05	
Ru-106	6.32E+04		3.79E-02	
Rh-106	6.32E+04		3.79E-02	
Sb-125	1.81E+04		1.08E-02	
Te-125m	4.43E+03		2.65E-03	
Cs-134	7.42E+04		4.45E-02	
Cs-137	6.79E+05		4.07E-01	
Ba-137m	6.43E+05		3.85E-01	
Ce-144	2.11E+05		1.26E-01	
Pr-144	2.11E+05		1.26E-01	
Pr-144m	2.54E+03		1.52E-03	
Pm-147	5.16E+05		3.09E-01	
Sm-151	5.04E+03		3.02E-03	
Eu-152	7.70E+01		4.62E-05	
Eu-154	1.32E+04		7.93E-03	
Eu-155	1.04E+04		6.29E-03	
Tl-208	1.69E-01		1.01E-07	
Pb-212	4.48E-01		2.69E-07	
Bi-212	4.48E-01		2.69E-07	
Po-212	2.89E-01		1.73E-07	
Po-216	4.48E-01		2.69E-07	
Ra-224	4.48E-01		2.69E-07	
Ra-228	2.68E+00		1.60E-06	
Ac-228	2.68E+00		1.60E-06	
Th-228	4.48E-01		2.69E-07	
Th-231	2.58E+00		1.55E-06	
Th-232	2.72E+01		1.63E-05	
Th-234	3.31E+03		1.98E-03	
Pa-234	3.39E-01		2.03E-07	
Pa-234m	3.31E+03		1.98E-03	
U-235	2.57E+00		1.54E-06	
U-238	3.34E+03		2.00E-03	
Pu-238	1.59E+04		9.58E-03	
Pu-239	1.58E+02		9.49E-05	
Pu-240	9.10E+01		5.46E-05	
Pu-241	1.97E+04		1.18E-02	
Am-241	2.31E+02		1.38E-04	
Cm-242	1.11E+00		6.71E-07	
Cm-244	3.99E-01		2.39E-07	

Table C.3 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #3 Minimum Treat -- On-Site -- 6 Site Disposal

Site: NTS

SHALLOW_LAND_BURIAL Volume: 6.84E+03 (m3) Mass: 2.57E+07 (kg)
 Activity: 8.99E+04 (Ci) Release: 5.39E-02 (Ci)

Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	8.87E+04	5.32E-02
C-14	3.57E-01	2.14E-07
Cr-51	1.53E+00	9.20E-07
Mn-54	4.32E+01	2.59E-05
Fe-55	1.09E+01	6.54E-06
Fe-59	9.85E-02	5.91E-08
Co-58	4.11E+01	2.46E-05
Co-60	1.38E+02	8.30E-05
Ni-59	1.41E-01	8.44E-08
Ni-63	2.06E+01	1.23E-05
Sr-90	1.01E+02	6.04E-05
Y-90	1.01E+02	6.04E-05
Zr-95	1.20E-01	7.17E-08
Tc-99	7.24E-01	4.34E-07
Ru-106	4.89E+00	2.94E-06
Rh-106	4.89E+00	2.94E-06
Sb-125	1.41E+00	8.43E-07
Te-125m	3.43E-01	2.06E-07
Cs-134	8.89E+01	5.34E-05
Cs-137	1.62E+02	9.74E-05
Ba-137m	1.54E+02	9.22E-05
Ce-144	1.64E+01	9.83E-06
Pr-144	1.64E+01	9.83E-06
Pr-144m	1.97E-01	1.18E-07
Pm-147	4.00E+01	2.40E-05
Sm-151	3.91E-01	2.34E-07
Eu-152	5.97E-03	3.58E-09
Eu-154	1.02E+00	6.14E-07
Eu-155	8.11E-01	4.87E-07
Tl-208	3.91E-10	2.35E-16
Pb-212	1.04E-09	6.22E-16
Bi-212	1.04E-09	6.22E-16
Po-212	6.68E-10	4.01E-16
Po-216	1.04E-09	6.22E-16
Ra-224	1.04E-09	6.22E-16
Ra-228	6.20E-09	3.72E-15
Ac-228	6.20E-09	3.72E-15
Th-228	1.04E-09	6.22E-16
Th-231	5.96E-09	3.58E-15
Th-232	6.29E-08	3.77E-14
Th-234	7.65E-06	4.59E-12
Pa-234	7.83E-10	4.70E-16
Pa-234m	7.65E-06	4.59E-12
U-235	5.94E-09	3.57E-15
U-238	4.35E+00	2.61E-06
Pu-238	8.95E+00	5.37E-06
Pu-239	6.01E-01	3.61E-07
Pu-240	2.07E+00	1.24E-06
Pu-241	2.85E+02	1.71E-04
Am-241	2.97E-02	1.78E-08
Cm-242	1.65E-01	9.90E-08
Cm-244	5.89E-02	3.54E-08

Table C.3 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #3 Minimum Treat -- On-Site -- 6 Site Disposal

Site: ORR

TUMULUS		
	Volume: 6.40E+05 (m3)	Mass: 1.73E+09 (kg)
	Activity: 3.50E+07 (Ci)	Release: 1.76E+01 (Ci)
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	3.50E+07	1.71E+01
C-14	4.90E+01	2.94E-05
Cr-51	1.54E+04	9.26E-03
Mn-54	3.49E+04	2.09E-02
Fe-55	1.10E+05	6.58E-02
Fe-59	9.91E+02	5.95E-04
Co-58	4.45E+04	2.67E-02
Co-60	3.24E+05	1.94E-01
Ni-59	1.42E+03	8.49E-04
Ni-63	2.01E+05	1.21E-01
Sr-90	1.81E+04	1.08E-02
Y-90	1.81E+04	1.08E-02
Zr-95	1.20E+03	7.22E-04
Tc-99	9.99E+01	6.00E-05
Ru-106	1.09E+03	6.52E-04
Rh-106	1.09E+03	6.52E-04
Sb-125	3.12E+02	1.87E-04
Te-125m	7.62E+01	4.57E-05
Cs-134	1.27E+04	7.60E-03
Cs-137	2.67E+04	1.60E-02
Ba-137m	2.53E+04	1.52E-02
Ce-144	3.64E+03	2.18E-03
Pr-144	3.64E+03	2.18E-03
Pr-144m	4.37E+01	2.62E-05
Pm-147	8.88E+03	5.33E-03
Sm-151	8.68E+01	5.21E-05
Eu-152	1.33E+00	7.95E-07
Eu-154	2.27E+02	1.36E-04
Eu-155	1.80E+02	1.08E-04
Tl-208	3.71E-03	2.23E-09
Pb-212	9.82E-03	5.89E-09
Bi-212	9.82E-03	5.89E-09
Po-212	6.33E-03	3.80E-09
Po-216	9.82E-03	5.89E-09
Ra-224	9.82E-03	5.89E-09
Ra-228	5.87E-02	3.52E-08
Ac-228	5.87E-02	3.52E-08
Th-228	9.82E-03	5.89E-09
Th-231	5.65E-02	3.39E-08
Th-232	5.96E-01	3.57E-07
Th-234	7.24E+01	4.35E-05
Pa-234	7.42E-03	4.45E-09
Pa-234m	7.24E+01	4.35E-05
U-235	5.63E-02	3.38E-08
U-238	6.68E+02	4.01E-04
Pu-238	2.76E+02	1.65E-04
Pu-239	2.79E+00	1.68E-06
Pu-240	1.83E+00	1.10E-06
Pu-241	3.75E+02	2.25E-04

Table C.3 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #3 Minimum Treat -- On-Site -- 6 Site Disposal

Site: ORR

TUMULUS	Volume: 6.42E+05 (m3)	Mass: 1.73E+09 (kg)
	Activity: 3.40E+07 (Ci)	Release: 1.76E+01 (Ci)

Radionuclide	Disposal Activity (Ci)	Air Release (Ci)

Am-241	3.98E+00	2.39E-06
Cm-242	4.00E-02	2.40E-08
Cm-244	1.43E-02	8.58E-09

Table C.3 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #3 Minimum Treat -- On-Site -- 6 Site Disposal

Site: SRS

BELOW_GROUND_VAULT	Total Volume (m3)	1.16E+06	Total Mass (kg)	2.36E+09
Radionuclide	Disposal Activity (Ci)		Air Release (Ci)	
H-3	6.78E+05		4.07E-01	
C-14	1.08E+01		6.52E-06	
Cr-51	1.95E+04		1.17E-02	
Mn-54	3.84E+04		2.30E-02	
Fe-55	1.38E+05		8.33E-02	
Fe-59	1.25E+03		7.53E-04	
Co-58	5.10E+04		3.06E-02	
Co-60	3.94E+05		2.36E-01	
Ni-59	1.79E+03		1.07E-03	
Ni-63	2.55E+05		1.53E-01	
Sr-90	4.23E+04		2.53E-02	
Y-90	4.23E+04		2.53E-02	
Zr-95	1.52E+03		9.14E-04	
Tc-99	1.27E+03		7.65E-04	
Ru-106	3.34E+03		2.00E-03	
Rh-106	3.34E+03		2.00E-03	
Sb-125	1.29E+03		7.77E-04	
Te-125m	2.33E+02		1.40E-04	
Cs-134	6.40E+03		3.84E-03	
Cs-137	4.01E+04		2.41E-02	
Ba-137m	3.80E+04		2.28E-02	
Ce-144	1.11E+04		6.68E-03	
Pr-144	1.11E+04		6.68E-03	
Pr-144m	1.33E+02		8.03E-05	
Pm-147	3.59E+04		2.15E-02	
Sm-151	2.65E+02		1.59E-04	
Eu-152	4.05E+00		2.43E-06	
Eu-154	6.96E+02		4.17E-04	
Eu-155	5.52E+02		3.31E-04	
Tl-208	8.54E-03		5.12E-09	
Pb-212	2.26E-02		1.35E-08	
Bi-212	2.26E-02		1.35E-08	
Po-212	1.45E-02		8.74E-09	
Po-216	2.26E-02		1.35E-08	
Ra-224	2.26E-02		1.35E-08	
Ra-228	1.35E-01		8.10E-08	
Ac-228	1.35E-01		8.10E-08	
Th-228	2.26E-02		1.35E-08	
Th-231	1.30E-01		7.80E-08	
Th-232	1.37E+00		8.22E-07	
Th-234	1.66E+02		1.00E-04	
Pa-234	1.70E-02		1.02E-08	
Pa-234m	1.66E+02		1.00E-04	
U-235	1.29E-01		7.77E-08	
U-238	2.99E+02		1.79E-04	
Pu-238	8.45E+02		5.07E-04	
Pu-239	8.64E+00		5.18E-06	
Pu-240	5.89E+00		3.53E-06	
Pu-241	1.19E+03		7.14E-04	
Am-241	1.21E+01		7.31E-06	
Cm-242	1.46E-01		8.80E-08	
Cm-244	5.24E-02		3.14E-08	

Table C.4 Total Disposal Volume and Air Release by Site

LLW ALTERNATIVE: Regionalized #6 Minimum Treat -- On-Site -- 2 Site (SRS,NTS)

Site: Hanford

BELOW_GROUND_VAULT	Total Volume (m3)	Total Mass (kg)
	4.24E+05	7.63E+08
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
Sr-90	3.22E+06	1.93E+00
Y-90	3.22E+06	1.93E+00
Ru-106	5.06E+06	3.03E+00
Rh-106	5.06E+06	3.03E+00
Cs-137	1.09E+08	6.58E+01
Ba-137m	1.03E+08	6.22E+01

Table C.4 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #6 Minimum Treat -- On-Site -- 2 Site (SRS, NTS)

Site: NTS

SHALLOW_LAND_BURIAL Volume: 2.67E+05 (m3) Mass: 6.23E+08 (kg)
 Activity: 8.01E+06 (Ci) Release: 4.80E+00 (Ci)

Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	8.88E+04	5.33E-02
C-14	1.85E+00	1.11E-06
Cr-51	1.60E+05	9.62E-02
Mn-54	3.05E+05	1.83E-01
Fe-55	1.14E+06	6.83E-01
Fe-59	1.03E+04	6.18E-03
Co-58	4.10E+05	2.46E-01
Co-60	3.21E+06	1.93E+00
Ni-59	1.47E+04	8.82E-03
Ni-63	2.09E+06	1.25E+00
Sr-90	9.07E+04	5.44E-02
Y-90	9.07E+04	5.44E-02
Zr-95	1.25E+04	7.50E-03
Tc-99	1.99E+01	1.19E-05
Ru-106	8.83E+03	5.30E-03
Rh-106	8.83E+03	5.30E-03
Sb-125	2.54E+03	1.52E-03
Te-125m	6.19E+02	3.72E-04
Cs-134	1.07E+04	6.42E-03
Cs-137	9.54E+04	5.72E-02
Ba-137m	9.03E+04	5.42E-02
Ce-144	2.96E+04	1.77E-02
Pr-144	2.96E+04	1.77E-02
Pr-144m	3.55E+02	2.13E-04
Pm-147	7.22E+04	4.33E-02
Sm-151	7.05E+02	4.23E-04
Eu-152	1.08E+01	6.46E-06
Eu-154	1.85E+03	1.11E-03
Eu-155	1.46E+03	8.79E-04
Tl-208	3.69E-01	2.22E-07
Pb-212	9.78E-01	5.87E-07
Bi-212	9.78E-01	5.87E-07
Po-212	6.30E-01	3.78E-07
Po-216	9.78E-01	5.87E-07
Ra-224	9.78E-01	5.87E-07
Ra-228	5.85E+00	3.51E-06
Ac-228	5.85E+00	3.51E-06
Th-228	9.78E-01	5.87E-07
Th-231	5.63E+00	3.38E-06
Th-232	5.93E+01	3.56E-05
Th-234	7.21E+03	4.33E-03
Pa-234	7.39E-01	4.43E-07
Pa-234m	7.21E+03	4.33E-03
U-235	5.61E+00	3.36E-06
U-238	7.24E+03	4.34E-03
Pu-238	2.23E+03	1.34E-03
Pu-239	2.22E+01	1.33E-05
Pu-240	1.32E+01	7.89E-06
Pu-241	2.82E+03	1.69E-03
Am-241	3.23E+01	1.94E-05
Cm-242	1.90E-01	1.14E-07
Cm-244	6.80E-02	4.08E-08

Table C.4 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Regionalized #6 Minimum Treat -- On-Site -- 2 Site (SRS, NTS)

Site: SRS

BELOW_GROUND_VAULT	Total Volume (m3)	1.71E+06	Total Mass (kg)	4.97E+09
Radionuclide	Disposal Activity (Ci)		Air Release (Ci)	
H-3	8.13E+05		4.88E-01	
C-14	1.17E+01		7.03E-06	
Cr-51	1.80E+05		1.08E-01	
Mn-54	3.45E+05		2.07E-01	
Fe-55	1.28E+06		7.69E-01	
Fe-59	1.15E+04		6.95E-03	
Co-58	4.62E+05		2.77E-01	
Co-60	3.62E+06		2.17E+00	
Ni-59	1.65E+04		9.93E-03	
Ni-63	2.35E+06		1.41E+00	
Sr-90	5.18E+04		3.10E-02	
Y-90	5.18E+04		3.10E-02	
Zr-95	1.40E+04		8.44E-03	
Tc-99	1.27E+03		7.67E-04	
Ru-106	4.25E+03		2.55E-03	
Rh-106	4.25E+03		2.55E-03	
Sb-125	1.55E+03		9.35E-04	
Te-125m	2.97E+02		1.78E-04	
Cs-134	7.66E+03		4.59E-03	
Cs-137	5.02E+04		3.01E-02	
Ba-137m	4.75E+04		2.85E-02	
Ce-144	1.42E+04		8.52E-03	
Pr-144	1.42E+04		8.52E-03	
Pr-144m	1.70E+02		1.02E-04	
Pm-147	4.33E+04		2.60E-02	
Sm-151	3.39E+02		2.03E-04	
Eu-152	5.17E+00		3.10E-06	
Eu-154	8.87E+02		5.32E-04	
Eu-155	7.03E+02		4.22E-04	
Tl-208	1.07E-02		6.46E-09	
Pb-212	2.85E-02		1.71E-08	
Bi-212	2.85E-02		1.71E-08	
Po-212	1.83E-02		1.10E-08	
Po-216	2.85E-02		1.71E-08	
Ra-224	2.85E-02		1.71E-08	
Ra-228	1.70E-01		1.02E-07	
Ac-228	1.70E-01		1.02E-07	
Th-228	2.85E-02		1.71E-08	
Th-231	1.64E-01		9.84E-08	
Th-232	1.72E+00		1.03E-06	
Th-234	2.10E+02		1.26E-04	
Pa-234	2.15E-02		1.29E-08	
Pa-234m	2.10E+02		1.26E-04	
U-235	1.63E-01		9.80E-08	
U-238	3.52E+02		2.11E-04	
Np-237	6.70E-02		4.02E-08	
Pu-238	1.07E+03		6.46E-04	
Pu-239	1.10E+01		6.64E-06	
Pu-240	7.44E+00		4.46E-06	
Pu-241	1.50E+03		9.05E-04	
Am-241	1.55E+01		9.32E-06	
Cm-242	1.81E-01		1.09E-07	
Cm-244	6.49E-02		3.89E-08	

Table C.5 Total Disposal Volume and Air Release by Site

LLW ALTERNATIVE: Centralized #1 Minimum Treat -- On-Site -- 1 Site Disposal

Site: Hanford

BELOW_GROUND_VAULT	Total Volume (m3)	4.24E+05	Total Mass (kg)	7.63E+08
Radionuclide	Disposal Activity (Ci)		Air Release (Ci)	
Sr-90	3.22E+06		1.93E+00	
Y-90	3.22E+06		1.93E+00	
Ru-106	5.06E+06		3.03E+00	
Rh-106	5.06E+06		3.03E+00	
Cs-137	1.09E+08		6.58E+01	
Ba-137m	1.03E+08		6.22E+01	

Table C.5 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Centralized #1 Minimum Treat -- On-Site -- 1 Site Disposal

Site: Hanford

SHALLOW_LAND_BURIAL	Total Volume (m3)	1.58E+06	Total Mass (kg)	5.07E+09
Radionuclide	Disposal Activity (Ci)		Air Release (Ci)	
H-3	5.27E+06		3.16E+00	
C-14	2.60E+01		1.56E-05	
Cr-51	2.41E+05		1.45E-01	
Mn-54	4.63E+05		2.77E-01	
Fe-55	1.71E+06		1.03E+00	
Fe-59	1.55E+04		9.31E-03	
Co-58	6.20E+05		3.72E-01	
Co-60	4.85E+06		2.91E+00	
Ni-59	2.21E+04		1.33E-02	
Ni-63	3.16E+06		1.89E+00	
Sr-90	7.14E+05		4.28E-01	
Y-90	7.14E+05		4.28E-01	
Zr-95	1.88E+04		1.13E-02	
Tc-99	1.79E+02		1.07E-04	
Ru-106	6.94E+04		4.16E-02	
Rh-106	6.94E+04		4.16E-02	
Sb-125	1.99E+04		1.19E-02	
Te-125m	4.86E+03		2.91E-03	
Cs-134	8.67E+04		5.20E-02	
Cs-137	7.52E+05		4.51E-01	
Ba-137m	7.12E+05		4.27E-01	
Ce-144	2.32E+05		1.39E-01	
Pr-144	2.32E+05		1.39E-01	
Pr-144m	2.79E+03		1.67E-03	
Pm-147	5.67E+05		3.40E-01	
Sm-151	5.54E+03		3.32E-03	
Eu-152	8.46E+01		5.07E-05	
Eu-154	1.45E+04		8.70E-03	
Eu-155	1.15E+04		6.90E-03	
Tl-208	1.83E-01		1.10E-07	
Pb-212	4.86E-01		2.91E-07	
Bi-212	4.86E-01		2.91E-07	
Po-212	3.13E-01		1.88E-07	
Po-216	4.86E-01		2.91E-07	
Ra-224	4.86E-01		2.91E-07	
Ra-228	2.90E+00		1.74E-06	
Ac-228	2.90E+00		1.74E-06	
Th-228	4.86E-01		2.91E-07	
Th-231	2.79E+00		1.67E-06	
Th-232	2.94E+01		1.76E-05	
Th-234	3.58E+03		2.15E-03	
Pa-234	3.67E-01		2.20E-07	
Pa-234m	3.58E+03		2.15E-03	
U-235	2.78E+00		1.67E-06	
U-238	3.90E+03		2.34E-03	
Np-237	6.70E-02		4.02E-08	
Pu-238	1.75E+04		1.05E-02	
Pu-239	1.74E+02		1.04E-04	
Pu-240	1.01E+02		6.06E-05	
Pu-241	2.18E+04		1.30E-02	
Am-241	2.53E+02		1.52E-04	
Cm-242	1.31E+00		7.89E-07	
Cm-244	1.06E+02		6.36E-05	

Table C.5 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Centralized #1 Minimum Treat -- On-Site -- 1 Site Disposal

Site: SRS

BELOW_GROUND_VAULT (Saltstone Waste Only)	Total Volume (m3)	Total Mass (kg)
	5.92E+05	1.06E+09
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	2.21E+03	1.32E-03
Sr-90	6.66E+03	4.00E-03
Y-90	6.66E+03	4.00E-03
Tc-99	1.24E+03	7.48E-04
Ru-106	1.41E+01	8.51E-06
Rh-106	1.41E+01	8.51E-06
Sb-125	3.40E+02	2.04E-04
Cs-137	1.10E+03	6.63E-04
Ba-137m	1.02E+03	6.12E-04
Pm-147	8.70E+03	5.22E-03

APPENDIX D:
VOLUME REDUCTION CASES —
RADIONUCLIDE THROUGHPUT AND AIR RELEASE
BY SITE AND TECHNOLOGY

APPENDIX D:
VOLUME REDUCTION CASES —
RADIONUCLIDE THROUGHPUT AND AIR RELEASE
BY SITE AND TECHNOLOGY

This appendix identifies the radiological characteristics of Waste Management low-level waste sent to the different treatment technologies and the resulting air emissions for each site. The data tables that follow were used as input to the risk assessment in the Waste Management Programmatic Environmental Impact Statement.

The site of waste treatment is identified under the heading "Treatment Site." Each treatment technology employed at that site is listed and followed by the volume and mass of waste treated using that technology. The input activity and resulting air emissions are also noted. Each number is reported on an annual basis (i.e., annual volume and mass and annual air emissions). Numbers preceding the technology names are treatment codes used to track the treatment module through the computational process. Volumes, activities, and air emissions are identified for Cases 9, 18, and 21. Volumes, activities, and air emissions for Regionalized Alternatives 2, 4, and 5 and Centralized Alternative 5.

Table D.1 Radionuclide Thruput and Air Release by Site and Technology

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: FEMP

Waste Handling: CH non-alpha

1 INCINERATION

Thruput Volume
m3/year

7.67E+02

Thruput Mass

kg/year

1.20E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.34E+04	1.31E+04
Tl-208	2.83E-08	8.03E-13
Pb-212	7.50E-08	2.13E-12
Bi-212	7.50E-08	2.13E-12
Po-212	4.83E-08	1.37E-12
Po-216	7.50E-08	2.13E-12
Ra-224	7.50E-08	2.13E-12
Ra-228	4.48E-07	1.27E-11
Ac-228	4.48E-07	1.27E-11
Th-228	7.50E-08	2.13E-12
Th-231	4.31E-07	1.22E-11
Th-232	4.55E-06	1.29E-10
Th-234	5.53E-04	1.57E-08
Pa-234	5.67E-08	1.61E-12
Pa-234m	5.53E-04	1.57E-08
U-235	4.30E-07	1.22E-11
U-238	5.53E-04	1.57E-08
Pu-238	4.36E-05	1.24E-09
Pu-239	3.33E-06	9.46E-11
Pu-240	1.16E-05	3.31E-10
Pu-241	1.60E-03	4.56E-08
Am-241	6.67E-08	1.89E-12
Cm-242	9.33E-07	2.65E-11
Cm-244	3.33E-07	9.46E-12

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: FEMP

Waste Handling: CH non-alpha

2 SOLIDIFICATION

Thruput Volume	Thruput Mass
m3/year 3.49E+01	kg/year 4.40E+04

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.27E+02	3.41E+00
Tl-208	2.83E-08	1.92E-21
Pb-212	7.50E-08	5.09E-21
Bi-212	7.50E-08	5.09E-21
Po-212	4.83E-08	3.28E-21
Po-216	7.50E-08	5.09E-21
Ra-224	7.50E-08	5.09E-21
Ra-228	4.48E-07	3.04E-20
Ac-228	4.48E-07	3.04E-20
Th-228	7.50E-08	5.09E-21
Th-231	4.31E-07	2.93E-20
Th-232	4.54E-06	3.09E-19
Th-234	5.53E-04	3.76E-17
Pa-234	5.67E-08	3.84E-21
Pa-234m	5.53E-04	3.76E-17
U-235	4.30E-07	2.92E-20
U-238	5.53E-04	3.76E-17
Pu-238	4.36E-05	2.96E-18
Pu-239	3.33E-06	2.26E-19
Pu-240	1.16E-05	7.93E-19
Pu-241	1.60E-03	1.09E-16
Am-241	6.67E-08	4.52E-21
Cm-242	9.33E-07	6.34E-20
Cm-244	3.33E-07	2.26E-20

6 SIZE_REDUCTION

Thruput Volume	Thruput Mass
m3/year 1.01E+02	kg/year 8.14E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Cr-51	3.35E-02	1.44E-09
Mn-54	6.39E-02	2.74E-09
Fe-55	2.38E-01	1.02E-08
Fe-59	2.15E-03	9.27E-11
Co-58	8.57E-02	3.68E-09
Co-60	6.72E-01	2.89E-08
Ni-59	3.08E-03	1.32E-10
Ni-63	4.37E-01	1.88E-08
Zr-95	2.61E-03	1.12E-10

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: FEMP

Waste Handling: CH non-alpha

95 INSPECT_RECEIVE	Thruput Volume m3/year	8.69E+02	Thruput Mass kg/year	9.34E+05
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	1.34E+04		.	
Cr-51	3.35E-02		.	
Mn-54	6.39E-02		.	
Fe-55	2.38E-01		.	
Fe-59	2.15E-03		.	
Co-58	8.57E-02		.	
Co-60	6.72E-01		.	
Ni-59	3.08E-03		.	
Ni-63	4.37E-01		.	
Zr-95	2.61E-03		.	
Tl-208	2.83E-08		.	
Pb-212	7.50E-08		.	
Bi-212	7.50E-08		.	
Po-212	4.83E-08		.	
Po-216	7.50E-08		.	
Ra-224	7.50E-08		.	
Ra-228	4.48E-07		.	
Ac-228	4.48E-07		.	
Th-228	7.50E-08		.	
Th-231	4.31E-07		.	
Th-232	4.55E-06		.	
Th-234	5.53E-04		.	
Pa-234	5.67E-08		.	
Pa-234m	5.53E-04		.	
U-235	4.30E-07		.	
U-238	5.53E-04		.	
Pu-238	4.36E-05		.	
Pu-239	3.33E-06		.	
Pu-240	1.16E-05		.	
Pu-241	1.60E-03		.	
Am-241	6.67E-08		.	
Cm-242	9.33E-07		.	
Cm-244	3.33E-07		.	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat, -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: FEMP

Waste Handling: CH non-alpha

96 CERTIFY_SHIP	Thruput Volume m3/year	6.23E+01	Thruput Mass kg/year	9.44E+05
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	2.24E+02		.	
Cr-51	3.35E-02		.	
Mn-54	6.39E-02		.	
Fe-55	2.38E-01		.	
Fe-59	2.15E-03		.	
Co-58	8.57E-02		.	
Co-60	6.72E-01		.	
Ni-59	3.08E-03		.	
Ni-63	4.37E-01		.	
Zr-95	2.61E-03		.	
Tl-208	2.83E-08		.	
Pb-212	7.50E-08		.	
Bi-212	7.50E-08		.	
Po-212	4.83E-08		.	
Po-216	7.50E-08		.	
Ra-224	7.50E-08		.	
Ra-228	4.48E-07		.	
Ac-228	4.48E-07		.	
Th-228	7.50E-08		.	
Th-231	4.31E-07		.	
Th-232	4.54E-06		.	
Th-234	5.53E-04		.	
Pa-234	5.67E-08		.	
Pa-234m	5.53E-04		.	
U-235	4.30E-07		.	
U-238	5.53E-04		.	
Pu-238	4.36E-05		.	
Pu-239	3.33E-06		.	
Pu-240	1.16E-05		.	
Pu-241	1.60E-03		.	
Am-241	6.67E-08		.	
Cm-242	9.33E-07		.	
Cm-244	3.33E-07		.	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

1 INCINERATION	Thruput Volume m ³ /year	5.28E+00	Thruput Mass kg/year	1.87E+03
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	1.33E-02		1.31E-02	
Cr-51	3.40E-02		9.68E-07	
Mn-54	6.48E-02		1.84E-06	
Fe-55	2.42E-01		6.87E-06	
Fe-59	2.18E-03		6.21E-08	
Co-58	8.70E-02		2.47E-06	
Co-60	6.89E-01		1.95E-05	
Ni-59	3.12E-03		8.88E-08	
Ni-63	4.57E-01		1.29E-05	
Sr-90	1.16E+00		3.30E-05	
Y-90	1.16E+00		3.30E-05	
Zr-95	2.65E-03		7.54E-08	
Tc-99	2.07E-04		5.89E-09	
Ru-106	1.13E-01		3.22E-06	
Rh-106	1.13E-01		3.22E-06	
Sb-125	3.25E-02		9.25E-07	
Te-125m	7.95E-03		2.25E-07	
Cs-134	1.31E-01		3.74E-06	
Cs-137	1.21E+00		3.45E-05	
Ba-137m	1.15E+00		3.27E-05	
Ce-144	3.79E-01		1.07E-05	
Pr-144	3.79E-01		1.07E-05	
Pr-144m	4.56E-03		1.29E-07	
Pm-147	9.27E-01		2.63E-05	
Sm-151	9.06E-03		2.57E-07	
Eu-152	1.38E-04		3.93E-09	
Eu-154	2.37E-02		6.74E-07	
Eu-155	1.88E-02		5.34E-07	
Tl-208	1.63E-07		4.62E-12	
Pb-212	4.31E-07		1.22E-11	
Bi-212	4.31E-07		1.22E-11	
Po-212	2.78E-07		7.89E-12	
Po-216	4.31E-07		1.22E-11	
Ra-224	4.31E-07		1.22E-11	
Ra-228	2.57E-06		7.32E-11	
Ac-228	2.57E-06		7.32E-11	
Th-228	4.31E-07		1.22E-11	
Th-231	2.48E-06		7.05E-11	
Th-232	2.61E-05		7.43E-10	
Th-234	3.18E-03		9.03E-08	
Pa-234	3.25E-07		9.25E-12	
Pa-234m	3.18E-03		9.03E-08	
U-235	2.47E-06		7.02E-11	
U-238	3.18E-03		9.03E-08	
Pu-238	2.85E-02		8.11E-07	
Pu-239	2.76E-04		7.86E-09	
Pu-240	1.38E-04		3.93E-09	
Pu-241	3.19E-02		9.07E-07	
Am-241	4.15E-04		1.17E-08	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

2 SOLIDIFICATION	Thruput Volume m ³ /year	5.34E+01	Thruput Mass kg/year	6.14E+04
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	3.41E-01		5.12E-03	
Cr-51	9.05E-01		6.15E-14	
Mn-54	1.72E+00		1.17E-13	
Fe-55	6.43E+00		4.37E-13	
Fe-59	5.81E-02		3.95E-15	
Co-58	2.31E+00		1.57E-13	
Co-60	1.83E+01		1.24E-12	
Ni-59	8.30E-02		5.64E-15	
Ni-63	1.21E+01		8.26E-13	
Sr-90	3.08E+01		2.09E-12	
Y-90	3.08E+01		2.09E-12	
Zr-95	7.06E-02		4.80E-15	
Tc-99	5.51E-03		3.74E-16	
Ru-106	3.01E+00		2.04E-13	
Rh-106	3.01E+00		2.04E-13	
Sb-125	8.65E-01		5.88E-14	
Te-125m	2.11E-01		1.43E-14	
Cs-134	3.50E+00		2.38E-13	
Cs-137	3.23E+01		2.19E-12	
Ba-137m	3.06E+01		2.08E-12	
Ce-144	1.00E+01		6.86E-13	
Pr-144	1.00E+01		6.86E-13	
Pr-144m	1.21E-01		8.24E-15	
Pm-147	2.46E+01		1.67E-12	
Sm-151	2.40E-01		1.63E-14	
Eu-152	3.67E-03		2.49E-16	
Eu-154	6.30E-01		4.28E-14	
Eu-155	4.99E-01		3.39E-14	
Tl-208	4.32E-06		2.94E-19	
Pb-212	1.14E-05		7.79E-19	
Bi-212	1.14E-05		7.79E-19	
Po-212	7.38E-06		5.02E-19	
Po-216	1.14E-05		7.79E-19	
Ra-224	1.14E-05		7.79E-19	
Ra-228	6.84E-05		4.65E-18	
Ac-228	6.84E-05		4.65E-18	
Th-228	1.14E-05		7.79E-19	
Th-231	6.59E-05		4.48E-18	
Th-232	6.95E-04		4.72E-17	
Th-234	8.45E-02		5.74E-15	
Pa-234	8.65E-06		5.88E-19	
Pa-234m	8.45E-02		5.74E-15	
U-235	6.56E-05		4.46E-18	
U-238	8.45E-02		5.74E-15	
Pu-238	7.59E-01		5.16E-14	
Pu-239	7.35E-03		4.99E-16	
Pu-240	3.67E-03		2.49E-16	
Pu-241	8.49E-01		5.77E-14	
Am-241	1.10E-02		7.49E-16	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

5 SUPERCOMPACTION

Thruput Volume
m³/year

4.82E+03

Thruput Mass

kg/year

7.23E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.22E+01	1.83E-09
Cr-51	3.11E+01	4.66E-09
Mn-54	5.92E+01	8.88E-09
Fe-55	2.21E+02	3.31E-08
Fe-59	1.99E+00	2.99E-10
Co-58	7.95E+01	1.19E-08
Co-60	6.29E+02	9.44E-08
Ni-59	2.85E+00	4.28E-10
Ni-63	4.17E+02	6.26E-08
Sr-90	1.06E+03	1.59E-07
Y-90	1.06E+03	1.59E-07
Zr-95	2.42E+00	3.64E-10
Tc-99	1.89E-01	2.84E-11
Ru-106	1.03E+02	1.55E-08
Rh-106	1.03E+02	1.55E-08
Sb-125	2.97E+01	4.46E-09
Te-125m	7.26E+00	1.08E-09
Cs-134	1.20E+02	1.80E-08
Cs-137	1.11E+03	1.66E-07
Ba-137m	1.05E+03	1.57E-07
Ce-144	3.46E+02	5.20E-08
Pr-144	3.46E+02	5.20E-08
Pr-144m	4.16E+00	6.25E-10
Pm-147	8.46E+02	1.26E-07
Sm-151	8.27E+00	1.24E-09
Eu-152	1.26E-01	1.89E-11
Eu-154	2.16E+01	3.25E-09
Eu-155	1.71E+01	2.57E-09
Tl-208	1.48E-04	2.23E-14
Pb-212	3.93E-04	5.90E-14
Bi-212	3.93E-04	5.90E-14
Po-212	2.53E-04	3.80E-14
Po-216	3.93E-04	5.90E-14
Ra-224	3.93E-04	5.90E-14
Ra-228	2.35E-03	3.53E-13
Ac-228	2.35E-03	3.53E-13
Th-228	3.93E-04	5.90E-14
Th-231	2.26E-03	3.39E-13
Th-232	2.38E-02	3.58E-12
Th-234	2.90E+00	4.35E-10
Pa-234	2.97E-04	4.46E-14
Pa-234m	2.90E+00	4.35E-10
U-235	2.25E-03	3.38E-13
U-238	2.90E+00	4.35E-10
Pu-238	2.60E+01	3.91E-09
Pu-239	2.52E-01	3.79E-11
Pu-240	1.26E-01	1.89E-11
Pu-241	2.91E+01	4.37E-09
Am-241	3.79E-01	5.68E-11

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

6 SIZE_REDUCTION	Thruput Volume m3/year	3.07E+03	Thruput Mass kg/year	2.46E+07
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
H-3	7.57E+00	3.25E-07		
Cr-51	4.93E+01	2.12E-06		
Mn-54	9.38E+01	4.03E-06		
Fe-55	3.50E+02	1.50E-05		
Fe-59	3.16E+00	1.36E-07		
Co-58	1.26E+02	5.41E-06		
Co-60	9.91E+02	4.26E-05		
Ni-59	4.52E+00	1.94E-07		
Ni-63	6.50E+02	2.79E-05		
Sr-90	6.58E+02	2.83E-05		
Y-90	6.58E+02	2.83E-05		
Zr-95	3.84E+00	1.65E-07		
Tc-99	1.17E-01	5.05E-09		
Ru-106	6.43E+01	2.76E-06		
Rh-106	6.43E+01	2.76E-06		
Sb-125	1.84E+01	7.94E-07		
Te-125m	4.51E+00	1.93E-07		
Cs-134	7.48E+01	3.21E-06		
Cs-137	6.90E+02	2.96E-05		
Ba-137m	6.53E+02	2.80E-05		
Ce-144	2.15E+02	9.25E-06		
Pr-144	2.15E+02	9.25E-06		
Pr-144m	2.58E+00	1.11E-07		
Pm-147	5.25E+02	2.26E-05		
Sm-151	5.13E+00	2.20E-07		
Eu-152	7.84E-02	3.37E-09		
Eu-154	1.34E+01	5.78E-07		
Eu-155	1.06E+01	4.58E-07		
Tl-208	9.23E-05	3.97E-12		
Pb-212	2.44E-04	1.05E-11		
Bi-212	2.44E-04	1.05E-11		
Po-212	1.57E-04	6.77E-12		
Po-216	2.44E-04	1.05E-11		
Ra-224	2.44E-04	1.05E-11		
Ra-228	1.46E-03	6.28E-11		
Ac-228	1.46E-03	6.28E-11		
Th-228	2.44E-04	1.05E-11		
Th-231	1.40E-03	6.05E-11		
Th-232	1.48E-02	6.37E-10		
Th-234	1.80E+00	7.75E-08		
Pa-234	1.84E-04	7.94E-12		
Pa-234m	1.80E+00	7.75E-08		
U-235	1.40E-03	6.02E-11		
U-238	1.80E+00	7.75E-08		
Pu-238	1.61E+01	6.96E-07		
Pu-239	1.56E-01	6.74E-09		
Pu-240	7.84E-02	3.37E-09		
Pu-241	1.81E+01	7.79E-07		
Am-241	2.35E-01	1.01E-08		

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

11 PACKAGING	Thruput Volume m3/year	9.14E+02	Thruput Mass kg/year	2.74E+06
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	2.31E+00		9.94E-08	
Cr-51	5.89E+00		2.53E-07	
Mn-54	1.12E+01		4.82E-07	
Fe-55	4.19E+01		1.80E-06	
Fe-59	3.78E-01		1.62E-08	
Co-58	1.50E+01		6.48E-07	
Co-60	1.19E+02		5.13E-06	
Ni-59	5.41E-01		2.32E-08	
Ni-63	7.91E+01		3.40E-06	
Sr-90	2.01E+02		8.65E-06	
Y-90	2.01E+02		8.65E-06	
Zr-95	4.60E-01		1.97E-08	
Tc-99	3.59E-02		1.54E-09	
Ru-106	1.96E+01		8.44E-07	
Rh-106	1.96E+01		8.44E-07	
Sb-125	5.64E+00		2.42E-07	
Te-125m	1.37E+00		5.92E-08	
Cs-134	2.28E+01		9.81E-07	
Cs-137	2.10E+02		9.06E-06	
Ba-137m	1.99E+02		8.57E-06	
Ce-144	6.57E+01		2.82E-06	
Pr-144	6.57E+01		2.82E-06	
Pr-144m	7.90E-01		3.39E-08	
Pm-147	1.60E+02		6.89E-06	
Sm-151	1.56E+00		6.74E-08	
Eu-152	2.39E-02		1.02E-09	
Eu-154	4.10E+00		1.76E-07	
Eu-155	3.25E+00		1.40E-07	
Tl-208	2.82E-05		1.21E-12	
Pb-212	7.46E-05		3.20E-12	
Bi-212	7.46E-05		3.20E-12	
Po-212	4.81E-05		2.06E-12	
Po-216	7.46E-05		3.20E-12	
Ra-224	7.46E-05		3.20E-12	
Ra-228	4.46E-04		1.91E-11	
Ac-228	4.46E-04		1.91E-11	
Th-228	7.46E-05		3.20E-12	
Th-231	4.29E-04		1.84E-11	
Th-232	4.52E-03		1.94E-10	
Th-234	5.50E-01		2.36E-08	
Pa-234	5.64E-05		2.42E-12	
Pa-234m	5.50E-01		2.36E-08	
U-235	4.27E-04		1.84E-11	
U-238	5.50E-01		2.36E-08	
Pu-238	4.94E+00		2.12E-07	
Pu-239	4.78E-02		2.05E-09	
Pu-240	2.39E-02		1.02E-09	
Pu-241	5.53E+00		2.37E-07	
Am-241	7.18E-02		3.08E-09	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

96 CERTIFY_SHIP	Thruput Volume m3/year	2.31E+04	Thruput Mass kg/year	6.64E+07
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	2.21E+01		.	
Cr-51	8.66E+01		.	
Mn-54	1.64E+02		.	
Fe-55	6.15E+02		.	
Fe-59	5.56E+00		.	
Co-58	2.21E+02		.	
Co-60	1.74E+03		.	
Ni-59	7.94E+00		.	
Ni-63	1.15E+03		.	
Sr-90	1.62E+05		.	
Y-90	1.62E+05		.	
Zr-95	6.75E+00		.	
Tc-99	3.44E-01		.	
Ru-106	2.53E+05		.	
Rh-106	2.53E+05		.	
Sb-125	5.41E+01		.	
Te-125m	1.32E+01		.	
Cs-134	2.19E+02		.	
Cs-137	5.48E+06		.	
Ba-137m	5.18E+06		.	
Ce-144	6.31E+02		.	
Pr-144	6.31E+02		.	
Pr-144m	7.58E+00		.	
Pm-147	1.54E+03		.	
Sm-151	1.50E+01		.	
Eu-152	2.29E-01		.	
Eu-154	3.94E+01		.	
Eu-155	3.12E+01		.	
Tl-208	2.70E-04		.	
Pb-212	7.16E-04		.	
Bi-212	7.16E-04		.	
Po-212	4.61E-04		.	
Po-216	7.16E-04		.	
Ra-224	7.16E-04		.	
Ra-228	4.28E-03		.	
Ac-228	4.28E-03		.	
Th-228	7.16E-04		.	
Th-231	4.12E-03		.	
Th-232	4.34E-02		.	
Th-234	5.28E+00		.	
Pa-234	5.41E-04		.	
Pa-234m	5.28E+00		.	
U-235	4.10E-03		.	
U-238	5.28E+00		.	
Pu-238	4.74E+01		.	
Pu-239	4.59E-01		.	
Pu-240	2.29E-01		.	
Pu-241	5.31E+01		.	
Am-241	6.89E-01		.	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH non-alpha

1 INCINERATION

Thruput Volume 1.70E+03 Thruput Mass
m3/year kg/year 2.56E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.97E-04	1.93E-04
Cr-51	3.17E-01	9.02E-06
Mn-54	6.05E-01	1.71E-05
Fe-55	2.25E+00	6.41E-05
Fe-59	2.04E-02	5.79E-07
Co-58	8.12E-01	2.30E-05
Co-60	6.36E+00	1.80E-04
Ni-59	2.91E-02	8.28E-07
Ni-63	4.14E+00	1.17E-04
Sr-90	1.65E-01	4.70E-06
Y-90	1.65E-01	4.70E-06
Zr-95	2.47E-02	7.03E-07
Tc-99	2.95E-05	8.39E-10
Ru-106	1.61E-02	4.59E-07
Rh-106	1.61E-02	4.59E-07
Sb-125	4.64E-03	1.31E-07
Te-125m	1.13E-03	3.21E-08
Cs-134	1.87E-02	5.33E-07
Cs-137	1.73E-01	4.92E-06
Ba-137m	1.64E-01	4.66E-06
Ce-144	5.41E-02	1.53E-06
Pr-144	5.41E-02	1.53E-06
Pr-144m	6.50E-04	1.84E-08
Pm-147	1.32E-01	3.75E-06
Sm-151	1.29E-03	3.66E-08
Eu-152	1.97E-05	5.59E-10
Eu-154	3.38E-03	9.60E-08
Eu-155	2.68E-03	7.61E-08
Pu-238	4.07E-03	1.15E-07
Pu-239	3.94E-05	1.11E-09
Pu-240	1.97E-05	5.59E-10
Pu-241	4.55E-03	1.29E-07
Am-241	5.91E-05	1.67E-09

2 SOLIDIFICATION

Thruput Volume 1.01E+03 Thruput Mass
m3/year kg/year 1.21E+06

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.52E+00	2.29E-02
Cr-51	3.18E-01	2.16E-14
Mn-54	6.06E-01	4.12E-14
Fe-55	2.26E+00	1.53E-13
Fe-59	2.04E-02	1.39E-15
Co-58	8.13E-01	5.53E-14
Co-60	6.37E+00	4.33E-13
Ni-59	2.92E-02	1.98E-15
Ni-63	4.15E+00	2.82E-13
Sr-90	1.66E-01	1.13E-14
Y-90	1.66E-01	1.13E-14
Zr-95	2.48E-02	1.68E-15
Tc-99	2.96E-05	2.01E-18
Ru-106	1.62E-02	1.10E-15
Rh-106	1.62E-02	1.10E-15
Sb-125	4.66E-03	3.17E-16
Te-125m	1.13E-03	7.73E-17
Cs-134	1.88E-02	1.28E-15
Cs-137	1.74E-01	1.18E-14
Ba-137m	1.64E-01	1.12E-14
Ce-144	5.43E-02	3.69E-15
Pr-144	5.43E-02	3.69E-15
Pr-144m	6.53E-04	4.44E-17
Pm-147	1.32E-01	9.01E-15
Sm-151	1.29E-03	8.81E-17
Eu-152	1.97E-05	1.34E-18
Eu-154	3.39E-03	2.30E-16
Eu-155	2.69E-03	1.83E-16
Pu-238	4.08E-03	2.77E-16
Pu-239	3.95E-05	2.69E-18
Pu-240	1.98E-05	1.34E-18
Pu-241	4.57E-03	3.11E-16
Am-241	5.93E-05	4.03E-18
Cm-242	1.00E-09	6.80E-23
Cm-244	3.00E-10	2.00E-23

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH non-alpha

5 SUPERCOMPACTION

Thruput Volume 6.82E+02
m3/year kg/year 1.02E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	4.02E-05	6.04E-15
Cr-51	2.71E-02	4.06E-12
Mn-54	5.16E-02	7.74E-12
Fe-55	1.92E-01	2.89E-11
Fe-59	1.74E-03	2.61E-13
Co-58	6.92E-02	1.03E-11
Co-60	5.43E-01	8.15E-11
Ni-59	2.48E-03	3.73E-13
Ni-63	3.53E-01	5.30E-11
Sr-90	3.38E-02	5.07E-12
Y-90	3.38E-02	5.07E-12
Zr-95	2.11E-03	3.17E-13
Tc-99	6.04E-06	9.06E-16
Ru-106	3.30E-03	4.95E-13
Rh-106	3.30E-03	4.95E-13
Sb-125	9.48E-04	1.42E-13
Te-125m	2.31E-04	3.47E-14
Cs-134	3.84E-03	5.76E-13
Cs-137	3.54E-02	5.31E-12
Ba-137m	3.35E-02	5.03E-12
Ce-144	1.10E-02	1.65E-12
Pr-144	1.10E-02	1.65E-12
Pr-144m	1.32E-04	1.99E-14
Pm-147	2.69E-02	4.04E-12
Sm-151	2.63E-04	3.95E-14
Eu-152	4.02E-06	6.04E-16
Eu-154	6.90E-04	1.03E-13
Eu-155	5.47E-04	8.21E-14
Pu-238	8.34E-04	1.25E-13
Pu-239	8.23E-06	1.23E-15
Pu-240	4.63E-06	6.95E-16
Pu-241	1.01E-03	1.52E-13
Am-241	1.20E-05	1.81E-15
Cm-242	4.88E-08	7.32E-18
Cm-244	1.74E-08	2.61E-18

6 SIZE_REDUCTION

Thruput Volume 2.07E+03
m3/year kg/year 1.66E+07

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.39E-05	6.00E-13
Cr-51	2.31E+03	9.95E-05
Mn-54	4.40E+03	1.89E-04
Fe-55	1.64E+04	7.07E-04
Fe-59	1.48E+02	6.39E-06
Co-58	5.91E+03	2.54E-04
Co-60	4.63E+04	1.99E-03
Ni-59	2.12E+02	9.13E-06
Ni-63	3.01E+04	1.29E-03
Sr-90	1.17E-02	5.04E-10
Y-90	1.17E-02	5.04E-10
Zr-95	1.80E+02	7.76E-06
Tc-99	2.09E-06	9.01E-14
Ru-106	1.14E-03	4.92E-11
Rh-106	1.14E-03	4.92E-11
Sb-125	3.29E-04	1.41E-11
Te-125m	8.03E-05	3.45E-12
Cs-134	1.33E-03	5.72E-11
Cs-137	2.11E-01	9.08E-09
Ba-137m	2.10E-01	9.05E-09
Ce-144	3.83E-03	1.64E-10
Pr-144	3.83E-03	1.64E-10
Pr-144m	4.61E-05	1.98E-12
Pm-147	9.36E-03	4.02E-10
Sm-151	9.15E-05	3.93E-12
Eu-152	1.39E-06	6.00E-14
Eu-154	2.39E-04	1.03E-11
Eu-155	1.90E-04	8.17E-12
Pu-238	2.88E-04	1.24E-11
Pu-239	2.79E-06	1.20E-13
Pu-240	1.39E-06	6.00E-14
Pu-241	3.22E-04	1.38E-11
Am-241	4.19E-06	1.80E-13

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH non-alpha

10 AQUEOUS

Thruput Volume m3/year	2.48E+06	Thruput Mass kg/year	2.48E+09
---------------------------	----------	-------------------------	----------

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.69E+02	1.69E-01

11 PACKAGING

Thruput Volume m3/year	1.90E+03	Thruput Mass kg/year	5.70E+06
---------------------------	----------	-------------------------	----------

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	5.95E-02	2.55E-09
Cr-51	1.01E+02	4.37E-06
Mn-54	1.93E+02	8.32E-06
Fe-55	7.22E+02	3.10E-05
Fe-59	6.52E+00	2.80E-07
Co-58	2.59E+02	1.11E-05
Co-60	2.03E+03	8.75E-05
Ni-59	9.32E+00	4.00E-07
Ni-63	1.32E+03	5.70E-05
Sr-90	4.99E+01	2.14E-06
Y-90	4.99E+01	2.14E-06
Zr-95	7.92E+00	3.40E-07
Tc-99	8.92E-03	3.83E-10
Ru-106	4.87E+00	2.09E-07
Rh-106	4.87E+00	2.09E-07
Sb-125	1.40E+00	6.02E-08
Te-125m	3.42E-01	1.47E-08
Cs-134	5.67E+00	2.43E-07
Cs-137	5.23E+01	2.25E-06
Ba-137m	4.95E+01	2.13E-06
Ce-144	1.63E+01	7.02E-07
Pr-144	1.63E+01	7.02E-07
Pr-144m	1.96E-01	8.44E-09
Pm-147	3.98E+01	1.71E-06
Sm-151	3.89E-01	1.67E-08
Eu-152	5.95E-03	2.55E-10
Eu-154	1.02E+00	4.38E-08
Eu-155	8.09E-01	3.48E-08
Pu-238	1.22E+00	5.28E-08
Pu-239	1.19E-02	5.11E-10
Pu-240	5.95E-03	2.55E-10
Pu-241	1.37E+00	5.91E-08
Am-241	1.78E-02	7.67E-10

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH non-alpha

17 DISCHARGE

Thruput Volume m3/year	2.48E+06	Thruput Mass kg/year	2.48E+09
---------------------------	----------	-------------------------	----------

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.68E+02	.

95 INSPECT_RECEIVE

Thruput Volume m3/year	1.38E+03	Thruput Mass kg/year	9.60E+06
---------------------------	----------	-------------------------	----------

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	3.94E-05	.
Cr-51	2.31E+03	.
Mn-54	4.40E+03	.
Fe-55	1.64E+04	.
Fe-59	1.48E+02	.
Co-58	5.91E+03	.
Co-60	4.63E+04	.
Ni-59	2.12E+02	.
Ni-63	3.01E+04	.
Sr-90	3.31E-02	.
Y-90	3.31E-02	.
Zr-95	1.80E+02	.
Tc-99	5.91E-06	.
Ru-106	3.23E-03	.
Rh-106	3.23E-03	.
Sb-125	9.29E-04	.
Te-125m	2.26E-04	.
Cs-134	3.76E-03	.
Cs-137	2.33E-01	.
Ba-137m	2.31E-01	.
Ce-144	1.08E-02	.
Pr-144	1.08E-02	.
Pr-144m	1.30E-04	.
Pm-147	2.64E-02	.
Sm-151	2.58E-04	.
Eu-152	3.94E-06	.
Eu-154	6.76E-04	.
Eu-155	5.36E-04	.
Pu-238	8.17E-04	.
Pu-239	8.06E-06	.
Pu-240	4.55E-06	.
Pu-241	9.95E-04	.
Am-241	1.18E-05	.
Cm-242	4.88E-08	.
Cm-244	1.74E-08	.

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH non-alpha

96 CERTIFY_SHIP

Thruput Volume
m3/year

3.63E+03

Thruput Mass
kg/year

2.60E+07

Nuclide

Activity
(Ci/yr)Air Release
(Ci/yr)

H-3	1.56E+00	.
Cr-51	2.41E+03	.
Mn-54	4.60E+03	.
Fe-55	1.71E+04	.
Fe-59	1.55E+02	.
Co-58	6.17E+03	.
Co-60	4.84E+04	.
Ni-59	2.21E+02	.
Ni-63	3.15E+04	.
Sr-90	5.01E+01	.
Y-90	5.01E+01	.
Zr-95	1.88E+02	.
Tc-99	8.96E-03	.
Ru-106	4.90E+00	.
Rh-106	4.90E+00	.
Sb-125	1.40E+00	.
Te-125m	3.43E-01	.
Cs-134	5.69E+00	.
Cs-137	5.27E+01	.
Ba-137m	4.99E+01	.
Ce-144	1.64E+01	.
Pr-144	1.64E+01	.
Pr-144m	1.97E-01	.
Pm-147	4.00E+01	.
Sm-151	3.91E-01	.
Eu-152	5.97E-03	.
Eu-154	1.02E+00	.
Eu-155	8.12E-01	.
Pu-238	1.23E+00	.
Pu-239	1.19E-02	.
Pu-240	5.97E-03	.
Pu-241	1.38E+00	.
Am-241	1.79E-02	.
Cm-242	4.88E-08	.
Cm-244	1.74E-08	.

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: LANL

Waste Handling: CH non-alpha

1 INCINERATION	Thruput Volume m3/year	5.62E+03	Thruput Mass kg/year	8.43E+05
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	3.60E-02		3.54E-02	
Cr-51	4.64E-03		1.31E-07	
Mn-54	8.83E-03		2.51E-07	
Fe-55	3.29E-02		9.37E-07	
Fe-59	2.98E-04		8.46E-09	
Co-58	1.18E-02		3.36E-07	
Co-60	2.54E-01		7.23E-06	
Ni-59	4.26E-04		1.20E-08	
Ni-63	3.82E-01		1.08E-05	
Sr-90	2.86E+01		8.12E-04	
Y-90	2.86E+01		8.12E-04	
Zr-95	3.62E-04		1.02E-08	
Tc-99	5.10E-03		1.45E-07	
Ru-106	2.79E+00		7.92E-05	
Rh-106	2.79E+00		7.92E-05	
Sb-125	8.01E-01		2.27E-05	
Te-125m	1.95E-01		5.56E-06	
Cs-134	3.24E+00		9.22E-05	
Cs-137	2.99E+01		8.50E-04	
Ba-137m	2.83E+01		8.05E-04	
Ce-144	9.34E+00		2.65E-04	
Pr-144	9.34E+00		2.65E-04	
Pr-144m	1.12E-01		3.19E-06	
Pm-147	2.28E+01		6.47E-04	
Sm-151	2.23E-01		6.33E-06	
Eu-152	3.40E-03		9.66E-08	
Eu-154	5.83E-01		1.65E-05	
Eu-155	4.63E-01		1.31E-05	
Tl-208	1.66E-02		4.74E-07	
Pb-212	4.41E-02		1.25E-06	
Bi-212	4.41E-02		1.25E-06	
Po-212	2.84E-02		8.08E-07	
Po-216	4.41E-02		1.25E-06	
Ra-224	4.41E-02		1.25E-06	
Ra-228	2.64E-01		7.50E-06	
Ac-228	2.64E-01		7.50E-06	
Th-228	4.41E-02		1.25E-06	
Th-231	2.54E-01		7.22E-06	
Th-232	2.68E+00		7.61E-05	
Th-234	3.25E+02		9.25E-03	
Pa-234	3.33E-02		9.48E-07	
Pa-234m	3.25E+02		9.25E-03	
U-235	2.53E-01		7.19E-06	
U-238	3.25E+02		9.25E-03	
Pu-238	5.17E+00		1.46E-04	
Pu-239	3.47E-01		9.87E-06	
Pu-240	1.19E+00		3.39E-05	
Pu-241	1.65E+02		4.69E-03	
Am-241	1.70E-02		4.83E-07	
Cm-242	9.54E-02		2.71E-06	
Cm-244	3.41E-02		9.68E-07	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: LANL

Waste Handling: CH non-alpha

2 SOLIDIFICATION	Thruput Volume m3/year	2.64E+02	Thruput Mass kg/year	3.22E+05
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
H-3	7.68E+03	1.15E+02		
C-14	3.67E-03	2.49E-16		
Cr-51	4.64E-03	3.15E-16		
Mn-54	4.22E-01	2.87E-14		
Fe-55	3.29E-02	2.24E-15		
Fe-59	2.98E-04	2.02E-17		
Co-58	3.93E-01	2.67E-14		
Co-60	8.67E+00	5.89E-13		
Ni-59	4.25E-04	2.89E-17		
Ni-63	1.49E+01	1.01E-12		
Sr-90	1.32E+03	8.99E-11		
Y-90	1.32E+03	8.99E-11		
Zr-95	3.62E-04	2.46E-17		
Tc-99	2.43E-01	1.65E-14		
Ru-106	1.29E+02	8.77E-12		
Rh-106	1.29E+02	8.77E-12		
Sb-125	3.70E+01	2.52E-12		
Te-125m	9.04E+00	6.15E-13		
Cs-134	1.50E+02	1.02E-11		
Cs-137	1.38E+03	9.42E-11		
Ba-137m	1.31E+03	8.92E-11		
Ce-144	4.31E+02	2.93E-11		
Pr-144	4.31E+02	2.93E-11		
Pr-144m	5.19E+00	3.53E-13		
Pm-147	1.05E+03	7.16E-11		
Sm-151	1.03E+01	7.00E-13		
Eu-152	1.57E-01	1.07E-14		
Eu-154	2.69E+01	1.83E-12		
Eu-155	2.14E+01	1.45E-12		
Tl-208	1.66E-02	1.13E-15		
Pb-212	4.41E-02	3.00E-15		
Bi-212	4.41E-02	3.00E-15		
Po-212	2.84E-02	1.93E-15		
Po-216	4.41E-02	3.00E-15		
Ra-224	4.41E-02	3.00E-15		
Ra-228	2.64E-01	1.79E-14		
Ac-228	2.64E-01	1.79E-14		
Th-228	4.41E-02	3.00E-15		
Th-231	2.54E-01	1.72E-14		
Th-232	2.68E+00	1.82E-13		
Th-234	3.25E+02	2.21E-11		
Pa-234	3.33E-02	2.27E-15		
Pa-234m	3.25E+02	2.21E-11		
U-235	2.53E-01	1.72E-14		
U-238	3.26E+02	2.21E-11		
Pu-238	3.69E+01	2.51E-12		
Pu-239	6.55E-01	4.46E-14		
Pu-240	1.35E+00	9.19E-14		
Pu-241	2.00E+02	1.36E-11		
Am-241	4.78E-01	3.25E-14		
Cm-242	9.55E-02	6.49E-15		
Cm-244	3.41E-02	2.32E-15		

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: LANL

Waste Handling: CH non-alpha

5 SUPERCOMPACTION

Thruput Volume 4.79E+03 Thruput Mass 7.19E+05
m3/year kg/year

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	3.84E+05	5.76E-05
C-14	1.83E-01	2.75E-11
Mn-54	2.06E+01	3.10E-09
Co-58	1.90E+01	2.86E-09
Co-60	4.20E+02	6.31E-08
Ni-63	7.27E+02	1.09E-07
Sr-90	6.46E+04	9.70E-06
Y-90	6.46E+04	9.70E-06
Tc-99	1.19E+01	1.78E-09
Ru-106	6.31E+03	9.46E-07
Rh-106	6.31E+03	9.46E-07
Sb-125	1.81E+03	2.71E-07
Te-125m	4.42E+02	6.63E-08
Cs-134	7.38E+03	1.10E-06
Cs-137	6.78E+04	1.01E-05
Ba-137m	6.41E+04	9.62E-06
Ce-144	2.11E+04	3.16E-06
Pr-144	2.11E+04	3.16E-06
Pr-144m	2.54E+02	3.81E-08
Pm-147	5.15E+04	7.73E-06
Sm-151	5.04E+02	7.56E-08
Eu-152	7.69E+00	1.15E-09
Eu-154	1.32E+03	1.98E-07
Eu-155	1.04E+03	1.57E-07
U-238	2.23E+00	3.34E-10
Pu-238	1.58E+03	2.38E-07
Pu-239	1.54E+01	2.31E-09
Pu-240	7.73E+00	1.16E-09
Pu-241	1.78E+03	2.67E-07
Am-241	2.30E+01	3.46E-09
Cm-242	2.91E-03	4.36E-13
Cm-244	1.04E-03	1.56E-13

6 SIZE_REDUCTION

Thruput Volume 1.08E+03 Thruput Mass 8.69E+06
m3/year kg/year

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Cr-51	2.42E+01	1.04E-06
Mn-54	4.62E+01	1.98E-06
Fe-55	1.72E+02	7.42E-06
Fe-59	1.55E+00	6.70E-08
Co-58	6.20E+01	2.66E-06
Co-60	4.86E+02	2.09E-05
Ni-59	2.22E+00	9.58E-08
Ni-63	3.16E+02	1.36E-05
Zr-95	1.89E+00	8.14E-08
Tl-208	5.10E-06	2.19E-13
Pb-212	1.35E-05	5.80E-13
Bi-212	1.35E-05	5.80E-13
Po-212	8.70E-06	3.74E-13
Po-216	1.35E-05	5.80E-13
Ra-224	1.35E-05	5.80E-13
Ra-228	8.07E-05	3.47E-12
Ac-228	8.07E-05	3.47E-12
Th-228	1.35E-05	5.80E-13
Th-231	7.77E-05	3.34E-12
Th-232	8.19E-04	3.52E-11
Th-234	9.96E-02	4.28E-09
Pa-234	1.02E-05	4.38E-13
Pa-234m	9.96E-02	4.28E-09
U-235	7.74E-05	3.32E-12
U-238	9.96E-02	4.28E-09

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: LANL

Waste Handling: CH non-alpha

11 PACKAGING

Thruput Volume	3.56E+03	Thruput Mass	1.06E+07
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	8.11E-02	3.49E-09
Cr-51	5.92E+00	2.54E-07
Mn-54	1.12E+01	4.85E-07
Fe-55	4.21E+01	1.81E-06
Fe-59	3.80E-01	1.63E-08
Co-58	1.51E+01	6.51E-07
Co-60	1.19E+02	5.12E-06
Ni-59	5.44E-01	2.33E-08
Ni-63	7.80E+01	3.35E-06
Sr-90	6.81E+01	2.93E-06
Y-90	6.81E+01	2.93E-06
Zr-95	4.62E-01	1.98E-08
Tc-99	1.21E-02	5.23E-10
Ru-106	6.65E+00	2.86E-07
Rh-106	6.65E+00	2.86E-07
Sb-125	1.91E+00	8.22E-08
Te-125m	4.66E-01	2.00E-08
Cs-134	7.74E+00	3.32E-07
Cs-137	7.14E+01	3.07E-06
Ba-137m	6.76E+01	2.90E-06
Ce-144	2.22E+01	9.58E-07
Pr-144	2.22E+01	9.58E-07
Pr-144m	2.67E-01	1.15E-08
Pm-147	5.43E+01	2.33E-06
Sm-151	5.31E-01	2.28E-08
Eu-152	8.11E-03	3.49E-10
Eu-154	1.39E+00	5.98E-08
Eu-155	1.10E+00	4.74E-08
Tl-208	5.27E-07	2.26E-14
Pb-212	1.39E-06	5.99E-14
Bi-212	1.39E-06	5.99E-14
Po-212	8.99E-07	3.86E-14
Po-216	1.39E-06	5.99E-14
Ra-224	1.39E-06	5.99E-14
Ra-228	8.33E-06	3.58E-13
Ac-228	8.33E-06	3.58E-13
Th-228	1.39E-06	5.99E-14
Th-231	8.02E-06	3.45E-13
Th-232	8.46E-05	3.63E-12
Th-234	1.02E-02	4.42E-10
Pa-234	1.05E-06	4.53E-14
Pa-234m	1.02E-02	4.42E-10
U-235	7.99E-06	3.43E-13
U-238	1.02E-02	4.42E-10
Pu-238	1.67E+00	7.21E-08
Pu-239	1.63E-02	7.02E-10
Pu-240	8.47E-03	3.64E-10
Pu-241	1.92E+00	8.27E-08
Am-241	2.43E-02	1.04E-09
Cm-242	2.83E-05	1.21E-12
Cm-244	1.01E-05	4.35E-13

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: LANL

Waste Handling: CH non-alpha

95 INSPECT_RECEIVE	Thruput Volume	Thruput Mass	
	m3/year	9.29E+01	kg/year 1.31E+05
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
H-3	3.73E+00	.	
C-14	1.83E-01	.	
Cr-51	6.54E-04	.	
Mn-54	2.06E+01	.	
Fe-55	4.64E-03	.	
Fe-59	4.20E-05	.	
Co-58	1.90E+01	.	
Co-60	5.51E+01	.	
Ni-59	6.00E-05	.	
Ni-63	8.53E-03	.	
Sr-90	2.59E+01	.	
Y-90	2.59E+01	.	
Zr-95	5.10E-05	.	
Tc-99	3.67E-01	.	
Cs-134	4.27E+01	.	
Cs-137	5.64E+01	.	
Ba-137m	5.33E+01	.	
Tl-208	5.10E-06	.	
Pb-212	1.35E-05	.	
Bi-212	1.35E-05	.	
Po-212	8.70E-06	.	
Po-216	1.35E-05	.	
Ra-224	1.35E-05	.	
Ra-228	8.07E-05	.	
Ac-228	8.07E-05	.	
Th-228	1.35E-05	.	
Th-231	7.77E-05	.	
Th-232	8.19E-04	.	
Th-234	9.96E-02	.	
Pa-234	1.02E-05	.	
Pa-234m	9.96E-02	.	
U-235	7.74E-05	.	
U-238	2.33E+00	.	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: LANL

Waste Handling: CH non-alpha

96 CERTIFY_SHIP

Thruput Volume
m3/year

4.56E+03

Thruput Mass
kg/year

2.10E+07

Nuclide

Activity
(Ci/yr)Air Release
(Ci/yr)

H-3	3.83E+05	.
C-14	1.83E-01	.
Cr-51	3.02E+01	.
Mn-54	7.82E+01	.
Fe-55	2.14E+02	.
Fe-59	1.94E+00	.
Co-58	9.63E+01	.
Co-60	1.02E+03	.
Ni-59	2.77E+00	.
Ni-63	1.12E+03	.
Sr-90	6.47E+04	.
Y-90	6.47E+04	.
Zr-95	2.35E+00	.
Tc-99	1.19E+01	.
Ru-106	6.32E+03	.
Rh-106	6.32E+03	.
Sb-125	1.81E+03	.
Te-125m	4.43E+02	.
Cs-134	7.39E+03	.
Cs-137	6.79E+04	.
Ba-137m	6.42E+04	.
Ce-144	2.11E+04	.
Pr-144	2.11E+04	.
Pr-144m	2.54E+02	.
Pm-147	5.16E+04	.
Sm-151	5.04E+02	.
Eu-152	7.70E+00	.
Eu-154	1.32E+03	.
Eu-155	1.04E+03	.
Tl-208	1.66E-02	.
Pb-212	4.42E-02	.
Bi-212	4.42E-02	.
Po-212	2.84E-02	.
Po-216	4.42E-02	.
Ra-224	4.42E-02	.
Ra-228	2.64E-01	.
Ac-228	2.64E-01	.
Th-228	4.42E-02	.
Th-231	2.54E-01	.
Th-232	2.68E+00	.
Th-234	3.26E+02	.
Pa-234	3.33E-02	.
Pa-234m	3.26E+02	.
U-235	2.53E-01	.
U-238	3.28E+02	.
Pu-238	1.59E+03	.
Pu-239	1.57E+01	.
Pu-240	8.94E+00	.
Pu-241	1.95E+03	.
Am-241	2.31E+01	.
Cm-242	9.84E-02	.
Cm-244	3.51E-02	.

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: LLNL

Waste Handling: CH non-alpha

1 INCINERATION

Thruput Volume
m3/year 2.95E+01 Thruput Mass
kg/year 6.02E+03

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.86E+04	2.81E+04
C-14	2.62E-01	2.62E-01
Cr-51	2.10E-07	5.98E-12
Mn-54	2.95E+01	8.40E-04
Fe-55	3.15E-01	8.94E-06
Fe-59	1.35E-08	3.83E-13
Co-58	2.73E+01	7.75E-04
Co-60	7.92E+01	2.25E-03
Ni-59	1.93E-08	5.48E-13
Ni-63	9.73E-05	2.76E-09
Sr-90	3.71E+01	1.05E-03
Y-90	3.71E+01	1.05E-03
Zr-95	1.64E-08	4.65E-13
Tc-99	5.25E-01	1.49E-05
Ru-106	8.20E-04	2.33E-08
Rh-106	8.20E-04	2.33E-08
Sb-125	2.35E-04	6.69E-09
Te-125m	5.75E-05	1.63E-09
Cs-134	6.12E+01	1.73E-03
Cs-137	8.07E+01	2.29E-03
Ba-137m	7.64E+01	2.16E-03
Ce-144	2.74E-03	7.80E-08
Pr-144	2.74E-03	7.80E-08
Pr-144m	3.30E-05	9.37E-10
Pm-147	6.70E-03	1.90E-07
Sm-151	6.55E-05	1.86E-09
Eu-152	1.00E-06	2.84E-11
Eu-154	1.71E-04	4.87E-09
Eu-155	1.36E-04	3.86E-09
Tl-208	5.35E-06	1.52E-10
Pb-212	1.41E-05	4.02E-10
Bi-212	1.41E-05	4.02E-10
Po-212	9.13E-06	2.59E-10
Po-216	1.41E-05	4.02E-10
Ra-224	1.41E-05	4.02E-10
Ra-228	8.47E-05	2.40E-09
Ac-228	8.47E-05	2.40E-09
Th-228	1.41E-05	4.02E-10
Th-231	8.15E-05	2.31E-09
Th-232	8.59E-04	2.44E-08
Th-234	1.04E-01	2.96E-06
Pa-234	1.07E-05	3.04E-10
Pa-234m	1.04E-01	2.96E-06
U-235	8.12E-05	2.30E-09
U-238	3.30E+00	9.37E-05
Pu-238	1.51E-03	4.31E-08
Pu-239	1.02E-04	2.89E-09
Pu-240	3.51E-04	9.97E-09
Pu-241	4.84E-02	1.37E-06
Am-241	5.00E-06	1.42E-10
Cm-242	2.80E-05	7.95E-10
Cm-244	1.00E-05	2.84E-10

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: LLNL

Waste Handling: CH non-alpha

2 SOLIDIFICATION

Thruput Volume
m3/year 2.08E+02Thruput Mass
kg/year 2.50E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.22E+04	3.34E+02
C-14	1.39E-02	9.46E-16
Cr-51	2.10E-07	1.43E-20
Mn-54	3.11E+01	2.11E-12
Fe-55	3.14E-01	2.14E-14
Fe-59	1.35E-08	9.18E-22
Co-58	2.87E+01	1.95E-12
Co-60	8.33E+01	5.66E-12
Ni-59	1.93E-08	1.31E-21
Ni-63	3.26E-03	2.22E-16
Sr-90	3.93E+01	2.67E-12
Y-90	3.93E+01	2.67E-12
Zr-95	1.64E-08	1.11E-21
Tc-99	5.52E-01	3.75E-14
Ru-106	2.83E-02	1.92E-15
Rh-106	2.83E-02	1.92E-15
Sb-125	8.12E-03	5.52E-16
Te-125m	1.98E-03	1.34E-16
Cs-134	6.44E+01	4.38E-12
Cs-137	8.52E+01	5.79E-12
Ba-137m	8.06E+01	5.48E-12
Ce-144	9.47E-02	6.44E-15
Pr-144	9.47E-02	6.44E-15
Pr-144m	1.13E-03	7.74E-17
Pm-147	2.31E-01	1.57E-14
Sm-151	2.26E-03	1.53E-16
Eu-152	3.45E-05	2.34E-18
Eu-154	5.92E-03	4.02E-16
Eu-155	4.69E-03	3.19E-16
Tl-208	5.35E-06	3.64E-19
Pb-212	1.41E-05	9.63E-19
Bi-212	1.41E-05	9.63E-19
Po-212	9.13E-06	6.21E-19
Po-216	1.41E-05	9.63E-19
Ra-224	1.41E-05	9.63E-19
Ra-228	8.47E-05	5.76E-18
Ac-228	8.47E-05	5.76E-18
Th-228	1.41E-05	9.63E-19
Th-231	8.15E-05	5.54E-18
Th-232	8.59E-04	5.84E-17
Th-234	1.04E-01	7.11E-15
Pa-234	1.07E-05	7.28E-19
Pa-234m	1.04E-01	7.11E-15
U-235	8.12E-05	5.52E-18
U-238	3.46E+00	2.35E-13
Pu-238	5.23E-02	3.56E-15
Pu-239	3.52E-03	2.39E-16
Pu-240	1.21E-02	8.24E-16
Pu-241	1.67E+00	1.13E-13
Am-241	1.72E-04	1.17E-17
Cm-242	9.66E-04	6.57E-17
Cm-244	2.11E-01	1.43E-14

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: LLNL

Waste Handling: CH non-alpha

5 SUPERCOMPACTION

Nuclide	Thruput Volume m3/year	Thruput Mass kg/year
	1.16E+02	1.75E+04
Activity (Ci/yr)		
Air Release (Ci/yr)		
H-3	7.10E+03	1.06E-06
C-14	6.33E-01	9.49E-11
Mn-54	7.13E+01	1.06E-08
Co-58	6.58E+01	9.87E-09
Co-60	1.90E+02	2.85E-08
Ni-63	1.00E-03	1.50E-13
Sr-90	8.95E+01	1.34E-08
Y-90	8.95E+01	1.34E-08
Tc-99	1.26E+00	1.89E-10
Ru-106	8.69E-03	1.30E-12
Rh-106	8.69E-03	1.30E-12
Sb-125	2.49E-03	3.74E-13
Te-125m	6.09E-04	9.14E-14
Cs-134	1.47E+02	2.21E-08
Cs-137	1.94E+02	2.92E-08
Ba-137m	1.84E+02	2.76E-08
Ce-144	2.91E-02	4.36E-12
Pr-144	2.91E-02	4.36E-12
Pr-144m	3.49E-04	5.24E-14
Pm-147	7.10E-02	1.06E-11
Sm-151	6.94E-04	1.04E-13
Eu-152	1.06E-05	1.59E-15
Eu-154	1.81E-03	2.72E-13
Eu-155	1.44E-03	2.16E-13
U-238	7.70E+00	1.15E-09
Pu-238	1.60E-02	2.41E-12
Pu-239	1.08E-03	1.62E-13
Pu-240	3.72E-03	5.58E-13
Pu-241	5.13E-01	7.70E-11
Am-241	5.30E-05	7.95E-15
Cm-242	2.96E-04	4.45E-14
Cm-244	1.05E+01	1.58E-09

6 SIZE_REDUCTION

Nuclide	Thruput Volume m3/year	Thruput Mass kg/year
	7.53E+01	6.02E+05
Activity (Ci/yr)		
Air Release (Ci/yr)		
H-3	4.13E+03	1.77E-04
C-14	1.90E-04	8.19E-12
Cr-51	6.32E-02	2.71E-09
Mn-54	1.41E-01	6.10E-09
Fe-55	4.49E-01	1.93E-08
Fe-59	4.06E-03	1.74E-10
Co-58	1.81E-01	7.80E-09
Co-60	1.32E+00	5.69E-08
Ni-59	5.80E-03	2.49E-10
Ni-63	8.25E-01	3.54E-08
Sr-90	8.03E-02	3.45E-09
Y-90	8.03E-02	3.45E-09
Zr-95	4.93E-03	2.12E-10
Tc-99	3.90E-04	1.68E-11
Ru-106	5.20E-03	2.24E-10
Rh-106	5.20E-03	2.24E-10
Sb-125	1.49E-03	6.43E-11
Te-125m	3.65E-04	1.57E-11
Cs-134	5.04E-02	2.17E-09
Cs-137	1.14E-01	4.92E-09
Ba-137m	1.08E-01	4.65E-09
Ce-144	1.74E-02	7.49E-10
Pr-144	1.74E-02	7.49E-10
Pr-144m	2.09E-04	9.01E-12
Pm-147	4.25E-02	1.83E-09
Sm-151	4.16E-04	1.78E-11
Eu-152	6.35E-06	2.73E-13
Eu-154	1.08E-03	4.68E-11
Eu-155	8.64E-04	3.71E-11
U-238	2.31E-03	9.97E-11
Pu-238	9.63E-03	4.14E-10
Pu-239	6.48E-04	2.78E-11
Pu-240	2.23E-03	9.59E-11
Pu-241	3.07E-01	1.32E-08
Am-241	3.17E-05	1.36E-12
Cm-242	1.77E-04	7.65E-12
Cm-244	6.35E-05	2.73E-12

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: LLNL

Waste Handling: CH non-alpha

11 PACKAGING	Thruput Volume m3/year	2.95E+00	Thruput Mass kg/year	8.85E+03
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
H-3	3.19E+02	1.37E-05		
C-14	1.47E-05	6.34E-13		
Mn-54	1.66E-03	7.14E-11		
Co-58	1.53E-03	6.59E-11		
Co-60	4.45E-03	1.91E-10		
Ni-63	4.64E-05	1.99E-12		
Sr-90	6.21E-03	2.67E-10		
Y-90	6.21E-03	2.67E-10		
Tc-99	3.02E-05	1.30E-12		
Ru-106	4.03E-04	1.73E-11		
Rh-106	4.03E-04	1.73E-11		
Sb-125	1.15E-04	4.97E-12		
Te-125m	2.82E-05	1.21E-12		
Cs-134	3.90E-03	1.67E-10		
Cs-137	8.86E-03	3.81E-10		
Ba-137m	8.38E-03	3.60E-10		
Ce-144	1.34E-03	5.80E-11		
Pr-144	1.34E-03	5.80E-11		
Pr-144m	1.62E-05	6.97E-13		
Pm-147	3.29E-03	1.41E-10		
Sm-151	3.22E-05	1.38E-12		
Eu-152	4.91E-07	2.11E-14		
Eu-154	8.43E-05	3.62E-12		
Eu-155	6.68E-05	2.87E-12		
U-238	1.79E-04	7.71E-12		
Pu-238	7.45E-04	3.20E-11		
Pu-239	5.01E-05	2.15E-12		
Pu-240	1.72E-04	7.42E-12		
Pu-241	2.38E-02	1.02E-09		
Am-241	2.45E-06	1.05E-13		
Cm-242	1.37E-05	5.92E-13		
Cm-244	4.91E-06	2.11E-13		
95 INSPECT_RECEIVE	Thruput Volume m3/year	1.10E+02	Thruput Mass kg/year	3.00E+05
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
H-3	2.82E+04	.		
C-14	8.95E-01	.		
Cr-51	6.32E-02	.		
Mn-54	1.01E+02	.		
Fe-55	7.64E-01	.		
Fe-59	4.06E-03	.		
Co-58	9.32E+01	.		
Co-60	2.70E+02	.		
Ni-59	5.80E-03	.		
Ni-63	8.24E-01	.		
Sr-90	1.26E+02	.		
Y-90	1.26E+02	.		
Zr-95	4.93E-03	.		
Tc-99	1.79E+00	.		
Cs-134	2.08E+02	.		
Cs-137	2.75E+02	.		
Ba-137m	2.60E+02	.		
Tl-208	5.35E-06	.		
Pb-212	1.41E-05	.		
Bi-212	1.41E-05	.		
Po-212	9.13E-06	.		
Po-216	1.41E-05	.		
Ra-224	1.41E-05	.		
Ra-228	8.47E-05	.		
Ac-228	8.47E-05	.		
Th-228	1.41E-05	.		
Th-231	8.15E-05	.		
Th-232	8.59E-04	.		
Th-234	1.04E-01	.		
Pa-234	1.07E-05	.		
Pa-234m	1.04E-01	.		
U-235	8.12E-05	.		
U-238	1.09E+01	.		
Cm-244	1.05E+01	.		

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: LLNL

Waste Handling: CH non-alpha

96 CERTIFY_SHIP	Thruput Volume m3/year	2.98E+02	Thruput Mass kg/year	1.36E+06
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	3.33E+04		.	
C-14	6.34E-01		.	
Cr-51	6.32E-02		.	
Mn-54	1.01E+02		.	
Fe-55	7.64E-01		.	
Fe-59	4.06E-03		.	
Co-58	9.34E+01		.	
Co-60	2.71E+02		.	
Ni-59	5.80E-03		.	
Ni-63	8.29E-01		.	
Sr-90	1.27E+02		.	
Y-90	1.27E+02		.	
Zr-95	4.93E-03		.	
Tc-99	1.79E+00		.	
Ru-106	4.24E-02		.	
Rh-106	4.24E-02		.	
Sb-125	1.21E-02		.	
Te-125m	2.97E-03		.	
Cs-134	2.09E+02		.	
Cs-137	2.76E+02		.	
Ba-137m	2.61E+02		.	
Ce-144	1.42E-01		.	
Pr-144	1.42E-01		.	
Pr-144m	1.70E-03		.	
Pm-147	3.46E-01		.	
Sm-151	3.39E-03		.	
Eu-152	5.17E-05		.	
Eu-154	8.87E-03		.	
Eu-155	7.03E-03		.	
Tl-208	5.35E-06		.	
Pb-212	1.41E-05		.	
Bi-212	1.41E-05		.	
Po-212	9.13E-06		.	
Po-216	1.41E-05		.	
Ra-224	1.41E-05		.	
Ra-228	8.47E-05		.	
Ac-228	8.47E-05		.	
Th-228	1.41E-05		.	
Th-231	8.15E-05		.	
Th-232	8.59E-04		.	
Th-234	1.04E-01		.	
Pa-234	1.07E-05		.	
Pa-234m	1.04E-01		.	
U-235	8.12E-05		.	
U-238	1.10E+01		.	
Pu-238	7.85E-02		.	
Pu-239	5.28E-03		.	
Pu-240	1.81E-02		.	
Pu-241	2.50E+00		.	
Am-241	2.58E-04		.	
Cm-242	1.44E-03		.	
Cm-244	1.05E+01		.	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: NTS

Waste Handling: CH_non-alpha

11 PACKAGING	Thruput Volume m3/year	1.69E+02	Thruput Mass kg/year	2.01E+05
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	7.34E-05		3.16E-12	
Co-60	3.49E-04		1.50E-11	
Ni-63	6.94E-04		2.98E-11	
Sr-90	6.17E-02		2.65E-09	
Y-90	6.17E-02		2.65E-09	
Tc-99	1.10E-05		4.74E-13	
Ru-106	6.02E-03		2.59E-10	
Rh-106	6.02E-03		2.59E-10	
Sb-125	1.73E-03		7.44E-11	
Te-125m	4.22E-04		1.82E-11	
Cs-134	7.00E-03		3.01E-10	
Cs-137	6.46E-02		2.78E-09	
Ba-137m	6.12E-02		2.63E-09	
Ce-144	2.02E-02		8.67E-10	
Pr-144	2.02E-02		8.67E-10	
Pr-144m	2.42E-04		1.04E-11	
Pm-147	4.92E-02		2.12E-09	
Sm-151	4.81E-04		2.07E-11	
Eu-152	7.34E-06		3.16E-13	
Eu-154	1.26E-03		5.42E-11	
Eu-155	9.99E-04		4.30E-11	
Pu-238	1.52E-03		6.52E-11	
Pu-239	1.47E-05		6.32E-13	
Pu-240	7.34E-06		3.16E-13	
Pu-241	1.70E-03		7.30E-11	
Am-241	2.20E-05		9.47E-13	

96 CERTIFY_SHIP	Thruput Volume m3/year	1.69E+02	Thruput Mass kg/year	2.01E+05
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	7.34E-05		.	
Co-60	3.49E-04		.	
Ni-63	6.94E-04		.	
Sr-90	6.17E-02		.	
Y-90	6.17E-02		.	
Tc-99	1.10E-05		.	
Ru-106	6.02E-03		.	
Rh-106	6.02E-03		.	
Sb-125	1.73E-03		.	
Te-125m	4.22E-04		.	
Cs-134	7.00E-03		.	
Cs-137	6.46E-02		.	
Ba-137m	6.12E-02		.	
Ce-144	2.02E-02		.	
Pr-144	2.02E-02		.	
Pr-144m	2.42E-04		.	
Pm-147	4.92E-02		.	
Sm-151	4.81E-04		.	
Eu-152	7.34E-06		.	
Eu-154	1.26E-03		.	
Eu-155	9.99E-04		.	
Pu-238	1.52E-03		.	
Pu-239	1.47E-05		.	
Pu-240	7.34E-06		.	
Pu-241	1.70E-03		.	
Am-241	2.20E-05		.	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: ORR

Waste Handling: CH_non-alpha

1 INCINERATION	Thruput Volume m3/year	5.95E+03	Thruput Mass kg/year	8.92E+05
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
H-3	1.24E-01	1.22E-01		
C-14	6.09E-03	6.08E-03		
Mn-54	6.86E-01	1.95E-05		
Co-58	6.33E-01	1.80E-05		
Co-60	1.83E+00	5.20E-05		
Sr-90	8.61E-01	2.44E-05		
Y-90	8.61E-01	2.44E-05		
Tc-99	1.22E-02	3.46E-07		
Cs-134	1.42E+00	4.03E-05		
Cs-137	1.87E+00	5.32E-05		
Ba-137m	1.77E+00	5.03E-05		
Tl-208	7.62E-05	2.16E-09		
Pb-212	2.02E-04	5.73E-09		
Bi-212	2.02E-04	5.73E-09		
Po-212	1.30E-04	3.69E-09		
Po-216	2.02E-04	5.73E-09		
Ra-224	2.02E-04	5.73E-09		
Ra-228	1.21E-03	3.43E-08		
Ac-228	1.21E-03	3.43E-08		
Th-228	2.02E-04	5.73E-09		
Th-231	1.16E-03	3.30E-08		
Th-232	1.22E-02	3.48E-07		
Th-234	1.49E+00	4.23E-05		
Pa-234	1.52E-04	4.33E-09		
Pa-234m	1.49E+00	4.23E-05		
U-235	1.16E-03	3.29E-08		
U-238	1.56E+00	4.44E-05		

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: ORR

Waste Handling: CH_non-alpha

2 SOLIDIFICATION

Thruput Volume m3/year	3.35E+02	Thruput Mass kg/year	4.11E+05
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
H-3	2.11E-03	3.16E-05	
C-14	6.09E-06	4.14E-19	
Cr-51	2.22E-06	1.51E-19	
Mn-54	6.86E-01	4.67E-14	
Fe-55	1.58E-05	1.07E-18	
Fe-59	1.43E-07	9.71E-21	
Co-58	6.33E-01	4.31E-14	
Co-60	1.83E+00	1.24E-13	
Ni-59	2.04E-07	1.39E-20	
Ni-63	2.92E-05	1.99E-18	
Sr-90	8.61E-01	5.85E-14	
Y-90	8.61E-01	5.85E-14	
Zr-95	1.73E-07	1.18E-20	
Tc-99	1.22E-02	8.28E-16	
Ru-106	1.67E-06	1.14E-19	
Rh-106	1.67E-06	1.14E-19	
Sb-125	4.80E-07	3.27E-20	
Te-125m	1.17E-07	7.97E-21	
Cs-134	1.42E+00	9.65E-14	
Cs-137	1.87E+00	1.27E-13	
Ba-137m	1.77E+00	1.20E-13	
Ce-144	5.60E-06	3.81E-19	
Pr-144	5.60E-06	3.81E-19	
Pr-144m	6.73E-08	4.58E-21	
Pm-147	1.37E-05	9.29E-19	
Sm-151	1.34E-07	9.08E-21	
Eu-152	2.04E-09	1.39E-22	
Eu-154	3.50E-07	2.38E-20	
Eu-155	2.77E-07	1.89E-20	
Tl-208	9.42E-05	6.41E-18	
Pb-212	2.49E-04	1.70E-17	
Bi-212	2.49E-04	1.70E-17	
Po-212	1.61E-04	1.09E-17	
Po-216	2.49E-04	1.70E-17	
Ra-224	2.49E-04	1.70E-17	
Ra-228	1.49E-03	1.01E-16	
Ac-228	1.49E-03	1.01E-16	
Th-228	2.49E-04	1.70E-17	
Th-231	1.44E-03	9.76E-17	
Th-232	1.51E-02	1.03E-15	
Th-234	1.84E+00	1.25E-13	
Pa-234	1.88E-04	1.28E-17	
Pa-234m	1.84E+00	1.25E-13	
U-235	1.43E-03	9.72E-17	
U-238	1.91E+00	1.30E-13	
Pu-238	2.77E-02	1.88E-15	
Pu-239	2.11E-03	1.44E-16	
Pu-240	7.39E-03	5.03E-16	
Pu-241	1.02E+00	6.92E-14	
Am-241	4.22E-05	2.87E-18	
Cm-242	5.91E-04	4.02E-17	
Cm-244	2.11E-04	1.44E-17	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: ORR

Waste Handling: CH_non-alpha

5 SUPERCOMPACTION	Thruput Volume m3/year	2.09E+02	Thruput Mass kg/year	3.14E+04
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
H-3	1.02E-06	1.53E-16		
Cr-51	1.11E-04	1.67E-14		
Mn-54	2.12E-04	3.17E-14		
Fe-55	7.90E-04	1.18E-13		
Fe-59	7.14E-06	1.07E-15		
Co-58	2.84E-04	4.26E-14		
Co-60	2.23E-03	3.35E-13		
Ni-59	1.02E-05	1.53E-15		
Ni-63	1.46E-03	2.19E-13		
Sr-90	8.57E-04	1.28E-13		
Y-90	8.57E-04	1.28E-13		
Zr-95	8.67E-06	1.30E-15		
Tc-99	1.53E-07	2.29E-17		
Ru-106	8.36E-05	1.25E-14		
Rh-106	8.36E-05	1.25E-14		
Sb-125	2.40E-05	3.60E-15		
Te-125m	5.86E-06	8.80E-16		
Cs-134	9.72E-05	1.46E-14		
Cs-137	8.97E-04	1.35E-13		
Ba-137m	8.49E-04	1.27E-13		
Ce-144	2.80E-04	4.20E-14		
Pr-144	2.80E-04	4.20E-14		
Pr-144m	3.37E-06	5.05E-16		
Pm-147	6.83E-04	1.02E-13		
Sm-151	6.68E-06	1.00E-15		
Eu-152	1.02E-07	1.53E-17		
Eu-154	1.75E-05	2.62E-15		
Eu-155	1.39E-05	2.08E-15		
Tl-208	1.78E-06	2.67E-16		
Pb-212	4.71E-06	7.06E-16		
Bi-212	4.71E-06	7.06E-16		
Po-212	3.03E-06	4.55E-16		
Po-216	4.71E-06	7.06E-16		
Ra-224	4.71E-06	7.06E-16		
Ra-228	2.81E-05	4.22E-15		
Ac-228	2.81E-05	4.22E-15		
Th-228	4.71E-06	7.06E-16		
Th-231	2.71E-05	4.06E-15		
Th-232	2.86E-04	4.28E-14		
Th-234	3.47E-02	5.21E-12		
Pa-234	3.56E-06	5.34E-16		
Pa-234m	3.47E-02	5.21E-12		
U-235	2.70E-05	4.05E-15		
U-238	3.47E-02	5.21E-12		
Pu-238	2.11E-05	3.16E-15		
Pu-239	2.04E-07	3.06E-17		
Pu-240	1.02E-07	1.53E-17		
Pu-241	2.36E-05	3.53E-15		
Am-241	3.06E-07	4.59E-17		

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: ORR

Waste Handling: CH_non-alpha

6 SIZE_REDUCTION	Thruput Volume m3/year	1.06E+04	Thruput Mass kg/year	8.47E+07
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
Tl-208	1.61E-04	6.90E-12		
Pb-212	4.25E-04	1.83E-11		
Bi-212	4.25E-04	1.83E-11		
Po-212	2.74E-04	1.18E-11		
Po-216	4.25E-04	1.83E-11		
Ra-224	4.25E-04	1.83E-11		
Ra-228	2.54E-03	1.09E-10		
Ac-228	2.54E-03	1.09E-10		
Th-228	4.25E-04	1.83E-11		
Th-231	2.45E-03	1.05E-10		
Th-232	2.58E-02	1.11E-09		
Th-234	3.14E+00	1.35E-07		
Pa-234	3.21E-04	1.38E-11		
Pa-234m	3.14E+00	1.35E-07		
U-235	2.44E-03	1.05E-10		
U-238	3.14E+00	1.35E-07		
11 PACKAGING	Thruput Volume m3/year	6.73E+02	Thruput Mass kg/year	2.02E+06
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
H-3	9.74E-01	4.19E-08		
Co-60	4.63E+00	1.99E-07		
Ni-63	9.20E+00	3.96E-07		
Sr-90	8.18E+02	3.52E-05		
Y-90	8.18E+02	3.52E-05		
Tc-99	1.46E-01	6.28E-09		
Ru-106	7.99E+01	3.43E-06		
Rh-106	7.99E+01	3.43E-06		
Sb-125	2.29E+01	9.86E-07		
Te-125m	5.60E+00	2.41E-07		
Cs-134	9.29E+01	3.99E-06		
Cs-137	8.57E+02	3.69E-05		
Ba-137m	8.11E+02	3.49E-05		
Ce-144	2.67E+02	1.15E-05		
Pr-144	2.67E+02	1.15E-05		
Pr-144m	3.21E+00	1.38E-07		
Pm-147	6.52E+02	2.81E-05		
Sm-151	6.38E+00	2.74E-07		
Eu-152	9.74E-02	4.19E-09		
Eu-154	1.67E+01	7.18E-07		
Eu-155	1.32E+01	5.70E-07		
Pu-238	2.01E+01	8.65E-07		
Pu-239	1.95E-01	8.38E-09		
Pu-240	9.74E-02	4.19E-09		
Pu-241	2.25E+01	9.67E-07		
Am-241	2.92E-01	1.26E-08		

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: ORR

Waste Handling: CH_non-alpha

95 INSPECT_RECEIVE	Thruput Volume m3/year	1.66E+04	Thruput Mass kg/year	8.56E+07
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
Tl-208	2.39E-04		.	
Pb-212	6.31E-04		.	
Bi-212	6.31E-04		.	
Po-212	4.07E-04		.	
Po-216	6.31E-04		.	
Ra-224	6.31E-04		.	
Ra-228	3.77E-03		.	
Ac-228	3.77E-03		.	
Th-228	6.31E-04		.	
Th-231	3.63E-03		.	
Th-232	3.83E-02		.	
Th-234	4.66E+00		.	
Pa-234	4.77E-04		.	
Pa-234m	4.66E+00		.	
U-235	3.62E-03		.	
U-238	4.66E+00		.	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: ORR

Waste Handling: CH_non-alpha

96 CERTIFY_SHIP	Thruput Volume m3/year	4.95E+03	Thruput Mass kg/year	9.04E+07
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	9.66E+01		.	
C-14	4.70E+00		.	
Cr-51	1.11E-04		.	
Mn-54	5.31E+02		.	
Fe-55	7.90E-04		.	
Fe-59	7.14E-06		.	
Co-58	4.90E+02		.	
Co-60	1.42E+03		.	
Ni-59	1.02E-05		.	
Ni-63	9.20E+00		.	
Sr-90	1.48E+03		.	
Y-90	1.48E+03		.	
Zr-95	8.67E-06		.	
Tc-99	9.57E+00		.	
Ru-106	7.99E+01		.	
Rh-106	7.99E+01		.	
Sb-125	2.29E+01		.	
Te-125m	5.60E+00		.	
Cs-134	1.19E+03		.	
Cs-137	2.31E+03		.	
Ba-137m	2.18E+03		.	
Ce-144	2.67E+02		.	
Pr-144	2.67E+02		.	
Pr-144m	3.21E+00		.	
Pm-147	6.52E+02		.	
Sm-151	6.38E+00		.	
Eu-152	9.74E-02		.	
Eu-154	1.67E+01		.	
Eu-155	1.32E+01		.	
Tl-208	2.57E-04		.	
Pb-212	6.79E-04		.	
Bi-212	6.79E-04		.	
Po-212	4.38E-04		.	
Po-216	6.79E-04		.	
Ra-224	6.79E-04		.	
Ra-228	4.06E-03		.	
Ac-228	4.06E-03		.	
Th-228	6.79E-04		.	
Th-231	3.91E-03		.	
Th-232	4.12E-02		.	
Th-234	5.01E+00		.	
Pa-234	5.13E-04		.	
Pa-234m	5.01E+00		.	
U-235	3.89E-03		.	
U-238	6.23E+01		.	
Pu-238	2.01E+01		.	
Pu-239	1.97E-01		.	
Pu-240	1.05E-01		.	
Pu-241	2.35E+01		.	
Am-241	2.92E-01		.	
Cm-242	5.91E-04		.	
Cm-244	2.11E-04		.	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: Pantex

Waste Handling: CH_non-alpha

2 SOLIDIFICATION

Thruput Volume m3/year	1.31E+00	Thruput Mass kg/year	1.58E+03
---------------------------	----------	-------------------------	----------

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3		
Tl-208	1.67E-06	1.14E-19
Pb-212	4.43E-06	3.01E-19
Bi-212	4.43E-06	3.01E-19
Po-212	2.86E-06	1.94E-19
Po-216	4.43E-06	3.01E-19
Ra-224	4.43E-06	3.01E-19
Ra-228	2.65E-05	1.80E-18
Ac-228	2.65E-05	1.80E-18
Th-228	4.43E-06	3.01E-19
Th-231	2.55E-05	1.73E-18
Th-232	2.69E-04	1.83E-17
Th-234	3.27E-02	2.22E-15
Pa-234	3.35E-06	2.28E-19
Pa-234m	3.27E-02	2.22E-15
U-235	2.54E-05	1.73E-18
U-238	3.27E-02	2.22E-15

6 SIZE_REDUCTION

Thruput Volume m3/year	1.87E-01	Thruput Mass kg/year	1.50E+03
---------------------------	----------	-------------------------	----------

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	8.88E-02	3.82E-09
Tl-208	7.95E-08	3.42E-15
Pb-212	2.10E-07	9.05E-15
Bi-212	2.10E-07	9.05E-15
Po-212	1.36E-07	5.83E-15
Po-216	2.10E-07	9.05E-15
Ra-224	2.10E-07	9.05E-15
Ra-228	1.26E-06	5.41E-14
Ac-228	1.26E-06	5.41E-14
Th-228	2.10E-07	9.05E-15
Th-231	1.21E-06	5.21E-14
Th-232	1.28E-05	5.49E-13
Th-234	1.55E-03	6.67E-11
Pa-234	1.59E-07	6.83E-15
Pa-234m	1.55E-03	6.67E-11
U-235	1.21E-06	5.19E-14
U-238	1.55E-03	6.67E-11

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: Pantex

Waste Handling: CH_non-alpha

9 EVAPORATION

Thruput Volume m3/year	3.15E+01	Thruput Mass kg/year	3.15E+04
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
H-3	1.87E+00	1.35E+00	
Tl-208	1.67E-06	1.67E-17	
Pb-212	4.43E-06	4.43E-17	
Bi-212	4.43E-06	4.43E-17	
Po-212	2.86E-06	2.86E-17	
Po-216	4.43E-06	4.43E-17	
Ra-224	4.43E-06	4.43E-17	
Ra-228	2.65E-05	2.65E-16	
Ac-228	2.65E-05	2.65E-16	
Th-228	4.43E-06	4.43E-17	
Th-231	2.55E-05	2.55E-16	
Th-232	2.69E-04	2.69E-15	
Th-234	3.27E-02	3.27E-13	
Pa-234	3.35E-06	3.35E-17	
Pa-234m	3.27E-02	3.27E-13	
U-235	2.54E-05	2.54E-16	
U-238	3.27E-02	3.27E-13	

11 PACKAGING

Thruput Volume m3/year	2.65E+02	Thruput Mass kg/year	7.94E+05
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
H-3	1.92E-03	8.26E-11	
Tl-208	1.72E-09	7.39E-17	
Pb-212	4.55E-09	1.96E-16	
Bi-212	4.55E-09	1.96E-16	
Po-212	2.93E-09	1.26E-16	
Po-216	4.55E-09	1.96E-16	
Ra-224	4.55E-09	1.96E-16	
Ra-228	2.72E-08	1.17E-15	
Ac-228	2.72E-08	1.17E-15	
Th-228	4.55E-09	1.96E-16	
Th-231	2.62E-08	1.13E-15	
Th-232	2.76E-07	1.19E-14	
Th-234	3.36E-05	1.44E-12	
Pa-234	3.44E-09	1.48E-16	
Pa-234m	3.36E-05	1.44E-12	
U-235	2.61E-08	1.12E-15	
U-238	3.36E-05	1.44E-12	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: Pantex

Waste Handling: CH_non-alpha

17 DISCHARGE	Thruput Volume m ³ /year	2.99E+01	Thruput Mass kg/year	2.99E+04
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	5.24E-01		.	
Tl-208	1.67E-10		.	
Pb-212	4.43E-10		.	
Bi-212	4.43E-10		.	
Po-212	2.86E-10		.	
Po-216	4.43E-10		.	
Ra-224	4.43E-10		.	
Ra-228	2.65E-09		.	
Ac-228	2.65E-09		.	
Th-228	4.43E-10		.	
Th-231	2.55E-09		.	
Th-232	2.69E-08		.	
Th-234	3.27E-06		.	
Pa-234	3.35E-10		.	
Pa-234m	3.27E-06		.	
U-235	2.54E-09		.	
U-238	3.27E-06		.	
H-3	9.07E-02		.	
Tl-208	1.76E-06		.	
Pb-212	4.65E-06		.	
Bi-212	4.65E-06		.	
Po-212	2.99E-06		.	
Po-216	4.65E-06		.	
Ra-224	4.65E-06		.	
Ra-228	2.78E-05		.	
Ac-228	2.78E-05		.	
Th-228	4.65E-06		.	
Th-231	2.67E-05		.	
Th-232	2.82E-04		.	
Th-234	3.43E-02		.	
Pa-234	3.51E-06		.	
Pa-234m	3.43E-02		.	
U-235	2.66E-05		.	
U-238	3.43E-02		.	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: PORTS

Waste Handling: CH non-alpha

1 INCINERATION

Thruput Volume	1.53E+03	Thruput Mass	3.45E+05
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	5.80E-03	5.70E-03
Tl-208	4.81E-07	1.36E-11
Pb-212	1.27E-06	3.62E-11
Bi-212	1.27E-06	3.62E-11
Po-212	8.21E-07	2.33E-11
Po-216	1.27E-06	3.62E-11
Ra-224	1.27E-06	3.62E-11
Ra-228	7.62E-06	2.16E-10
Ac-228	7.62E-06	2.16E-10
Th-228	1.27E-06	3.62E-11
Th-231	7.33E-06	2.08E-10
Th-232	7.73E-05	2.19E-09
Th-234	9.40E-03	2.67E-07
Pa-234	9.63E-07	2.73E-11
Pa-234m	9.40E-03	2.67E-07
U-235	7.31E-06	2.07E-10
U-238	9.40E-03	2.67E-07

2 SOLIDIFICATION

Thruput Volume	1.27E+02	Thruput Mass	1.78E+05
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	3.93E-03	5.90E-05
Tl-208	4.97E-07	3.38E-20
Pb-212	1.31E-06	8.95E-20
Bi-212	1.31E-06	8.95E-20
Po-212	8.48E-07	5.76E-20
Po-216	1.31E-06	8.95E-20
Ra-224	1.31E-06	8.95E-20
Ra-228	7.86E-06	5.35E-19
Ac-228	7.86E-06	5.35E-19
Th-228	1.31E-06	8.95E-20
Th-231	7.57E-06	5.15E-19
Th-232	7.98E-05	5.43E-18
Th-234	9.71E-03	6.60E-16
Pa-234	9.94E-07	6.76E-20
Pa-234m	9.71E-03	6.60E-16
U-235	7.54E-06	5.13E-19
U-238	9.71E-03	6.60E-16

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: PORTS

Waste Handling: CH non-alpha

5 SUPERCOMPACTION

Thruput Volume	6.86E+01	Thruput Mass	1.03E+04
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.92E-01	2.88E-11
Tl-208	3.40E-09	5.10E-19
Pb-212	8.90E-09	1.33E-18
Bi-212	8.90E-09	1.33E-18
Po-212	5.70E-09	8.55E-19
Po-216	8.90E-09	1.33E-18
Ra-224	8.90E-09	1.33E-18
Ra-228	5.31E-08	7.96E-18
Ac-228	5.31E-08	7.96E-18
Th-228	8.90E-09	1.33E-18
Th-231	5.11E-08	7.66E-18
Th-232	5.39E-07	8.08E-17
Th-234	6.55E-05	9.83E-15
Pa-234	6.70E-09	1.00E-18
Pa-234m	6.55E-05	9.83E-15
U-235	5.09E-08	7.63E-18
U-238	6.55E-05	9.83E-15

6 SIZE_REDUCTION

Thruput Volume	1.08E+04	Thruput Mass	8.67E+07
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	5.15E-04	2.21E-11
C-14	2.40E-05	1.03E-12
Cr-51	1.60E+04	6.91E-04
Mn-54	3.06E+04	1.31E-03
Fe-55	1.14E+05	4.91E-03
Fe-59	1.03E+03	4.44E-05
Co-58	4.11E+04	1.76E-03
Co-60	3.22E+05	1.38E-02
Ni-59	1.47E+03	6.34E-05
Ni-63	2.09E+05	9.02E-03
Sr-90	2.62E-02	1.12E-09
Y-90	2.62E-02	1.12E-09
Zr-95	1.25E+03	5.39E-05
Tc-99	5.20E-05	2.23E-12
Ru-106	2.22E-03	9.58E-11
Rh-106	2.22E-03	9.58E-11
Sb-125	6.40E-04	2.75E-11
Te-125m	1.56E-04	6.72E-12
Cs-134	8.18E-03	3.51E-10
Cs-137	3.13E-02	1.34E-09
Ba-137m	2.96E-02	1.27E-09
Ce-144	7.46E-03	3.20E-10
Pr-144	7.46E-03	3.20E-10
Pr-144m	8.97E-05	3.85E-12
Pm-147	1.82E-02	7.83E-10
Sm-151	1.78E-04	7.65E-12
Eu-152	2.71E-06	1.16E-13
Eu-154	4.66E-04	2.00E-11
Eu-155	3.69E-04	1.59E-11
Tl-208	3.01E-06	1.29E-13
Pb-212	7.98E-06	3.43E-13
Bi-212	7.98E-06	3.43E-13
Po-212	5.14E-06	2.21E-13
Po-216	7.98E-06	3.43E-13
Ra-224	7.98E-06	3.43E-13
Ra-228	4.77E-05	2.05E-12
Ac-228	4.77E-05	2.05E-12
Th-228	7.98E-06	3.43E-13
Th-231	4.59E-05	1.97E-12
Th-232	4.84E-04	2.08E-11
Th-234	5.89E-02	2.53E-09
Pa-234	6.03E-06	2.59E-13
Pa-234m	5.89E-02	2.53E-09
U-235	4.58E-05	1.96E-12
U-238	5.92E-02	2.54E-09
Pu-238	5.61E-04	2.41E-11
Pu-239	5.43E-06	2.33E-13
Pu-240	2.71E-06	1.16E-13
Pu-241	6.28E-04	2.70E-11
Am-241	8.15E-06	3.50E-13

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: PORTS

Waste Handling: CH non-alpha

95 INSPECT_RECEIVE	Thruput Volume m3/year	2.76E+03	Thruput Mass kg/year	1.98E+07
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	1.98E-01		.	
C-14	2.40E-05		.	
Cr-51	1.60E+04		.	
Mn-54	3.06E+04		.	
Fe-55	1.14E+05		.	
Fe-59	1.03E+03		.	
Co-58	4.11E+04		.	
Co-60	3.22E+05		.	
Ni-59	1.47E+03		.	
Ni-63	2.09E+05		.	
Sr-90	2.62E-02		.	
Y-90	2.62E-02		.	
Zr-95	1.25E+03		.	
Tc-99	5.20E-05		.	
Ru-106	2.22E-03		.	
Rh-106	2.22E-03		.	
Sb-125	6.40E-04		.	
Te-125m	1.56E-04		.	
Cs-134	8.18E-03		.	
Cs-137	3.13E-02		.	
Ba-137m	2.96E-02		.	
Ce-144	7.46E-03		.	
Pr-144	7.46E-03		.	
Pr-144m	8.97E-05		.	
Pm-147	1.82E-02		.	
Sm-151	1.78E-04		.	
Eu-152	2.71E-06		.	
Eu-154	4.66E-04		.	
Eu-155	3.69E-04		.	
Tl-208	6.26E-08		.	
Pb-212	1.65E-07		.	
Bi-212	1.65E-07		.	
Po-212	1.06E-07		.	
Po-216	1.65E-07		.	
Ra-224	1.65E-07		.	
Ra-228	9.89E-07		.	
Ac-228	9.89E-07		.	
Th-228	1.65E-07		.	
Th-231	9.52E-07		.	
Th-232	1.00E-05		.	
Th-234	1.22E-03		.	
Pa-234	1.25E-07		.	
Pa-234m	1.22E-03		.	
U-235	9.49E-07		.	
U-238	1.51E-03		.	
Pu-238	5.61E-04		.	
Pu-239	5.43E-06		.	
Pu-240	2.71E-06		.	
Pu-241	6.28E-04		.	
Am-241	8.15E-06		.	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: PORTS

Waste Handling: CH non-alpha

96 CERTIFY_SHIP	Thruput Volume m3/year	1.98E+03	Thruput Mass kg/year	8.73E+07
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	1.92E-01		.	
C-14	2.40E-05		.	
Cr-51	1.60E+04		.	
Mn-54	3.06E+04		.	
Fe-55	1.14E+05		.	
Fe-59	1.03E+03		.	
Co-58	4.11E+04		.	
Co-60	3.22E+05		.	
Ni-59	1.47E+03		.	
Ni-63	2.09E+05		.	
Sr-90	2.62E-02		.	
Y-90	2.62E-02		.	
Zr-95	1.25E+03		.	
Tc-99	5.20E-05		.	
Ru-106	2.22E-03		.	
Rh-106	2.22E-03		.	
Sb-125	6.40E-04		.	
Te-125m	1.56E-04		.	
Cs-134	8.18E-03		.	
Cs-137	3.13E-02		.	
Ba-137m	2.96E-02		.	
Ce-144	7.46E-03		.	
Pr-144	7.46E-03		.	
Pr-144m	8.97E-05		.	
Pm-147	1.82E-02		.	
Sm-151	1.78E-04		.	
Eu-152	2.71E-06		.	
Eu-154	4.66E-04		.	
Eu-155	3.69E-04		.	
Tl-208	3.51E-06		.	
Pb-212	9.31E-06		.	
Bi-212	9.31E-06		.	
Po-212	6.00E-06		.	
Po-216	9.31E-06		.	
Ra-224	9.31E-06		.	
Ra-228	5.56E-05		.	
Ac-228	5.56E-05		.	
Th-228	9.31E-06		.	
Th-231	5.36E-05		.	
Th-232	5.65E-04		.	
Th-234	6.87E-02		.	
Pa-234	7.03E-06		.	
Pa-234m	6.87E-02		.	
U-235	5.34E-05		.	
U-238	6.90E-02		.	
Pu-238	5.61E-04		.	
Pu-239	5.43E-06		.	
Pu-240	2.71E-06		.	
Pu-241	6.28E-04		.	
Am-241	8.15E-06		.	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: PGDP

Waste Handling: CH non-alpha

1 INCINERATION

Thruput Volume	5.44E+02	Thruput Mass	1.10E+05
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tc-99	9.74E-04	2.76E-08
Tl-208	4.09E-06	1.16E-10
Pb-212	1.08E-05	3.08E-10
Bi-212	1.08E-05	3.08E-10
Po-212	6.99E-06	1.98E-10
Po-216	1.08E-05	3.08E-10
Ra-224	1.08E-05	3.08E-10
Ra-228	6.48E-05	1.84E-09
Ac-228	6.48E-05	1.84E-09
Th-228	1.08E-05	3.08E-10
Th-231	6.24E-05	1.77E-09
Th-232	6.58E-04	1.86E-08
Th-234	8.00E-02	2.27E-06
Pa-234	8.19E-06	2.32E-10
Pa-234m	8.00E-02	2.27E-06
U-235	6.22E-05	1.76E-09
U-238	8.00E-02	2.27E-06
Np-237	7.30E-04	2.07E-08
Pu-239	7.30E-04	2.07E-08

2 SOLIDIFICATION

Thruput Volume	5.41E+01	Thruput Mass	7.14E+04
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tc-99	1.13E-03	7.69E-17
Tl-208	4.76E-06	3.23E-19
Pb-212	1.26E-05	8.56E-19
Bi-212	1.26E-05	8.56E-19
Po-212	8.12E-06	5.52E-19
Po-216	1.26E-05	8.56E-19
Ra-224	1.26E-05	8.56E-19
Ra-228	7.53E-05	5.12E-18
Ac-228	7.53E-05	5.12E-18
Th-228	1.26E-05	8.56E-19
Th-231	7.25E-05	4.93E-18
Th-232	7.64E-04	5.19E-17
Th-234	9.29E-02	6.32E-15
Pa-234	9.52E-06	6.47E-19
Pa-234m	9.29E-02	6.32E-15
U-235	7.22E-05	4.91E-18
U-238	9.29E-02	6.32E-15
Np-237	8.48E-04	5.77E-17
Pu-239	8.48E-04	5.77E-17

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: PGDP

Waste Handling: CH non-alpha

5 SUPERCOMPACTION

Thruput Volume
m3/year 5.79E+02 Thruput Mass
kg/year 8.69E+04

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tc-99	1.03E-03	1.55E-13
Tl-208	4.36E-06	6.54E-16
Pb-212	1.15E-05	1.73E-15
Bi-212	1.15E-05	1.73E-15
Po-212	7.44E-06	1.11E-15
Po-216	1.15E-05	1.73E-15
Ra-224	1.15E-05	1.73E-15
Ra-228	6.90E-05	1.03E-14
Ac-228	6.90E-05	1.03E-14
Th-228	1.15E-05	1.73E-15
Th-231	6.64E-05	9.97E-15
Th-232	7.00E-04	1.05E-13
Th-234	8.52E-02	1.27E-11
Pa-234	8.72E-06	1.30E-15
Pa-234m	8.52E-02	1.27E-11
U-235	6.62E-05	9.93E-15
U-238	8.52E-02	1.27E-11
Np-237	7.78E-04	1.16E-13
Pu-239	7.78E-04	1.16E-13

6 SIZE_REDUCTION

Thruput Volume
m3/year 9.39E+01 Thruput Mass
kg/year 7.51E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tc-99	1.68E-04	7.22E-12
Tl-208	7.07E-07	3.04E-14
Pb-212	1.87E-06	8.05E-14
Bi-212	1.87E-06	8.05E-14
Po-212	1.20E-06	5.18E-14
Po-216	1.87E-06	8.05E-14
Ra-224	1.87E-06	8.05E-14
Ra-228	1.11E-05	4.81E-13
Ac-228	1.11E-05	4.81E-13
Th-228	1.87E-06	8.05E-14
Th-231	1.07E-05	4.63E-13
Th-232	1.13E-04	4.88E-12
Th-234	1.38E-02	5.93E-10
Pa-234	1.41E-06	6.08E-14
Pa-234m	1.38E-02	5.93E-10
U-235	1.07E-05	4.61E-13
U-238	1.38E-02	5.93E-10
Np-237	1.26E-04	5.42E-12
Pu-239	1.26E-04	5.42E-12

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: PGDP

Waste Handling: CH non-alpha

9 EVAPORATION

Thruput Volume
m3/year 5.41E+01 Thruput Mass
kg/year 5.41E+04

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tc-99	9.69E-05	9.69E-16
Tl-208	4.07E-07	4.07E-18
Pb-212	1.07E-06	1.07E-17
Bi-212	1.07E-06	1.07E-17
Po-212	6.95E-07	6.95E-18
Po-216	1.07E-06	1.07E-17
Ra-224	1.07E-06	1.07E-17
Ra-228	6.45E-06	6.45E-17
Ac-228	6.45E-06	6.45E-17
Th-228	1.07E-06	1.07E-17
Th-231	6.21E-06	6.21E-17
Th-232	6.54E-05	6.54E-16
Th-234	7.96E-03	7.96E-14
Pa-234	8.15E-07	8.15E-18
Pa-234m	7.96E-03	7.96E-14
U-235	6.18E-06	6.18E-17
U-238	7.96E-03	7.96E-14
Np-237	7.26E-05	7.26E-16
Pu-239	7.26E-05	7.26E-16

11 PACKAGING

Thruput Volume
m3/year 3.64E+03 Thruput Mass
kg/year 1.09E+07

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tc-99	6.52E-03	2.80E-10
Tl-208	2.74E-05	1.18E-12
Pb-212	7.26E-05	3.12E-12
Bi-212	7.26E-05	3.12E-12
Po-212	4.68E-05	2.01E-12
Po-216	7.26E-05	3.12E-12
Ra-224	7.26E-05	3.12E-12
Ra-228	4.34E-04	1.86E-11
Ac-228	4.34E-04	1.86E-11
Th-228	7.26E-05	3.12E-12
Th-231	4.18E-04	1.79E-11
Th-232	4.40E-03	1.89E-10
Th-234	5.36E-01	2.30E-08
Pa-234	5.49E-05	2.36E-12
Pa-234m	5.36E-01	2.30E-08
U-235	4.16E-04	1.79E-11
U-238	5.36E-01	2.30E-08
Np-237	4.89E-03	2.10E-10
Pu-239	4.89E-03	2.10E-10

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: PGDP

Waste Handling: CH non-alpha

17 DISCHARGE	Thruput Volume m3/year	5.14E+01	Thruput Mass kg/year	5.14E+04
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
Tc-99	9.70E-09		.	
Tl-208	.		.	
Pb-212	1.00E-10		.	
Bi-212	1.00E-10		.	
Po-212	1.00E-10		.	
Po-216	1.00E-10		.	
Ra-224	1.00E-10		.	
Ra-228	6.00E-10		.	
Ac-228	6.00E-10		.	
Th-228	1.00E-10		.	
Th-231	6.00E-10		.	
Th-232	6.50E-09		.	
Th-234	7.96E-07		.	
Pa-234	1.00E-10		.	
Pa-234m	7.96E-07		.	
U-235	6.00E-10		.	
U-238	7.96E-07		.	
Np-237	7.30E-09		.	
Pu-239	7.30E-09		.	
96 CERTIFY_SHIP	Thruput Volume m3/year	3.79E+03	Thruput Mass kg/year	1.19E+07
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
Tc-99	8.84E-03		.	
Tl-208	3.72E-05		.	
Pb-212	9.84E-05		.	
Bi-212	9.84E-05		.	
Po-212	6.34E-05		.	
Po-216	9.84E-05		.	
Ra-224	9.84E-05		.	
Ra-228	5.88E-04		.	
Ac-228	5.88E-04		.	
Th-228	9.84E-05		.	
Th-231	5.66E-04		.	
Th-232	5.97E-03		.	
Th-234	7.26E-01		.	
Pa-234	7.44E-05		.	
Pa-234m	7.26E-01		.	
U-235	5.64E-04		.	
U-238	7.26E-01		.	
Np-237	6.63E-03		.	
Pu-239	6.63E-03		.	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: RFETS

Waste Handling: CH non-alpha

1 INCINERATION

Thruput Volume
m³/year 3.99E+00 Thruput Mass
kg/year 3.67E+03

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	3.51E-08	9.96E-13
Pb-212	9.29E-08	2.63E-12
Bi-212	9.29E-08	2.63E-12
Po-212	5.99E-08	1.70E-12
Po-216	9.29E-08	2.63E-12
Ra-224	9.29E-08	2.63E-12
Ra-228	5.55E-07	1.57E-11
Ac-228	5.55E-07	1.57E-11
Th-228	9.29E-08	2.63E-12
Th-231	5.34E-07	1.51E-11
Th-232	5.63E-06	1.60E-10
Th-234	6.85E-04	1.94E-08
Pa-234	7.02E-08	1.99E-12
Pa-234m	6.85E-04	1.94E-08
U-235	5.32E-07	1.51E-11
U-238	6.85E-04	1.94E-08
Pu-238	5.41E-04	1.53E-08
Pu-239	4.13E-05	1.17E-09
Pu-240	1.44E-04	4.10E-09
Pu-241	1.99E-02	5.65E-07
Am-241	8.26E-07	2.34E-11
Cm-242	1.15E-05	3.28E-10
Cm-244	4.13E-06	1.17E-10

2 SOLIDIFICATION

Thruput Volume
m³/year 1.36E+02 Thruput Mass
kg/year 1.63E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	1.22E-06	8.33E-20
Pb-212	3.24E-06	2.20E-19
Bi-212	3.24E-06	2.20E-19
Po-212	2.09E-06	1.42E-19
Po-216	3.24E-06	2.20E-19
Ra-224	3.24E-06	2.20E-19
Ra-228	1.93E-05	1.31E-18
Ac-228	1.93E-05	1.31E-18
Th-228	3.24E-06	2.20E-19
Th-231	1.86E-05	1.26E-18
Th-232	1.96E-04	1.33E-17
Th-234	2.39E-02	1.62E-15
Pa-234	2.45E-06	1.66E-19
Pa-234m	2.39E-02	1.62E-15
U-235	1.86E-05	1.26E-18
U-238	2.39E-02	1.62E-15
Pu-238	1.88E-02	1.28E-15
Pu-239	1.44E-03	9.80E-17
Pu-240	5.04E-03	3.43E-16
Pu-241	6.95E-01	4.72E-14
Am-241	2.88E-05	1.96E-18
Cm-242	4.03E-04	2.74E-17
Cm-244	1.44E-04	9.80E-18

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: RFETS

Waste Handling: CH non-alpha

6 SIZE_REDUCTION

Thruput Volume	4.18E+02	Thruput Mass	3.34E+06
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	3.67E-06	1.58E-13
Pb-212	9.72E-06	4.18E-13
Bi-212	9.72E-06	4.18E-13
Po-212	6.26E-06	2.69E-13
Po-216	9.72E-06	4.18E-13
Ra-224	9.72E-06	4.18E-13
Ra-228	5.81E-05	2.50E-12
Ac-228	5.81E-05	2.50E-12
Th-228	9.72E-06	4.18E-13
Th-231	5.59E-05	2.40E-12
Th-232	5.90E-04	2.53E-11
Th-234	7.17E-02	3.08E-09
Pa-234	7.35E-06	3.16E-13
Pa-234m	7.17E-02	3.08E-09
U-235	5.57E-05	2.39E-12
U-238	7.17E-02	3.08E-09
Pu-238	5.66E-02	2.43E-09
Pu-239	4.32E-03	1.85E-10
Pu-240	1.51E-02	6.50E-10
Pu-241	2.08E+00	8.96E-08
Am-241	8.64E-05	3.71E-12
Cm-242	1.21E-03	5.20E-11
Cm-244	4.32E-04	1.85E-11

11 PACKAGING

Thruput Volume	7.46E+02	Thruput Mass	2.23E+06
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	6.56E-06	2.82E-13
Pb-212	1.73E-05	7.46E-13
Bi-212	1.73E-05	7.46E-13
Po-212	1.11E-05	4.81E-13
Po-216	1.73E-05	7.46E-13
Ra-224	1.73E-05	7.46E-13
Ra-228	1.03E-04	4.46E-12
Ac-228	1.03E-04	4.46E-12
Th-228	1.73E-05	7.46E-13
Th-231	9.99E-05	4.29E-12
Th-232	1.05E-03	4.53E-11
Th-234	1.28E-01	5.50E-09
Pa-234	1.31E-05	5.64E-13
Pa-234m	1.28E-01	5.50E-09
U-235	9.95E-05	4.28E-12
U-238	1.28E-01	5.50E-09
Pu-238	1.01E-01	4.34E-09
Pu-239	7.71E-03	3.31E-10
Pu-240	2.70E-02	1.16E-09
Pu-241	3.72E+00	1.59E-07
Am-241	1.54E-04	6.63E-12
Cm-242	2.16E-03	9.29E-11
Cm-244	7.71E-04	3.31E-11

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: RFETS

Waste Handling: CH non-alpha

16 TUMULUS	Thruput Volume m3/year	1.06E+03	Thruput Mass kg/year	6.06E+06
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
Tl-208	1.14E-05		6.87E-12	
Pb-212	3.03E-05		1.82E-11	
Bi-212	3.03E-05		1.82E-11	
Po-212	1.95E-05		1.17E-11	
Po-216	3.03E-05		1.82E-11	
Ra-224	3.03E-05		1.82E-11	
Ra-228	1.81E-04		1.08E-10	
Ac-228	1.81E-04		1.08E-10	
Th-228	3.03E-05		1.82E-11	
Th-231	1.74E-04		1.04E-10	
Th-232	1.84E-03		1.10E-09	
Th-234	2.23E-01		1.34E-07	
Pa-234	2.29E-05		1.37E-11	
Pa-234m	2.23E-01		1.34E-07	
U-235	1.73E-04		1.04E-10	
U-238	2.23E-01		1.34E-07	
Pu-238	1.76E-01		1.05E-07	
Pu-239	1.34E-02		8.09E-09	
Pu-240	4.71E-02		2.83E-08	
Pu-241	6.49E+00		3.89E-06	
Am-241	2.69E-04		1.61E-10	
Cm-242	3.77E-03		2.26E-09	
Cm-244	1.34E-03		8.09E-10	

96 CERTIFY_SHIP	Thruput Volume m3/year	9.92E+02	Thruput Mass kg/year	6.06E+06
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
Tl-208	1.14E-05		.	
Pb-212	3.03E-05		.	
Bi-212	3.03E-05		.	
Po-212	1.95E-05		.	
Po-216	3.03E-05		.	
Ra-224	3.03E-05		.	
Ra-228	1.81E-04		.	
Ac-228	1.81E-04		.	
Th-228	3.03E-05		.	
Th-231	1.74E-04		.	
Th-232	1.84E-03		.	
Th-234	2.23E-01		.	
Pa-234	2.29E-05		.	
Pa-234m	2.23E-01		.	
U-235	1.73E-04		.	
U-238	2.23E-01		.	
Pu-238	1.76E-01		.	
Pu-239	1.34E-02		.	
Pu-240	4.71E-02		.	
Pu-241	6.49E+00		.	
Am-241	2.69E-04		.	
Cm-242	3.77E-03		.	
Cm-244	1.34E-03		.	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: RFETS

Waste Handling: CH alpha

21 a-INCINERATION

Thruput Volume	2.79E+03	Thruput Mass	4.19E+05
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	2.45E-05	6.97E-10
Pb-212	6.50E-05	1.84E-09
Bi-212	6.50E-05	1.84E-09
Po-212	4.19E-05	1.19E-09
Po-216	6.50E-05	1.84E-09
Ra-224	6.50E-05	1.84E-09
Ra-228	3.88E-04	1.10E-08
Ac-228	3.88E-04	1.10E-08
Th-228	6.50E-05	1.84E-09
Th-231	3.74E-04	1.06E-08
Th-232	3.94E-03	1.12E-07
Th-234	4.79E-01	1.36E-05
Pa-234	4.91E-05	1.39E-09
Pa-234m	4.79E-01	1.36E-05
U-235	3.72E-04	1.05E-08
U-238	4.79E-01	1.36E-05
Pu-238	3.78E-01	1.07E-05
Pu-239	2.89E-02	8.20E-07
Pu-240	1.01E-01	2.87E-06
Pu-241	1.39E+01	3.95E-04
Am-241	5.78E-04	1.64E-08
Cm-242	8.09E-03	2.29E-07
Cm-244	2.89E-03	8.20E-08

22 a-SOLIDIFICATION

Thruput Volume	1.24E+02	Thruput Mass	1.53E+05
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	2.45E-05	1.67E-18
Pb-212	6.50E-05	4.42E-18
Bi-212	6.50E-05	4.42E-18
Po-212	4.19E-05	2.84E-18
Po-216	6.50E-05	4.42E-18
Ra-224	6.50E-05	4.42E-18
Ra-228	3.88E-04	2.64E-17
Ac-228	3.88E-04	2.64E-17
Th-228	6.50E-05	4.42E-18
Th-231	3.74E-04	2.54E-17
Th-232	3.94E-03	2.68E-16
Th-234	4.79E-01	3.26E-14
Pa-234	4.91E-05	3.34E-18
Pa-234m	4.79E-01	3.26E-14
U-235	3.72E-04	2.53E-17
U-238	4.79E-01	3.26E-14
Pu-238	3.78E-01	2.57E-14
Pu-239	2.89E-02	1.96E-15
Pu-240	1.01E-01	6.87E-15
Pu-241	1.39E+01	9.47E-13
Am-241	5.78E-04	3.93E-17
Cm-242	8.09E-03	5.50E-16
Cm-244	2.89E-03	1.96E-16

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: RFETS

Waste Handling: CH alpha

25 a-SUPERCOMPACTION

Thruput Volume	5.87E+00	Thruput Mass	8.81E+02
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	5.17E-08	7.75E-18
Pb-212	1.36E-07	2.05E-17
Bi-212	1.36E-07	2.05E-17
Po-212	8.82E-08	1.32E-17
Po-216	1.36E-07	2.05E-17
Ra-224	1.36E-07	2.05E-17
Ra-228	8.17E-07	1.22E-16
Ac-228	8.17E-07	1.22E-16
Th-228	1.36E-07	2.05E-17
Th-231	7.87E-07	1.18E-16
Th-232	8.29E-06	1.24E-15
Th-234	1.00E-03	1.51E-13
Pa-234	1.03E-07	1.55E-17
Pa-234m	1.00E-03	1.51E-13
U-235	7.84E-07	1.17E-16
U-238	1.00E-03	1.51E-13
Pu-238	7.96E-04	1.19E-13
Pu-239	6.07E-05	9.11E-15
Pu-240	2.12E-04	3.19E-14
Pu-241	2.93E-02	4.39E-12
Am-241	1.21E-06	1.82E-16
Cm-242	1.70E-05	2.55E-15
Cm-244	6.08E-06	9.12E-16

96 CERTIFY_SHIP

Thruput Volume	1.62E+02	Thruput Mass	4.55E+05
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	2.46E-05	.
Pb-212	6.51E-05	.
Bi-212	6.51E-05	.
Po-212	4.19E-05	.
Po-216	6.51E-05	.
Ra-224	6.51E-05	.
Ra-228	3.89E-04	.
Ac-228	3.89E-04	.
Th-228	6.51E-05	.
Th-231	3.75E-04	.
Th-232	3.95E-03	.
Th-234	4.80E-01	.
Pa-234	4.92E-05	.
Pa-234m	4.80E-01	.
U-235	3.73E-04	.
U-238	4.80E-01	.
Pu-238	3.79E-01	.
Pu-239	2.89E-02	.
Pu-240	1.01E-01	.
Pu-241	1.39E+01	.
Am-241	5.79E-04	.
Cm-242	8.10E-03	.
Cm-244	2.89E-03	.

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Waste Handling: CH non-alpha

1 INCINERATION	Thruput Volume m ³ /year	1.45E+03	Thruput Mass kg/year	2.21E+05
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	3.77E+02		3.70E+02	
Cr-51	9.98E-01		2.83E-05	
Mn-54	1.90E+00		5.39E-05	
Fe-55	7.09E+00		2.01E-04	
Fe-59	6.41E-02		1.82E-06	
Co-58	2.55E+00		7.24E-05	
Co-60	2.00E+01		5.69E-04	
Ni-59	9.16E-02		2.60E-06	
Ni-63	1.31E+01		3.72E-04	
Sr-90	7.69E+00		2.18E-04	
Y-90	7.69E+00		2.18E-04	
Zr-95	7.78E-02		2.21E-06	
Tc-99	1.37E-03		3.90E-08	
Ru-106	7.51E-01		2.13E-05	
Rh-106	7.51E-01		2.13E-05	
Sb-125	2.15E-01		6.12E-06	
Te-125m	5.26E-02		1.49E-06	
Cs-134	8.73E-01		2.48E-05	
Cs-137	8.06E+00		2.28E-04	
Ba-137m	7.63E+00		2.16E-04	
Ce-144	2.51E+00		7.14E-05	
Pr-144	2.51E+00		7.14E-05	
Pr-144m	3.02E-02		8.58E-07	
Pm-147	6.13E+00		1.74E-04	
Sm-151	6.00E-02		1.70E-06	
Eu-152	9.16E-04		2.60E-08	
Eu-154	1.57E-01		4.46E-06	
Eu-155	1.24E-01		3.53E-06	
Tl-208	6.53E-04		1.85E-08	
Pb-212	1.72E-03		4.91E-08	
Bi-212	1.72E-03		4.91E-08	
Po-212	1.11E-03		3.16E-08	
Po-216	1.72E-03		4.91E-08	
Ra-224	1.72E-03		4.91E-08	
Ra-228	1.03E-02		2.93E-07	
Ac-228	1.03E-02		2.93E-07	
Th-228	1.72E-03		4.91E-08	
Th-231	9.95E-03		2.82E-07	
Th-232	1.04E-01		2.97E-06	
Th-234	1.27E+01		3.62E-04	
Pa-234	1.30E-03		3.71E-08	
Pa-234m	1.27E+01		3.62E-04	
U-235	9.91E-03		2.81E-07	
U-238	1.27E+01		3.62E-04	
Pu-238	1.89E-01		5.37E-06	
Pu-239	1.83E-03		5.20E-08	
Pu-240	9.16E-04		2.60E-08	
Pu-241	2.11E-01		6.00E-06	
Am-241	2.74E-03		7.80E-08	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Waste Handling: CH non-alpha

2 SOLIDIFICATION

Thruput Volume
m3/year

2.02E+03

Thruput Mass
kg/year

2.42E+06

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	4.05E+02	6.07E+00
C-14	1.30E-03	8.89E-17
Cr-51	9.98E-01	6.79E-14
Mn-54	2.04E+00	1.39E-13
Fe-55	7.09E+00	4.82E-13
Fe-59	6.41E-02	4.36E-15
Co-58	2.68E+00	1.82E-13
Co-60	2.04E+01	1.39E-12
Ni-59	9.16E-02	6.23E-15
Ni-63	1.31E+01	8.91E-13
Sr-90	7.91E+00	5.38E-13
Y-90	7.91E+00	5.38E-13
Zr-95	7.78E-02	5.29E-15
Tc-99	3.99E-03	2.71E-16
Ru-106	7.54E-01	5.12E-14
Rh-106	7.54E-01	5.12E-14
Sb-125	2.16E-01	1.47E-14
Te-125m	5.28E-02	3.59E-15
Cs-134	1.18E+00	8.03E-14
Cs-137	8.49E+00	5.77E-13
Ba-137m	8.04E+00	5.46E-13
Ce-144	2.52E+00	1.71E-13
Pr-144	2.52E+00	1.71E-13
Pr-144m	3.03E-02	2.06E-15
Pm-147	6.16E+00	4.19E-13
Sm-151	6.02E-02	4.09E-15
Eu-152	9.19E-04	6.25E-17
Eu-154	1.57E-01	1.07E-14
Eu-155	1.25E-01	8.50E-15
Tl-208	6.54E-04	4.44E-17
Pb-212	1.73E-03	1.17E-16
Bi-212	1.73E-03	1.17E-16
Po-212	1.11E-03	7.58E-17
Po-216	1.73E-03	1.17E-16
Ra-224	1.73E-03	1.17E-16
Ra-228	1.03E-02	7.03E-16
Ac-228	1.03E-02	7.03E-16
Th-228	1.73E-03	1.17E-16
Th-231	9.96E-03	6.77E-16
Th-232	1.05E-01	7.14E-15
Th-234	1.27E+01	8.68E-13
Pa-234	1.30E-03	8.89E-17
Pa-234m	1.27E+01	8.68E-13
U-235	9.92E-03	6.74E-16
U-238	1.27E+01	8.69E-13
Pu-238	1.89E-01	1.29E-14
Pu-239	1.83E-03	1.25E-16
Pu-240	9.19E-04	6.25E-17
Pu-241	2.12E-01	1.44E-14
Am-241	2.75E-03	1.87E-16

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Waste Handling: CH non-alpha

5 SUPERCOMPACTION

Thruput Volume 9.38E+03 Thruput Mass 1.40E+06
m3/year kg/year

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.99E+04	2.98E-06
C-14	6.54E-02	9.81E-12
Mn-54	7.36E+00	1.10E-09
Co-58	6.80E+00	1.02E-09
Co-60	1.96E+01	2.94E-09
Ni-63	1.82E-02	2.74E-12
Sr-90	1.08E+01	1.63E-09
Y-90	1.08E+01	1.63E-09
Tc-99	1.31E-01	1.96E-11
Ru-106	1.58E-01	2.38E-11
Rh-106	1.58E-01	2.38E-11
Sb-125	4.55E-02	6.83E-12
Te-125m	1.11E-02	1.66E-12
Cs-134	1.54E+01	2.31E-09
Cs-137	2.18E+01	3.27E-09
Ba-137m	2.06E+01	3.09E-09
Ce-144	5.31E-01	7.96E-11
Pr-144	5.31E-01	7.96E-11
Pr-144m	6.38E-03	9.58E-13
Pm-147	1.29E+00	1.94E-10
Sm-151	1.26E-02	1.90E-12
Eu-152	1.93E-04	2.90E-14
Eu-154	3.31E-02	4.97E-12
Eu-155	2.63E-02	3.94E-12
Tl-208	4.11E-05	6.17E-15
Pb-212	1.08E-04	1.63E-14
Bi-212	1.08E-04	1.63E-14
Po-212	7.01E-05	1.05E-14
Po-216	1.08E-04	1.63E-14
Ra-224	1.08E-04	1.63E-14
Ra-228	6.50E-04	9.76E-14
Ac-228	6.50E-04	9.76E-14
Th-228	1.08E-04	1.63E-14
Th-231	6.26E-04	9.40E-14
Th-232	6.60E-03	9.90E-13
Th-234	8.03E-01	1.20E-10
Pa-234	8.22E-05	1.23E-14
Pa-234m	8.03E-01	1.20E-10
U-235	6.24E-04	9.36E-14
U-238	1.59E+00	2.39E-10
Pu-238	3.99E-02	5.99E-12
Pu-239	3.87E-04	5.80E-14
Pu-240	1.93E-04	2.90E-14
Pu-241	4.47E-02	6.70E-12
Am-241	5.80E-04	8.71E-14

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Waste Handling: CH non-alpha

6 SIZE_REDUCTION	Thruput Volume m3/year	9.15E+02	Thruput Mass kg/year	7.32E+06
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	7.91E-03		3.40E-10	
Co-60	3.76E-02		1.61E-09	
Ni-63	7.48E-02		3.21E-09	
Sr-90	6.65E+00		2.86E-07	
Y-90	6.65E+00		2.86E-07	
Tc-99	1.18E-03		5.10E-11	
Ru-106	6.49E-01		2.79E-08	
Rh-106	6.49E-01		2.79E-08	
Sb-125	1.86E-01		8.01E-09	
Te-125m	4.55E-02		1.95E-09	
Cs-134	7.55E-01		3.24E-08	
Cs-137	6.96E+00		2.99E-07	
Ba-137m	6.59E+00		2.83E-07	
Ce-144	2.17E+00		9.34E-08	
Pr-144	2.17E+00		9.34E-08	
Pr-144m	2.61E-02		1.12E-09	
Pm-147	5.30E+00		2.28E-07	
Sm-151	5.18E-02		2.23E-09	
Eu-152	7.91E-04		3.40E-11	
Eu-154	1.35E-01		5.83E-09	
Eu-155	1.07E-01		4.63E-09	
Tl-208	1.59E-04		6.86E-12	
Pb-212	4.22E-04		1.81E-11	
Bi-212	4.22E-04		1.81E-11	
Po-212	2.72E-04		1.17E-11	
Po-216	4.22E-04		1.81E-11	
Ra-224	4.22E-04		1.81E-11	
Ra-228	2.52E-03		1.08E-10	
Ac-228	2.52E-03		1.08E-10	
Th-228	4.22E-04		1.81E-11	
Th-231	2.43E-03		1.04E-10	
Th-232	2.56E-02		1.10E-09	
Th-234	3.11E+00		1.34E-07	
Pa-234	3.19E-04		1.37E-11	
Pa-234m	3.11E+00		1.34E-07	
U-235	2.42E-03		1.04E-10	
U-238	3.11E+00		1.34E-07	
Pu-238	4.77E-01		2.05E-08	
Pu-239	2.55E-02		1.10E-09	
Pu-240	8.47E-02		3.64E-09	
Pu-241	1.17E+01		5.05E-07	
Am-241	2.85E-03		1.22E-10	
Cm-242	6.72E-03		2.88E-10	
Cm-244	2.40E-03		1.03E-10	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Waste Handling: CH non-alpha

11 PACKAGING

Thruput Volume	3.80E+04	Thruput Mass	1.14E+08
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	4.73E+04	2.03E-03
C-14	1.02E+00	4.39E-08
Cr-51	1.95E+03	8.40E-05
Mn-54	3.83E+03	1.64E-04
Fe-55	1.38E+04	5.96E-04
Fe-59	1.25E+02	5.39E-06
Co-58	5.09E+03	2.19E-04
Co-60	3.94E+04	1.69E-03
Ni-59	1.79E+02	7.70E-06
Ni-63	2.55E+04	1.09E-03
Sr-90	3.53E+03	1.52E-04
Y-90	3.53E+03	1.52E-04
Zr-95	1.52E+02	6.55E-06
Tc-99	2.65E+00	1.14E-07
Ru-106	3.31E+02	1.42E-05
Rh-106	3.31E+02	1.42E-05
Sb-125	9.51E+01	4.09E-06
Te-125m	2.32E+01	9.99E-07
Cs-134	6.23E+02	2.68E-05
Cs-137	3.87E+03	1.66E-04
Ba-137m	3.66E+03	1.57E-04
Ce-144	1.10E+03	4.76E-05
Pr-144	1.10E+03	4.76E-05
Pr-144m	1.33E+01	5.73E-07
Pm-147	2.70E+03	1.16E-04
Sm-151	2.64E+01	1.13E-06
Eu-152	4.04E-01	1.73E-08
Eu-154	6.93E+01	2.97E-06
Eu-155	5.49E+01	2.36E-06
U-238	1.24E+01	5.34E-07
Pu-238	8.38E+01	3.60E-06
Pu-239	8.36E-01	3.59E-08
Pu-240	5.03E-01	2.16E-08
Pu-241	1.07E+02	4.60E-06
Am-241	1.21E+00	5.21E-08
Cm-242	7.95E-03	3.41E-10
Cm-244	2.84E-03	1.22E-10

95 INSPECT_RECEIVE

Thruput Volume	1.27E+02	Thruput Mass	1.91E+04
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.99E+04	

Table D.1 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #2 -- 11 Site Treat -- 12 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Waste Handling: CH non-alpha

96 CERTIFY_SHIP	Thruput Volume m3/year	7.13E+04	Thruput Mass kg/year	1.83E+08
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	6.73E+04		.	
C-14	1.08E+00		.	
Cr-51	1.95E+03		.	
Mn-54	3.84E+03		.	
Fe-55	1.38E+04		.	
Fe-59	1.25E+02		.	
Co-58	5.10E+03		.	
Co-60	3.94E+04		.	
Ni-59	1.79E+02		.	
Ni-63	2.55E+04		.	
Sr-90	3.89E+03		.	
Y-90	3.89E+03		.	
Zr-95	1.52E+02		.	
Tc-99	6.51E+01		.	
Ru-106	3.33E+02		.	
Rh-106	3.33E+02		.	
Sb-125	1.12E+02		.	
Te-125m	2.33E+01		.	
Cs-134	6.40E+02		.	
Cs-137	3.96E+03		.	
Ba-137m	3.74E+03		.	
Ce-144	1.11E+03		.	
Pr-144	1.11E+03		.	
Pr-144m	1.33E+01		.	
Pm-147	3.15E+03		.	
Sm-151	2.65E+01		.	
Eu-152	4.05E-01		.	
Eu-154	6.96E+01		.	
Eu-155	5.52E+01		.	
Tl-208	8.54E-04		.	
Pb-212	2.26E-03		.	
Bi-212	2.26E-03		.	
Po-212	1.45E-03		.	
Po-216	2.26E-03		.	
Ra-224	2.26E-03		.	
Ra-228	1.35E-02		.	
Ac-228	1.35E-02		.	
Th-228	2.26E-03		.	
Th-231	1.30E-02		.	
Th-232	1.37E-01		.	
Th-234	1.66E+01		.	
Pa-234	1.70E-03		.	
Pa-234m	1.66E+01		.	
U-235	1.29E-02		.	
U-238	2.99E+01		.	
Pu-238	8.45E+01		.	
Pu-239	8.64E-01		.	
Pu-240	5.89E-01		.	
Pu-241	1.19E+02		.	
Am-241	1.21E+00		.	
Cm-242	1.46E-02		.	
Cm-244	5.24E-03		.	

Table D.2 Radionuclide Thruput and Air Release by Site and Technology

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal
Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

1 INCINERATION	Thruput Volume m3/year	3.48E+01	Thruput Mass kg/year	7.90E+03
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
H-3	2.86E+04	2.81E+04		
C-14	2.62E-01	2.62E-01		
Cr-51	3.40E-02	9.68E-07		
Mn-54	2.96E+01	8.42E-04		
Fe-55	5.57E-01	1.58E-05		
Fe-59	2.18E-03	6.21E-08		
Co-58	2.74E+01	7.78E-04		
Co-60	7.99E+01	2.27E-03		
Ni-59	3.12E-03	8.88E-08		
Ni-63	4.57E-01	1.29E-05		
Sr-90	3.82E+01	1.08E-03		
Y-90	3.82E+01	1.08E-03		
Zr-95	2.65E-03	7.54E-08		
Tc-99	5.25E-01	1.49E-05		
Ru-106	1.14E-01	3.24E-06		
Rh-106	1.14E-01	3.24E-06		
Sb-125	3.28E-02	9.32E-07		
Te-125m	8.01E-03	2.27E-07		
Cs-134	6.13E+01	1.74E-03		
Cs-137	8.19E+01	2.32E-03		
Ba-137m	7.75E+01	2.20E-03		
Ce-144	3.82E-01	1.08E-05		
Pr-144	3.82E-01	1.08E-05		
Pr-144m	4.59E-03	1.30E-07		
Pm-147	9.33E-01	2.65E-05		
Sm-151	9.13E-03	2.59E-07		
Eu-152	1.39E-04	3.95E-09		
Eu-154	2.39E-02	6.78E-07		
Eu-155	1.89E-02	5.38E-07		
Tl-208	5.51E-06	1.56E-10		
Pb-212	1.46E-05	4.14E-10		
Bi-212	1.46E-05	4.14E-10		
Po-212	9.41E-06	2.67E-10		
Po-216	1.46E-05	4.14E-10		
Ra-224	1.46E-05	4.14E-10		
Ra-228	8.73E-05	2.47E-09		
Ac-228	8.73E-05	2.47E-09		
Th-228	1.46E-05	4.14E-10		
Th-231	8.40E-05	2.38E-09		
Th-232	8.86E-04	2.51E-08		
Th-234	1.07E-01	3.06E-06		
Pa-234	1.10E-05	3.13E-10		
Pa-234m	1.07E-01	3.06E-06		
U-235	8.37E-05	2.37E-09		
U-238	3.30E+00	9.38E-05		
Pu-238	3.00E-02	8.54E-07		
Pu-239	3.78E-04	1.07E-08		
Pu-240	4.89E-04	1.39E-08		
Pu-241	8.04E-02	2.28E-06		
Am-241	4.20E-04	1.19E-08		
Cm-242	2.80E-05	7.95E-10		
Cm-244	1.00E-05	2.84E-10		

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal					
Waste Stream: LLW					
Treatment Site: Hanford			Waste Handling: CH non-alpha		
2 SOLIDIFICATION	Thruput Volume m3/year	5.53E+01	Thruput Mass kg/year	6.40E+04	
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
	H-3	6.29E+02	9.44E+00		
	C-14	1.29E-02	8.78E-16		
	Cr-51	9.05E-01	6.15E-14		
	Mn-54	3.27E+01	2.22E-12		
	Fe-55	6.74E+00	4.58E-13		
	Fe-59	5.81E-02	3.95E-15		
	Co-58	3.09E+01	2.10E-12		
	Co-60	1.01E+02	6.89E-12		
	Ni-59	8.30E-02	5.64E-15		
	Ni-63	1.21E+01	8.26E-13		
	Sr-90	6.98E+01	4.74E-12		
	Y-90	6.98E+01	4.74E-12		
	Zr-95	7.06E-02	4.80E-15		
	Tc-99	5.56E-01	3.78E-14		
	Ru-106	3.01E+00	2.05E-13		
	Rh-106	3.01E+00	2.05E-13		
	Sb-125	8.66E-01	5.88E-14		
	Te-125m	2.11E-01	1.43E-14		
	Cs-134	6.76E+01	4.60E-12		
	Cs-137	1.17E+02	7.95E-12		
	Ba-137m	1.10E+02	7.52E-12		
	Ce-144	1.00E+01	6.86E-13		
	Pr-144	1.00E+01	6.86E-13		
	Pr-144m	1.21E-01	8.25E-15		
	Pm-147	2.46E+01	1.67E-12		
	Sm-151	2.40E-01	1.63E-14		
	Eu-152	3.67E-03	2.50E-16		
	Eu-154	6.30E-01	4.28E-14		
	Eu-155	5.00E-01	3.40E-14		
	Tl-208	9.68E-06	6.58E-19		
	Pb-212	2.56E-05	1.74E-18		
	Bi-212	2.56E-05	1.74E-18		
	Po-212	1.65E-05	1.12E-18		
	Po-216	2.56E-05	1.74E-18		
	Ra-224	2.56E-05	1.74E-18		
	Ra-228	1.53E-04	1.04E-17		
	Ac-228	1.53E-04	1.04E-17		
	Th-228	2.56E-05	1.74E-18		
	Th-231	1.47E-04	1.00E-17		
	Th-232	1.55E-03	1.05E-16		
	Th-234	1.89E-01	1.28E-14		
	Pa-234	1.93E-05	1.31E-18		
	Pa-234m	1.89E-01	1.28E-14		
	U-235	1.46E-04	9.99E-18		
	U-238	3.53E+00	2.40E-13		
	Pu-238	7.60E-01	5.17E-14		
	Pu-239	7.47E-03	5.08E-16		
	Pu-240	4.10E-03	2.78E-16		
	Pu-241	9.07E-01	6.17E-14		
	Am-241	1.10E-02	7.50E-16		
	Cm-242	3.39E-05	2.30E-18		
	Cm-244	2.11E-01	1.43E-14		

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

5 SUPERCOMPACTION	Thruput Volume m ³ /year	4.94E+03	Thruput Mass kg/year	7.41E+05
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	7.11E+03		1.06E-06	
C-14	6.33E-01		9.49E-11	
Cr-51	3.11E+01		4.66E-09	
Mn-54	1.30E+02		1.95E-08	
Fe-55	2.21E+02		3.31E-08	
Fe-59	1.99E+00		2.99E-10	
Co-58	1.45E+02		2.18E-08	
Co-60	8.19E+02		1.22E-07	
Ni-59	2.85E+00		4.28E-10	
Ni-63	4.17E+02		6.26E-08	
Sr-90	1.15E+03		1.72E-07	
Y-90	1.15E+03		1.72E-07	
Zr-95	2.42E+00		3.64E-10	
Tc-99	1.45E+00		2.18E-10	
Ru-106	1.03E+02		1.55E-08	
Rh-106	1.03E+02		1.55E-08	
Sb-125	2.97E+01		4.46E-09	
Te-125m	7.26E+00		1.08E-09	
Cs-134	2.67E+02		4.01E-08	
Cs-137	1.30E+03		1.95E-07	
Ba-137m	1.23E+03		1.85E-07	
Ce-144	3.46E+02		5.20E-08	
Pr-144	3.46E+02		5.20E-08	
Pr-144m	4.16E+00		6.25E-10	
Pm-147	8.46E+02		1.26E-07	
Sm-151	8.27E+00		1.24E-09	
Eu-152	1.26E-01		1.89E-11	
Eu-154	2.16E+01		3.25E-09	
Eu-155	1.71E+01		2.57E-09	
Tl-208	1.48E-04		2.23E-14	
Pb-212	3.93E-04		5.90E-14	
Bi-212	3.93E-04		5.90E-14	
Po-212	2.53E-04		3.80E-14	
Po-216	3.93E-04		5.90E-14	
Ra-224	3.93E-04		5.90E-14	
Ra-228	2.35E-03		3.53E-13	
Ac-228	2.35E-03		3.53E-13	
Th-228	3.93E-04		5.90E-14	
Th-231	2.26E-03		3.39E-13	
Th-232	2.38E-02		3.58E-12	
Th-234	2.90E+00		4.35E-10	
Pa-234	2.97E-04		4.46E-14	
Pa-234m	2.90E+00		4.35E-10	
U-235	2.25E-03		3.38E-13	
U-238	1.06E+01		1.59E-09	
Pu-238	2.61E+01		3.91E-09	
Pu-239	2.53E-01		3.80E-11	
Pu-240	1.30E-01		1.95E-11	
Pu-241	2.96E+01		4.45E-09	
Am-241	3.79E-01		5.68E-11	
Cm-242	2.96E-04		4.45E-14	
Cm-244	1.05E+01		1.58E-09	

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

6 SIZE_REDUCTION	Thruput Volume m3/year	3.15E+03	Thruput Mass kg/year	2.52E+07
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
H-3	4.13E+03	1.77E-04		
C-14	1.90E-04	8.19E-12		
Cr-51	4.93E+01	2.12E-06		
Mn-54	9.40E+01	4.04E-06		
Fe-55	3.50E+02	1.50E-05		
Fe-59	3.17E+00	1.36E-07		
Co-58	1.26E+02	5.42E-06		
Co-60	9.93E+02	4.27E-05		
Ni-59	4.53E+00	1.94E-07		
Ni-63	6.51E+02	2.80E-05		
Sr-90	6.59E+02	2.83E-05		
Y-90	6.59E+02	2.83E-05		
Zr-95	3.85E+00	1.65E-07		
Tc-99	1.18E-01	5.07E-09		
Ru-106	6.43E+01	2.76E-06		
Rh-106	6.43E+01	2.76E-06		
Sb-125	1.84E+01	7.94E-07		
Te-125m	4.51E+00	1.93E-07		
Cs-134	7.48E+01	3.21E-06		
Cs-137	6.90E+02	2.96E-05		
Ba-137m	6.53E+02	2.81E-05		
Ce-144	2.15E+02	9.26E-06		
Pr-144	2.15E+02	9.26E-06		
Pr-144m	2.58E+00	1.11E-07		
Pm-147	5.25E+02	2.26E-05		
Sm-151	5.13E+00	2.20E-07		
Eu-152	7.84E-02	3.37E-09		
Eu-154	1.34E+01	5.78E-07		
Eu-155	1.06E+01	4.58E-07		
Tl-208	9.23E-05	3.97E-12		
Pb-212	2.44E-04	1.05E-11		
Bi-212	2.44E-04	1.05E-11		
Po-212	1.57E-04	6.77E-12		
Po-216	2.44E-04	1.05E-11		
Ra-224	2.44E-04	1.05E-11		
Ra-228	1.46E-03	6.28E-11		
Ac-228	1.46E-03	6.28E-11		
Th-228	2.44E-04	1.05E-11		
Th-231	1.40E-03	6.05E-11		
Th-232	1.48E-02	6.37E-10		
Th-234	1.80E+00	7.75E-08		
Pa-234	1.84E-04	7.94E-12		
Pa-234m	1.80E+00	7.75E-08		
U-235	1.40E-03	6.02E-11		
U-238	1.80E+00	7.76E-08		
Pu-238	1.62E+01	6.96E-07		
Pu-239	1.57E-01	6.77E-09		
Pu-240	8.06E-02	3.46E-09		
Pu-241	1.84E+01	7.92E-07		
Am-241	2.35E-01	1.01E-08		
Cm-242	1.77E-04	7.65E-12		
Cm-244	6.35E-05	2.73E-12		

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal			
Waste Stream: LLW			
Treatment Site: Hanford		Waste Handling: CH non-alpha	
11 PACKAGING	Thruput Volume m ³ /year	9.14E+02	Thruput Mass kg/year 2.74E+06
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
	H-3	2.31E+00	9.94E-08
	Cr-51	5.89E+00	2.53E-07
	Mn-54	1.12E+01	4.82E-07
	Fe-55	4.19E+01	1.80E-06
	Fe-59	3.78E-01	1.62E-08
	Co-58	1.50E+01	6.48E-07
	Co-60	1.19E+02	5.13E-06
	Ni-59	5.41E-01	2.32E-08
	Ni-63	7.91E+01	3.40E-06
	Sr-90	2.01E+02	8.65E-06
	Y-90	2.01E+02	8.65E-06
	Zr-95	4.60E-01	1.97E-08
	Tc-99	3.59E-02	1.54E-09
	Ru-106	1.96E+01	8.44E-07
	Rh-106	1.96E+01	8.44E-07
	Sb-125	5.64E+00	2.42E-07
	Te-125m	1.37E+00	5.92E-08
	Cs-134	2.28E+01	9.81E-07
	Cs-137	2.10E+02	9.06E-06
	Ba-137m	1.99E+02	8.57E-06
	Ce-144	6.57E+01	2.82E-06
	Pr-144	6.57E+01	2.82E-06
	Pr-144m	7.90E-01	3.39E-08
	Pm-147	1.60E+02	6.89E-06
	Sm-151	1.56E+00	6.74E-08
	Eu-152	2.39E-02	1.02E-09
	Eu-154	4.10E+00	1.76E-07
	Eu-155	3.25E+00	1.40E-07
	Tl-208	2.82E-05	1.21E-12
	Pb-212	7.46E-05	3.20E-12
	Bi-212	7.46E-05	3.20E-12
	Po-212	4.81E-05	2.06E-12
	Po-216	7.46E-05	3.20E-12
	Ra-224	7.46E-05	3.20E-12
	Ra-228	4.46E-04	1.91E-11
	Ac-228	4.46E-04	1.91E-11
	Th-228	7.46E-05	3.20E-12
	Th-231	4.29E-04	1.84E-11
	Th-232	4.52E-03	1.94E-10
	Th-234	5.50E-01	2.36E-08
	Pa-234	5.64E-05	2.42E-12
	Pa-234m	5.50E-01	2.36E-08
	U-235	4.27E-04	1.84E-11
	U-238	5.50E-01	2.36E-08
	Pu-238	4.94E+00	2.12E-07
	Pu-239	4.78E-02	2.05E-09
	Pu-240	2.39E-02	1.02E-09
	Pu-241	5.53E+00	2.37E-07
	Am-241	7.18E-02	3.08E-09

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal
Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

95 INSPECT_RECEIVE	Thruput Volume m ³ /year	2.21E+02	Thruput Mass kg/year	6.26E+05
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	3.99E+04		.	
C-14	8.95E-01		.	
Cr-51	6.32E-02		.	
Mn-54	1.01E+02		.	
Fe-55	7.64E-01		.	
Fe-59	4.06E-03		.	
Co-58	9.33E+01		.	
Co-60	2.70E+02		.	
Ni-59	5.80E-03		.	
Ni-63	8.26E-01		.	
Sr-90	1.26E+02		.	
Y-90	1.26E+02		.	
Zr-95	4.93E-03		.	
Tc-99	1.79E+00		.	
Ru-106	1.47E-02		.	
Rh-106	1.47E-02		.	
Sb-125	4.22E-03		.	
Te-125m	1.03E-03		.	
Cs-134	2.08E+02		.	
Cs-137	2.75E+02		.	
Ba-137m	2.60E+02		.	
Ce-144	4.92E-02		.	
Pr-144	4.92E-02		.	
Pr-144m	5.92E-04		.	
Pm-147	1.20E-01		.	
Sm-151	1.17E-03		.	
Eu-152	1.79E-05		.	
Eu-154	3.07E-03		.	
Eu-155	2.44E-03		.	
Tl-208	5.35E-06		.	
Pb-212	1.41E-05		.	
Bi-212	1.41E-05		.	
Po-212	9.13E-06		.	
Po-216	1.41E-05		.	
Ra-224	1.41E-05		.	
Ra-228	8.47E-05		.	
Ac-228	8.47E-05		.	
Th-228	1.41E-05		.	
Th-231	8.15E-05		.	
Th-232	8.59E-04		.	
Th-234	1.04E-01		.	
Pa-234	1.07E-05		.	
Pa-234m	1.04E-01		.	
U-235	8.12E-05		.	
U-238	1.10E+01		.	
Pu-238	2.72E-02		.	
Pu-239	1.83E-03		.	
Pu-240	6.30E-03		.	
Pu-241	8.69E-01		.	
Am-241	8.97E-05		.	
Cm-242	5.02E-04		.	
Cm-244	1.05E+01		.	

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

96 CERTIFY_SHIP	Thruput Volume m3/year	2.32E+04	Thruput Mass kg/year	6.70E+07
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	1.17E+04		.	
C-14	6.33E-01		.	
Cr-51	8.66E+01		.	
Mn-54	2.65E+02		.	
Fe-55	6.16E+02		.	
Fe-59	5.56E+00		.	
Co-58	3.14E+02		.	
Co-60	2.01E+03		.	
Ni-59	7.95E+00		.	
Ni-63	1.15E+03		.	
Sr-90	1.63E+05		.	
Y-90	1.63E+05		.	
Zr-95	6.75E+00		.	
Tc-99	2.13E+00		.	
Ru-106	2.53E+05		.	
Rh-106	2.53E+05		.	
Sb-125	5.41E+01		.	
Te-125m	1.32E+01		.	
Cs-134	4.27E+02		.	
Cs-137	5.48E+06		.	
Ba-137m	5.18E+06		.	
Ce-144	6.31E+02		.	
Pr-144	6.31E+02		.	
Pr-144m	7.58E+00		.	
Pm-147	1.54E+03		.	
Sm-151	1.50E+01		.	
Eu-152	2.29E-01		.	
Eu-154	3.94E+01		.	
Eu-155	3.12E+01		.	
Tl-208	2.76E-04		.	
Pb-212	7.30E-04		.	
Bi-212	7.30E-04		.	
Po-212	4.70E-04		.	
Po-216	7.30E-04		.	
Ra-224	7.30E-04		.	
Ra-228	4.36E-03		.	
Ac-228	4.36E-03		.	
Th-228	7.30E-04		.	
Th-231	4.20E-03		.	
Th-232	4.43E-02		.	
Th-234	5.39E+00		.	
Pa-234	5.52E-04		.	
Pa-234m	5.39E+00		.	
U-235	4.18E-03		.	
U-238	1.62E+01		.	
Pu-238	4.74E+01		.	
Pu-239	4.61E-01		.	
Pu-240	2.36E-01		.	
Pu-241	5.39E+01		.	
Am-241	6.89E-01		.	
Cm-242	5.02E-04		.	
Cm-244	1.05E+01		.	

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal
Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH non-alpha

1 INCINERATION

Thruput Volume Thruput Mass
m3/year 1.70E+03 kg/year 2.56E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.97E-04	1.93E-04
Cr-51	3.17E-01	9.02E-06
Mn-54	6.05E-01	1.71E-05
Fe-55	2.25E+00	6.41E-05
Fe-59	2.04E-02	5.79E-07
Co-58	8.12E-01	2.30E-05
Co-60	6.36E+00	1.80E-04
Ni-59	2.91E-02	8.28E-07
Ni-63	4.14E+00	1.17E-04
Sr-90	1.65E-01	4.70E-06
Y-90	1.65E-01	4.70E-06
Zr-95	2.47E-02	7.03E-07
Tc-99	2.95E-05	8.39E-10
Ru-106	1.61E-02	4.59E-07
Rh-106	1.61E-02	4.59E-07
Sb-125	4.64E-03	1.31E-07
Te-125m	1.13E-03	3.21E-08
Cs-134	1.87E-02	5.33E-07
Cs-137	1.73E-01	4.92E-06
Ba-137m	1.64E-01	4.66E-06
Ce-144	5.41E-02	1.53E-06
Pr-144	5.41E-02	1.53E-06
Pr-144m	6.50E-04	1.84E-08
Pm-147	1.32E-01	3.75E-06
Sm-151	1.29E-03	3.66E-08
Eu-152	1.97E-05	5.59E-10
Eu-154	3.38E-03	9.60E-08
Eu-155	2.68E-03	7.61E-08
Pu-238	4.07E-03	1.15E-07
Pu-239	3.94E-05	1.11E-09
Pu-240	1.97E-05	5.59E-10
Pu-241	4.55E-03	1.29E-07
Am-241	5.91E-05	1.67E-09

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH non-alpha

2 SOLIDIFICATION

Nuclide	Thruput Volume m3/year	1.01E+03	Thruput Mass kg/year	1.21E+06
	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	1.52E+00		2.29E-02	
Cr-51	3.18E-01		2.16E-14	
Mn-54	6.06E-01		4.12E-14	
Fe-55	2.26E+00		1.53E-13	
Fe-59	2.04E-02		1.39E-15	
Co-58	8.13E-01		5.53E-14	
Co-60	6.37E+00		4.33E-13	
Ni-59	2.92E-02		1.98E-15	
Ni-63	4.15E+00		2.82E-13	
Sr-90	1.66E-01		1.13E-14	
Y-90	1.66E-01		1.13E-14	
Zr-95	2.48E-02		1.68E-15	
Tc-99	2.96E-05		2.01E-18	
Ru-106	1.62E-02		1.10E-15	
Rh-106	1.62E-02		1.10E-15	
Sb-125	4.66E-03		3.17E-16	
Te-125m	1.13E-03		7.73E-17	
Cs-134	1.88E-02		1.28E-15	
Cs-137	1.74E-01		1.18E-14	
Ba-137m	1.64E-01		1.12E-14	
Ce-144	5.43E-02		3.69E-15	
Pr-144	5.43E-02		3.69E-15	
Pr-144m	6.53E-04		4.44E-17	
Pm-147	1.32E-01		9.01E-15	
Sm-151	1.29E-03		8.81E-17	
Eu-152	1.97E-05		1.34E-18	
Eu-154	3.39E-03		2.30E-16	
Eu-155	2.69E-03		1.83E-16	
Pu-238	4.08E-03		2.77E-16	
Pu-239	3.95E-05		2.69E-18	
Pu-240	1.98E-05		1.34E-18	
Pu-241	4.57E-03		3.11E-16	
Am-241	5.93E-05		4.03E-18	
Cm-242	1.00E-09		6.80E-23	
Cm-244	3.00E-10		2.00E-23	

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH non-alpha

5 SUPERCOMPACTION

Thruput Volume
m3/year

6.82E+02

Thruput Mass

kg/year

1.02E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	4.02E-05	6.04E-15
Cr-51	2.71E-02	4.06E-12
Mn-54	5.16E-02	7.74E-12
Fe-55	1.92E-01	2.89E-11
Fe-59	1.74E-03	2.61E-13
Co-58	6.92E-02	1.03E-11
Co-60	5.43E-01	8.15E-11
Ni-59	2.48E-03	3.73E-13
Ni-63	3.53E-01	5.30E-11
Sr-90	3.38E-02	5.07E-12
Y-90	3.38E-02	5.07E-12
Zr-95	2.11E-03	3.17E-13
Tc-99	6.04E-06	9.06E-16
Ru-106	3.30E-03	4.95E-13
Rh-106	3.30E-03	4.95E-13
Sb-125	9.48E-04	1.42E-13
Te-125m	2.31E-04	3.47E-14
Cs-134	3.84E-03	5.76E-13
Cs-137	3.54E-02	5.31E-12
Ba-137m	3.35E-02	5.03E-12
Ce-144	1.10E-02	1.65E-12
Pr-144	1.10E-02	1.65E-12
Pr-144m	1.32E-04	1.99E-14
Pm-147	2.69E-02	4.04E-12
Sm-151	2.63E-04	3.95E-14
Eu-152	4.02E-06	6.04E-16
Eu-154	6.90E-04	1.03E-13
Eu-155	5.47E-04	8.21E-14
Pu-238	8.34E-04	1.25E-13
Pu-239	8.23E-06	1.23E-15
Pu-240	4.63E-06	6.95E-16
Pu-241	1.01E-03	1.52E-13
Am-241	1.20E-05	1.81E-15
Cm-242	4.88E-08	7.32E-18
Cm-244	1.74E-08	2.61E-18

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH non-alpha

6 SIZE_REDUCTION	Thruput Volume m3/year	2.07E+03	Thruput Mass kg/year	1.66E+07
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
H-3	1.39E-05	6.00E-13		
Cr-51	2.31E+03	9.95E-05		
Mn-54	4.40E+03	1.89E-04		
Fe-55	1.64E+04	7.07E-04		
Fe-59	1.48E+02	6.39E-06		
Co-58	5.91E+03	2.54E-04		
Co-60	4.63E+04	1.99E-03		
Ni-59	2.12E+02	9.13E-06		
Ni-63	3.01E+04	1.29E-03		
Sr-90	1.17E-02	5.04E-10		
Y-90	1.17E-02	5.04E-10		
Zr-95	1.80E+02	7.76E-06		
Tc-99	2.09E-06	9.01E-14		
Ru-106	1.14E-03	4.92E-11		
Rh-106	1.14E-03	4.92E-11		
Sb-125	3.29E-04	1.41E-11		
Te-125m	8.03E-05	3.45E-12		
Cs-134	1.33E-03	5.72E-11		
Cs-137	2.11E-01	9.08E-09		
Ba-137m	2.10E-01	9.05E-09		
Ce-144	3.83E-03	1.64E-10		
Pr-144	3.83E-03	1.64E-10		
Pr-144m	4.61E-05	1.98E-12		
Pm-147	9.36E-03	4.02E-10		
Sm-151	9.15E-05	3.93E-12		
Eu-152	1.39E-06	6.00E-14		
Eu-154	2.39E-04	1.03E-11		
Eu-155	1.90E-04	8.17E-12		
Pu-238	2.88E-04	1.24E-11		
Pu-239	2.79E-06	1.20E-13		
Pu-240	1.39E-06	6.00E-14		
Pu-241	3.22E-04	1.38E-11		
Am-241	4.19E-06	1.80E-13		
10 AQUEOUS	Thruput Volume m3/year	2.48E+06	Thruput Mass kg/year	2.48E+09
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
H-3	1.69E+02	1.69E-01		

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH non-alpha

11 PACKAGING

Thruput Volume
m3/year 1.90E+03Thruput Mass
kg/year 5.70E+06

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	5.95E-02	2.55E-09
Cr-51	1.01E+02	4.37E-06
Mn-54	1.93E+02	8.32E-06
Fe-55	7.22E+02	3.10E-05
Fe-59	6.52E+00	2.80E-07
Co-58	2.59E+02	1.11E-05
Co-60	2.03E+03	8.75E-05
Ni-59	9.32E+00	4.00E-07
Ni-63	1.32E+03	5.70E-05
Sr-90	4.99E+01	2.14E-06
Y-90	4.99E+01	2.14E-06
Zr-95	7.92E+00	3.40E-07
Tc-99	8.92E-03	3.83E-10
Ru-106	4.87E+00	2.09E-07
Rh-106	4.87E+00	2.09E-07
Sb-125	1.40E+00	6.02E-08
Te-125m	3.42E-01	1.47E-08
Cs-134	5.67E+00	2.43E-07
Cs-137	5.23E+01	2.25E-06
Ba-137m	4.95E+01	2.13E-06
Ce-144	1.63E+01	7.02E-07
Pr-144	1.63E+01	7.02E-07
Pr-144m	1.96E-01	8.44E-09
Pm-147	3.98E+01	1.71E-06
Sm-151	3.89E-01	1.67E-08
Eu-152	5.95E-03	2.55E-10
Eu-154	1.02E+00	4.38E-08
Eu-155	8.09E-01	3.48E-08
Pu-238	1.22E+00	5.28E-08
Pu-239	1.19E-02	5.11E-10
Pu-240	5.95E-03	2.55E-10
Pu-241	1.37E+00	5.91E-08
Am-241	1.78E-02	7.67E-10

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH non-alpha

17 DISCHARGE	Thruput Volume m3/year	2.48E+06	Thruput Mass kg/year	2.48E+09
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
	H-3	1.68E+02	.	
95 INSPECT_RECEIVE	Thruput Volume m3/year	1.38E+03	Thruput Mass kg/year	9.60E+06
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
	H-3	3.94E-05	.	
	Cr-51	2.31E+03	.	
	Mn-54	4.40E+03	.	
	Fe-55	1.64E+04	.	
	Fe-59	1.48E+02	.	
	Co-58	5.91E+03	.	
	Co-60	4.63E+04	.	
	Ni-59	2.12E+02	.	
	Ni-63	3.01E+04	.	
	Sr-90	3.31E-02	.	
	Y-90	3.31E-02	.	
	Zr-95	1.80E+02	.	
	Tc-99	5.91E-06	.	
	Ru-106	3.23E-03	.	
	Rh-106	3.23E-03	.	
	Sb-125	9.29E-04	.	
	Te-125m	2.26E-04	.	
	Cs-134	3.76E-03	.	
	Cs-137	2.33E-01	.	
	Ba-137m	2.31E-01	.	
	Ce-144	1.08E-02	.	
	Pr-144	1.08E-02	.	
	Pr-144m	1.30E-04	.	
	Pm-147	2.64E-02	.	
	Sm-151	2.58E-04	.	
	Eu-152	3.94E-06	.	
	Eu-154	6.76E-04	.	
	Eu-155	5.36E-04	.	
	Pu-238	8.17E-04	.	
	Pu-239	8.06E-06	.	
	Pu-240	4.55E-06	.	
	Pu-241	9.95E-04	.	
	Am-241	1.18E-05	.	
	Cm-242	4.88E-08	.	
	Cm-244	1.74E-08	.	

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal			
Waste Stream: LLW			
Treatment Site: INEL		Waste Handling: CH non-alpha	
96 CERTIFY_SHIP	Thruput Volume m3/year	3.63E+03	Thruput Mass kg/year 2.60E+07
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
	H-3	1.56E+00	.
	Cr-51	2.41E+03	.
	Mn-54	4.60E+03	.
	Fe-55	1.71E+04	.
	Fe-59	1.55E+02	.
	Co-58	6.17E+03	.
	Co-60	4.84E+04	.
	Ni-59	2.21E+02	.
	Ni-63	3.15E+04	.
	Sr-90	5.01E+01	.
	Y-90	5.01E+01	.
	Zr-95	1.88E+02	.
	Tc-99	8.96E-03	.
	Ru-106	4.90E+00	.
	Rh-106	4.90E+00	.
	Sb-125	1.40E+00	.
	Te-125m	3.43E-01	.
	Cs-134	5.69E+00	.
	Cs-137	5.27E+01	.
	Ba-137m	4.99E+01	.
	Ce-144	1.64E+01	.
	Pr-144	1.64E+01	.
	Pr-144m	1.97E-01	.
	Pm-147	4.00E+01	.
	Sm-151	3.91E-01	.
	Eu-152	5.97E-03	.
	Eu-154	1.02E+00	.
	Eu-155	8.12E-01	.
	Pu-238	1.23E+00	.
	Pu-239	1.19E-02	.
	Pu-240	5.97E-03	.
	Pu-241	1.38E+00	.
	Am-241	1.79E-02	.
	Cm-242	4.88E-08	.
	Cm-244	1.74E-08	.

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: LANL

Waste Handling: CH non-alpha

1 INCINERATION

Thruput Volume
m3/year

5.62E+03

Thruput Mass

kg/year

8.43E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	3.60E-02	3.54E-02
Cr-51	4.64E-03	1.31E-07
Mn-54	8.83E-03	2.51E-07
Fe-55	3.29E-02	9.37E-07
Fe-59	2.98E-04	8.46E-09
Co-58	1.18E-02	3.36E-07
Co-60	2.54E-01	7.23E-06
Ni-59	4.26E-04	1.20E-08
Ni-63	3.82E-01	1.08E-05
Sr-90	2.86E+01	8.12E-04
Y-90	2.86E+01	8.12E-04
Zr-95	3.62E-04	1.02E-08
Tc-99	5.10E-03	1.45E-07
Ru-106	2.79E+00	7.92E-05
Rh-106	2.79E+00	7.92E-05
Sb-125	8.01E-01	2.27E-05
Te-125m	1.95E-01	5.56E-06
Cs-134	3.24E+00	9.22E-05
Cs-137	2.99E+01	8.50E-04
Ba-137m	2.83E+01	8.05E-04
Ce-144	9.34E+00	2.65E-04
Pr-144	9.34E+00	2.65E-04
Pr-144m	1.12E-01	3.19E-06
Pm-147	2.28E+01	6.47E-04
Sm-151	2.23E-01	6.33E-06
Eu-152	3.40E-03	9.66E-08
Eu-154	5.83E-01	1.65E-05
Eu-155	4.63E-01	1.31E-05
Tl-208	1.66E-02	4.74E-07
Pb-212	4.41E-02	1.25E-06
Bi-212	4.41E-02	1.25E-06
Po-212	2.84E-02	8.08E-07
Po-216	4.41E-02	1.25E-06
Ra-224	4.41E-02	1.25E-06
Ra-228	2.64E-01	7.50E-06
Ac-228	2.64E-01	7.50E-06
Th-228	4.41E-02	1.25E-06
Th-231	2.54E-01	7.22E-06
Th-232	2.68E+00	7.61E-05
Th-234	3.25E+02	9.25E-03
Pa-234	3.33E-02	9.48E-07
Pa-234m	3.25E+02	9.25E-03
U-235	2.53E-01	7.19E-06
U-238	3.25E+02	9.25E-03
Pu-238	5.17E+00	1.46E-04
Pu-239	3.47E-01	9.87E-06
Pu-240	1.19E+00	3.39E-05
Pu-241	1.65E+02	4.69E-03
Am-241	1.70E-02	4.83E-07
Cm-242	9.54E-02	2.71E-06
Cm-244	3.41E-02	9.68E-07

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: LANL

Waste Handling: CH non-alpha

2 SOLIDIFICATION

Thruput Volume
m3/year

2.65E+02

Thruput Mass
kg/year

3.23E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	7.68E+03	1.15E+02
C-14	3.67E-03	2.49E-16
Cr-51	4.64E-03	3.15E-16
Mn-54	4.22E-01	2.87E-14
Fe-55	3.29E-02	2.24E-15
Fe-59	2.98E-04	2.02E-17
Co-58	3.93E-01	2.67E-14
Co-60	8.67E+00	5.89E-13
Ni-59	4.25E-04	2.89E-17
Ni-63	1.49E+01	1.01E-12
Sr-90	1.32E+03	8.99E-11
Y-90	1.32E+03	8.99E-11
Zr-95	3.62E-04	2.46E-17
Tc-99	2.43E-01	1.65E-14
Ru-106	1.29E+02	8.77E-12
Rh-106	1.29E+02	8.77E-12
Sb-125	3.70E+01	2.52E-12
Te-125m	9.04E+00	6.15E-13
Cs-134	1.50E+02	1.02E-11
Cs-137	1.38E+03	9.42E-11
Ba-137m	1.31E+03	8.92E-11
Ce-144	4.31E+02	2.93E-11
Pr-144	4.31E+02	2.93E-11
Pr-144m	5.19E+00	3.53E-13
Pm-147	1.05E+03	7.16E-11
Sm-151	1.03E+01	7.00E-13
Eu-152	1.57E-01	1.07E-14
Eu-154	2.69E+01	1.83E-12
Eu-155	2.14E+01	1.45E-12
Tl-208	1.66E-02	1.13E-15
Pb-212	4.41E-02	3.00E-15
Bi-212	4.41E-02	3.00E-15
Po-212	2.84E-02	1.93E-15
Po-216	4.41E-02	3.00E-15
Ra-224	4.41E-02	3.00E-15
Ra-228	2.64E-01	1.79E-14
Ac-228	2.64E-01	1.79E-14
Th-228	4.41E-02	3.00E-15
Th-231	2.54E-01	1.72E-14
Th-232	2.68E+00	1.82E-13
Th-234	3.25E+02	2.21E-11
Pa-234	3.33E-02	2.27E-15
Pa-234m	3.25E+02	2.21E-11
U-235	2.53E-01	1.72E-14
U-238	3.26E+02	2.21E-11
Pu-238	3.69E+01	2.51E-12
Pu-239	6.55E-01	4.46E-14
Pu-240	1.35E+00	9.19E-14
Pu-241	2.00E+02	1.36E-11
Am-241	4.78E-01	3.25E-14
Cm-242	9.55E-02	6.49E-15
Cm-244	3.41E-02	2.32E-15

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal			
Waste Stream: LLW			
Treatment Site: LANL			
Waste Handling: CH non-alpha			
5 SUPERCOMPACTION	Thruput Volume m ³ /year	5.05E+03	Thruput Mass kg/year 7.58E+05
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
	H-3	3.84E+05	5.76E-05
	C-14	1.83E-01	2.75E-11
	Mn-54	2.06E+01	3.10E-09
	Co-58	1.90E+01	2.86E-09
	Co-60	4.20E+02	6.31E-08
	Ni-63	7.27E+02	1.09E-07
	Sr-90	6.46E+04	9.70E-06
	Y-90	6.46E+04	9.70E-06
	Tc-99	1.19E+01	1.78E-09
	Ru-106	6.31E+03	9.46E-07
	Rh-106	6.31E+03	9.46E-07
	Sb-125	1.81E+03	2.71E-07
	Te-125m	4.42E+02	6.63E-08
	Cs-134	7.38E+03	1.10E-06
	Cs-137	6.78E+04	1.01E-05
	Ba-137m	6.41E+04	9.62E-06
	Ce-144	2.11E+04	3.16E-06
	Pr-144	2.11E+04	3.16E-06
	Pr-144m	2.54E+02	3.81E-08
	Pm-147	5.15E+04	7.73E-06
	Sm-151	5.04E+02	7.56E-08
	Eu-152	7.69E+00	1.15E-09
	Eu-154	1.32E+03	1.98E-07
	Eu-155	1.04E+03	1.57E-07
	Tl-208	1.43E-05	2.15E-15
	Pb-212	3.80E-05	5.71E-15
	Bi-212	3.80E-05	5.71E-15
	Po-212	2.45E-05	3.68E-15
	Po-216	3.80E-05	5.71E-15
	Ra-224	3.80E-05	5.71E-15
	Ra-228	2.27E-04	3.41E-14
	Ac-228	2.27E-04	3.41E-14
	Th-228	3.80E-05	5.71E-15
	Th-231	2.19E-04	3.28E-14
	Th-232	2.31E-03	3.46E-13
	Th-234	2.80E-01	4.21E-11
	Pa-234	2.87E-05	4.31E-15
	Pa-234m	2.80E-01	4.21E-11
	U-235	2.18E-04	3.27E-14
	U-238	2.51E+00	3.77E-10
	Pu-238	1.58E+03	2.38E-07
	Pu-239	1.54E+01	2.31E-09
	Pu-240	7.73E+00	1.16E-09
	Pu-241	1.78E+03	2.67E-07
	Am-241	2.30E+01	3.46E-09
	Cm-242	2.91E-03	4.36E-13
	Cm-244	1.04E-03	1.56E-13

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: LANL

Waste Handling: CH non-alpha

6 SIZE_REDUCTION

Thruput Volume	4.63E+03	Thruput Mass	3.70E+07
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.09E+02	9.02E-06
Cr-51	2.42E+01	1.04E-06
Mn-54	4.62E+01	1.98E-06
Fe-55	1.72E+02	7.42E-06
Fe-59	1.55E+00	6.70E-08
Co-58	6.20E+01	2.66E-06
Co-60	4.86E+02	2.09E-05
Ni-59	2.22E+00	9.58E-08
Ni-63	3.16E+02	1.36E-05
Zr-95	1.89E+00	8.14E-08
Tl-208	2.03E-04	8.74E-12
Pb-212	5.38E-04	2.31E-11
Bi-212	5.38E-04	2.31E-11
Po-212	3.47E-04	1.49E-11
Po-216	5.38E-04	2.31E-11
Ra-224	5.38E-04	2.31E-11
Ra-228	3.21E-03	1.38E-10
Ac-228	3.21E-03	1.38E-10
Th-228	5.38E-04	2.31E-11
Th-231	3.09E-03	1.33E-10
Th-232	3.26E-02	1.40E-09
Th-234	3.97E+00	1.70E-07
Pa-234	4.06E-04	1.74E-11
Pa-234m	3.97E+00	1.70E-07
U-235	3.08E-03	1.32E-10
U-238	3.97E+00	1.70E-07

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: LANL

Waste Handling: CH non-alpha

11 PACKAGING

Thruput Volume
m3/year

3.56E+03

Thruput Mass
kg/year

1.06E+07

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	8.11E-02	3.49E-09
Cr-51	5.92E+00	2.54E-07
Mn-54	1.12E+01	4.85E-07
Fe-55	4.21E+01	1.81E-06
Fe-59	3.80E-01	1.63E-08
Co-58	1.51E+01	6.51E-07
Co-60	1.19E+02	5.12E-06
Ni-59	5.44E-01	2.33E-08
Ni-63	7.80E+01	3.35E-06
Sr-90	6.81E+01	2.93E-06
Y-90	6.81E+01	2.93E-06
Zr-95	4.62E-01	1.98E-08
Tc-99	1.21E-02	5.23E-10
Ru-106	6.65E+00	2.86E-07
Rh-106	6.65E+00	2.86E-07
Sb-125	1.91E+00	8.22E-08
Te-125m	4.66E-01	2.00E-08
Cs-134	7.74E+00	3.32E-07
Cs-137	7.14E+01	3.07E-06
Ba-137m	6.76E+01	2.90E-06
Ce-144	2.22E+01	9.58E-07
Pr-144	2.22E+01	9.58E-07
Pr-144m	2.67E-01	1.15E-08
Pm-147	5.43E+01	2.33E-06
Sm-151	5.31E-01	2.28E-08
Eu-152	8.11E-03	3.49E-10
Eu-154	1.39E+00	5.98E-08
Eu-155	1.10E+00	4.74E-08
Tl-208	5.27E-07	2.26E-14
Pb-212	1.39E-06	5.99E-14
Bi-212	1.39E-06	5.99E-14
Po-212	8.99E-07	3.86E-14
Po-216	1.39E-06	5.99E-14
Ra-224	1.39E-06	5.99E-14
Ra-228	8.33E-06	3.58E-13
Ac-228	8.33E-06	3.58E-13
Th-228	1.39E-06	5.99E-14
Th-231	8.02E-06	3.45E-13
Th-232	8.46E-05	3.63E-12
Th-234	1.02E-02	4.42E-10
Pa-234	1.05E-06	4.53E-14
Pa-234m	1.02E-02	4.42E-10
U-235	7.99E-06	3.43E-13
U-238	1.02E-02	4.42E-10
Pu-238	1.67E+00	7.21E-08
Pu-239	1.63E-02	7.02E-10
Pu-240	8.47E-03	3.64E-10
Pu-241	1.92E+00	8.27E-08
Am-241	2.43E-02	1.04E-09
Cm-242	2.83E-05	1.21E-12
Cm-244	1.01E-05	4.35E-13

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: LANL

Waste Handling: CH non-alpha

95 INSPECT_RECEIVE	Thruput Volume m3/year	3.89E+03	Thruput Mass kg/year	2.85E+07
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	2.28E+02		.	
C-14	1.83E-01		.	
Cr-51	6.54E-04		.	
Mn-54	2.06E+01		.	
Fe-55	4.64E-03		.	
Fe-59	4.20E-05		.	
Co-58	1.90E+01		.	
Co-60	5.51E+01		.	
Ni-59	6.00E-05		.	
Ni-63	8.53E-03		.	
Sr-90	2.59E+01		.	
Y-90	2.59E+01		.	
Zr-95	5.10E-05		.	
Tc-99	3.67E-01		.	
Cs-134	4.27E+01		.	
Cs-137	5.64E+01		.	
Ba-137m	5.33E+01		.	
Tl-208	2.17E-04		.	
Pb-212	5.76E-04		.	
Bi-212	5.76E-04		.	
Po-212	3.71E-04		.	
Po-216	5.76E-04		.	
Ra-224	5.76E-04		.	
Ra-228	3.44E-03		.	
Ac-228	3.44E-03		.	
Th-228	5.76E-04		.	
Th-231	3.31E-03		.	
Th-232	3.49E-02		.	
Th-234	4.25E+00		.	
Pa-234	4.35E-04		.	
Pa-234m	4.25E+00		.	
U-235	3.30E-03		.	
U-238	6.48E+00		.	

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: LANL

Waste Handling: CH non-alpha

96 CERTIFY_SHIP	Thruput Volume	Thruput Mass	
	m3/year	5.18E+03	kg/year 4.94E+07
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
H-3	3.84E+05	.	
C-14	1.83E-01	.	
Cr-51	3.02E+01	.	
Mn-54	7.82E+01	.	
Fe-55	2.14E+02	.	
Fe-59	1.94E+00	.	
Co-58	9.63E+01	.	
Co-60	1.02E+03	.	
Ni-59	2.77E+00	.	
Ni-63	1.12E+03	.	
Sr-90	6.47E+04	.	
Y-90	6.47E+04	.	
Zr-95	2.35E+00	.	
Tc-99	1.19E+01	.	
Ru-106	6.32E+03	.	
Rh-106	6.32E+03	.	
Sb-125	1.81E+03	.	
Te-125m	4.43E+02	.	
Cs-134	7.39E+03	.	
Cs-137	6.79E+04	.	
Ba-137m	6.42E+04	.	
Ce-144	2.11E+04	.	
Pr-144	2.11E+04	.	
Pr-144m	2.54E+02	.	
Pm-147	5.16E+04	.	
Sm-151	5.04E+02	.	
Eu-152	7.70E+00	.	
Eu-154	1.32E+03	.	
Eu-155	1.04E+03	.	
Tl-208	1.69E-02	.	
Pb-212	4.47E-02	.	
Bi-212	4.47E-02	.	
Po-212	2.88E-02	.	
Po-216	4.47E-02	.	
Ra-224	4.47E-02	.	
Ra-228	2.67E-01	.	
Ac-228	2.67E-01	.	
Th-228	4.47E-02	.	
Th-231	2.57E-01	.	
Th-232	2.71E+00	.	
Th-234	3.30E+02	.	
Pa-234	3.38E-02	.	
Pa-234m	3.30E+02	.	
U-235	2.56E-01	.	
U-238	3.32E+02	.	
Pu-238	1.59E+03	.	
Pu-239	1.57E+01	.	
Pu-240	8.94E+00	.	
Pu-241	1.95E+03	.	
Am-241	2.31E+01	.	
Cm-242	9.84E-02	.	
Cm-244	3.51E-02	.	

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: LANL

Waste Handling: CH alpha

13 SHALLOW_LAND_BU	Thruput Volume	Thruput Mass
	m3/year 1.78E+02	kg/year 4.55E+05
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	2.46E-05	1.47E-11
Pb-212	6.51E-05	3.91E-11
Bi-212	6.51E-05	3.91E-11
Po-212	4.19E-05	2.51E-11
Po-216	6.51E-05	3.91E-11
Ra-224	6.51E-05	3.91E-11
Ra-228	3.89E-04	2.33E-10
Ac-228	3.89E-04	2.33E-10
Th-228	6.51E-05	3.91E-11
Th-231	3.75E-04	2.25E-10
Th-232	3.95E-03	2.37E-09
Th-234	4.80E-01	2.88E-07
Pa-234	4.92E-05	2.95E-11
Pa-234m	4.80E-01	2.88E-07
U-235	3.73E-04	2.24E-10
U-238	4.80E-01	2.88E-07
Pu-238	3.79E-01	2.27E-07
Pu-239	2.89E-02	1.73E-08
Pu-240	1.01E-01	6.08E-08
Pu-241	1.39E+01	8.37E-06
Am-241	5.79E-04	3.47E-10
Cm-242	8.10E-03	4.86E-09
Cm-244	2.89E-03	1.73E-09

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal			
Waste Stream: LLW			
Treatment Site: ORR		Waste Handling: CH_non-alpha	
1 INCINERATION	Thruput Volume m ³ /year	5.95E+03	Thruput Mass kg/year 8.92E+05
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
	H-3	1.24E-01	1.22E-01
	C-14	6.09E-03	6.08E-03
	Mn-54	6.86E-01	1.95E-05
	Co-58	6.33E-01	1.80E-05
	Co-60	1.83E+00	5.20E-05
	Sr-90	8.61E-01	2.44E-05
	Y-90	8.61E-01	2.44E-05
	Tc-99	1.22E-02	3.46E-07
	Cs-134	1.42E+00	4.03E-05
	Cs-137	1.87E+00	5.32E-05
	Ba-137m	1.77E+00	5.03E-05
	Tl-208	7.62E-05	2.16E-09
	Pb-212	2.02E-04	5.73E-09
	Bi-212	2.02E-04	5.73E-09
	Po-212	1.30E-04	3.69E-09
	Po-216	2.02E-04	5.73E-09
	Ra-224	2.02E-04	5.73E-09
	Ra-228	1.21E-03	3.43E-08
	Ac-228	1.21E-03	3.43E-08
	Th-228	2.02E-04	5.73E-09
	Th-231	1.16E-03	3.30E-08
	Th-232	1.22E-02	3.48E-07
	Th-234	1.49E+00	4.23E-05
	Pa-234	1.52E-04	4.33E-09
	Pa-234m	1.49E+00	4.23E-05
	U-235	1.16E-03	3.29E-08
	U-238	1.56E+00	4.44E-05

Table D.2 Radionuclide Thruput and Air Release by Site and Technology---Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: ORR

Waste Handling: CH_non-alpha

2 SOLIDIFICATION

Thruput Volume m ³ /year	3.35E+02	Thruput Mass kg/year	4.11E+05
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
H-3	2.11E-03	3.16E-05	
C-14	6.09E-06	4.14E-19	
Cr-51	2.22E-06	1.51E-19	
Mn-54	6.86E-01	4.67E-14	
Fe-55	1.58E-05	1.07E-18	
Fe-59	1.43E-07	9.71E-21	
Co-58	6.33E-01	4.31E-14	
Co-60	1.83E+00	1.24E-13	
Ni-59	2.04E-07	1.39E-20	
Ni-63	2.92E-05	1.99E-18	
Sr-90	8.61E-01	5.85E-14	
Y-90	8.61E-01	5.85E-14	
Zr-95	1.73E-07	1.18E-20	
Tc-99	1.22E-02	8.28E-16	
Ru-106	1.67E-06	1.14E-19	
Rh-106	1.67E-06	1.14E-19	
Sb-125	4.80E-07	3.27E-20	
Te-125m	1.17E-07	7.97E-21	
Cs-134	1.42E+00	9.65E-14	
Cs-137	1.87E+00	1.27E-13	
Ba-137m	1.77E+00	1.20E-13	
Ce-144	5.60E-06	3.81E-19	
Pr-144	5.60E-06	3.81E-19	
Pr-144m	6.73E-08	4.58E-21	
Pm-147	1.37E-05	9.29E-19	
Sm-151	1.34E-07	9.08E-21	
Eu-152	2.04E-09	1.39E-22	
Eu-154	3.50E-07	2.38E-20	
Eu-155	2.77E-07	1.89E-20	
Tl-208	9.42E-05	6.41E-18	
Pb-212	2.49E-04	1.70E-17	
Bi-212	2.49E-04	1.70E-17	
Po-212	1.61E-04	1.09E-17	
Po-216	2.49E-04	1.70E-17	
Ra-224	2.49E-04	1.70E-17	
Ra-228	1.49E-03	1.01E-16	
Ac-228	1.49E-03	1.01E-16	
Th-228	2.49E-04	1.70E-17	
Th-231	1.44E-03	9.76E-17	
Th-232	1.51E-02	1.03E-15	
Th-234	1.84E+00	1.25E-13	
Pa-234	1.88E-04	1.28E-17	
Pa-234m	1.84E+00	1.25E-13	
U-235	1.43E-03	9.72E-17	
U-238	1.91E+00	1.30E-13	
Pu-238	2.77E-02	1.88E-15	
Pu-239	2.11E-03	1.44E-16	
Pu-240	7.39E-03	5.03E-16	
Pu-241	1.02E+00	6.92E-14	
Am-241	4.22E-05	2.87E-18	
Cm-242	5.91E-04	4.02E-17	
Cm-244	2.11E-04	1.44E-17	

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: ORR

Waste Handling: CH_non-alpha

5 SUPERCOMPACTION

Thruput Volume
m3/year

2.09E+02

Thruput Mass
kg/year

3.14E+04

Nuclide

Activity
(Ci/yr)Air Release
(Ci/yr)

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.02E-06	1.53E-16
Cr-51	1.11E-04	1.67E-14
Mn-54	2.12E-04	3.17E-14
Fe-55	7.90E-04	1.18E-13
Fe-59	7.14E-06	1.07E-15
Co-58	2.84E-04	4.26E-14
Co-60	2.23E-03	3.35E-13
Ni-59	1.02E-05	1.53E-15
Ni-63	1.46E-03	2.19E-13
Sr-90	8.57E-04	1.28E-13
Y-90	8.57E-04	1.28E-13
Zr-95	8.67E-06	1.30E-15
Tc-99	1.53E-07	2.29E-17
Ru-106	8.36E-05	1.25E-14
Rh-106	8.36E-05	1.25E-14
Sb-125	2.40E-05	3.60E-15
Te-125m	5.86E-06	8.80E-16
Cs-134	9.72E-05	1.46E-14
Cs-137	8.97E-04	1.35E-13
Ba-137m	8.49E-04	1.27E-13
Ce-144	2.80E-04	4.20E-14
Pr-144	2.80E-04	4.20E-14
Pr-144m	3.37E-06	5.05E-16
Pm-147	6.83E-04	1.02E-13
Sm-151	6.68E-06	1.00E-15
Eu-152	1.02E-07	1.53E-17
Eu-154	1.75E-05	2.62E-15
Eu-155	1.39E-05	2.08E-15
Tl-208	1.78E-06	2.67E-16
Pb-212	4.71E-06	7.06E-16
Bi-212	4.71E-06	7.06E-16
Po-212	3.03E-06	4.55E-16
Po-216	4.71E-06	7.06E-16
Ra-224	4.71E-06	7.06E-16
Ra-228	2.81E-05	4.22E-15
Ac-228	2.81E-05	4.22E-15
Th-228	4.71E-06	7.06E-16
Th-231	2.71E-05	4.06E-15
Th-232	2.86E-04	4.28E-14
Th-234	3.47E-02	5.21E-12
Pa-234	3.56E-06	5.34E-16
Pa-234m	3.47E-02	5.21E-12
U-235	2.70E-05	4.05E-15
U-238	3.47E-02	5.21E-12
Pu-238	2.11E-05	3.16E-15
Pu-239	2.04E-07	3.06E-17
Pu-240	1.02E-07	1.53E-17
Pu-241	2.36E-05	3.53E-15
Am-241	3.06E-07	4.59E-17

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: ORR

Waste Handling: CH_non-alpha

6 SIZE_REDUCTION

Thruput Volume m3/year	1.06E+04	Thruput Mass kg/year	8.47E+07
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
Tl-208	1.61E-04	6.90E-12	
Pb-212	4.25E-04	1.83E-11	
Bi-212	4.25E-04	1.83E-11	
Po-212	2.74E-04	1.18E-11	
Po-216	4.25E-04	1.83E-11	
Ra-224	4.25E-04	1.83E-11	
Ra-228	2.54E-03	1.09E-10	
Ac-228	2.54E-03	1.09E-10	
Th-228	4.25E-04	1.83E-11	
Th-231	2.45E-03	1.05E-10	
Th-232	2.58E-02	1.11E-09	
Th-234	3.14E+00	1.35E-07	
Pa-234	3.21E-04	1.38E-11	
Pa-234m	3.14E+00	1.35E-07	
U-235	2.44E-03	1.05E-10	
U-238	3.14E+00	1.35E-07	

11 PACKAGING

Thruput Volume m3/year	6.73E+02	Thruput Mass kg/year	2.02E+06
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
H-3	9.74E-01	4.19E-08	
Co-60	4.63E+00	1.99E-07	
Ni-63	9.20E+00	3.96E-07	
Sr-90	8.18E+02	3.52E-05	
Y-90	8.18E+02	3.52E-05	
Tc-99	1.46E-01	6.28E-09	
Ru-106	7.99E+01	3.43E-06	
Rh-106	7.99E+01	3.43E-06	
Sb-125	2.29E+01	9.86E-07	
Te-125m	5.60E+00	2.41E-07	
Cs-134	9.29E+01	3.99E-06	
Cs-137	8.57E+02	3.69E-05	
Ba-137m	8.11E+02	3.49E-05	
Ce-144	2.67E+02	1.15E-05	
Pr-144	2.67E+02	1.15E-05	
Pr-144m	3.21E+00	1.38E-07	
Pm-147	6.52E+02	2.81E-05	
Sm-151	6.38E+00	2.74E-07	
Eu-152	9.74E-02	4.19E-09	
Eu-154	1.67E+01	7.18E-07	
Eu-155	1.32E+01	5.70E-07	
Pu-238	2.01E+01	8.65E-07	
Pu-239	1.95E-01	8.38E-09	
Pu-240	9.74E-02	4.19E-09	
Pu-241	2.25E+01	9.67E-07	
Am-241	2.92E-01	1.26E-08	

95 INSPECT_RECEIVE

Thruput Volume m3/year	1.66E+04	Thruput Mass kg/year	8.56E+07
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
Tl-208	2.39E-04	.	
Pb-212	6.31E-04	.	
Bi-212	6.31E-04	.	
Po-212	4.07E-04	.	
Po-216	6.31E-04	.	
Ra-224	6.31E-04	.	
Ra-228	3.77E-03	.	
Ac-228	3.77E-03	.	
Th-228	6.31E-04	.	
Th-231	3.63E-03	.	
Th-232	3.83E-02	.	
Th-234	4.66E+00	.	
Pa-234	4.77E-04	.	
Pa-234m	4.66E+00	.	
U-235	3.62E-03	.	
U-238	4.66E+00	.	

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal				
Waste Stream: LLW				
Treatment Site: ORR				
Waste Handling: CH_non-alpha				
96 CERTIFY_SHIP	Thruput Volume m3/year	4.95E+03	Thruput Mass kg/year	9.04E+07
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
	H-3	9.66E+01	.	
	C-14	4.70E+00	.	
	Cr-51	1.11E-04	.	
	Mn-54	5.31E+02	.	
	Fe-55	7.90E-04	.	
	Fe-59	7.14E-06	.	
	Co-58	4.90E+02	.	
	Co-60	1.42E+03	.	
	Ni-59	1.02E-05	.	
	Ni-63	9.20E+00	.	
	Sr-90	1.48E+03	.	
	Y-90	1.48E+03	.	
	Zr-95	8.67E-06	.	
	Tc-99	9.57E+00	.	
	Ru-106	7.99E+01	.	
	Rh-106	7.99E+01	.	
	Sb-125	2.29E+01	.	
	Te-125m	5.60E+00	.	
	Cs-134	1.19E+03	.	
	Cs-137	2.31E+03	.	
	Ba-137m	2.18E+03	.	
	Ce-144	2.67E+02	.	
	Pr-144	2.67E+02	.	
	Pr-144m	3.21E+00	.	
	Pm-147	6.52E+02	.	
	Sm-151	6.38E+00	.	
	Eu-152	9.74E-02	.	
	Eu-154	1.67E+01	.	
	Eu-155	1.32E+01	.	
	Tl-208	2.57E-04	.	
	Pb-212	6.79E-04	.	
	Bi-212	6.79E-04	.	
	Po-212	4.38E-04	.	
	Po-216	6.79E-04	.	
	Ra-224	6.79E-04	.	
	Ra-228	4.06E-03	.	
	Ac-228	4.06E-03	.	
	Th-228	6.79E-04	.	
	Th-231	3.91E-03	.	
	Th-232	4.12E-02	.	
	Th-234	5.01E+00	.	
	Pa-234	5.13E-04	.	
	Pa-234m	5.01E+00	.	
	U-235	3.89E-03	.	
	U-238	6.23E+01	.	
	Pu-238	2.01E+01	.	
	Pu-239	1.97E-01	.	
	Pu-240	1.05E-01	.	
	Pu-241	2.35E+01	.	
	Am-241	2.92E-01	.	
	Cm-242	5.91E-04	.	
	Cm-244	2.11E-04	.	

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: PORTS

Waste Handling: CH non-alpha

1 INCINERATION

Thruput Volume
m³/year 2.30E+03 Thruput Mass
kg/year 4.65E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.34E+04	1.31E+04
Tl-208	5.10E-07	1.44E-11
Pb-212	1.35E-06	3.83E-11
Bi-212	1.35E-06	3.83E-11
Po-212	8.70E-07	2.47E-11
Po-216	1.35E-06	3.83E-11
Ra-224	1.35E-06	3.83E-11
Ra-228	8.07E-06	2.29E-10
Ac-228	8.07E-06	2.29E-10
Th-228	1.35E-06	3.83E-11
Th-231	7.77E-06	2.20E-10
Th-232	8.19E-05	2.32E-09
Th-234	9.96E-03	2.82E-07
Pa-234	1.02E-06	2.89E-11
Pa-234m	9.96E-03	2.82E-07
U-235	7.74E-06	2.19E-10
U-238	9.96E-03	2.82E-07
Pu-238	4.36E-05	1.24E-09
Pu-239	3.33E-06	9.46E-11
Pu-240	1.16E-05	3.31E-10
Pu-241	1.60E-03	4.56E-08
Am-241	6.67E-08	1.89E-12
Cm-242	9.33E-07	2.65E-11
Cm-244	3.33E-07	9.46E-12

2 SOLIDIFICATION

Thruput Volume
m³/year 1.62E+02 Thruput Mass
kg/year 2.23E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.27E+02	3.41E+00
Cr-51	1.72E-04	1.17E-17
Mn-54	3.28E-04	2.23E-17
Fe-55	1.22E-03	8.34E-17
Fe-59	1.10E-05	7.54E-19
Co-58	4.41E-04	3.00E-17
Co-60	3.46E-03	2.35E-16
Ni-59	1.58E-05	1.07E-18
Ni-63	2.25E-03	1.53E-16
Zr-95	1.34E-05	9.16E-19
Tl-208	5.31E-07	3.61E-20
Pb-212	1.40E-06	9.56E-20
Bi-212	1.40E-06	9.56E-20
Po-212	9.06E-07	6.16E-20
Po-216	1.40E-06	9.56E-20
Ra-224	1.40E-06	9.56E-20
Ra-228	8.40E-06	5.71E-19
Ac-228	8.40E-06	5.71E-19
Th-228	1.40E-06	9.56E-20
Th-231	8.09E-06	5.50E-19
Th-232	8.53E-05	5.80E-18
Th-234	1.03E-02	7.05E-16
Pa-234	1.06E-06	7.22E-20
Pa-234m	1.03E-02	7.05E-16
U-235	8.06E-06	5.48E-19
U-238	1.03E-02	7.05E-16
Pu-238	4.36E-05	2.96E-18
Pu-239	3.33E-06	2.26E-19
Pu-240	1.16E-05	7.93E-19
Pu-241	1.60E-03	1.09E-16
Am-241	6.67E-08	4.52E-21
Cm-242	9.33E-07	6.34E-20
Cm-244	3.33E-07	2.26E-20

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: PORTS

Waste Handling: CH non-alpha

5 SUPERCOMPACTION

Thruput Volume
m3/year

9.69E+01

Thruput Mass

kg/year

1.45E+04

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.76E-01	4.14E-11
Cr-51	8.63E-03	1.29E-12
Mn-54	1.64E-02	2.46E-12
Fe-55	6.13E-02	9.20E-12
Fe-59	5.54E-04	8.32E-14
Co-58	2.20E-02	3.31E-12
Co-60	1.73E-01	2.59E-11
Ni-59	7.92E-04	1.18E-13
Ni-63	1.12E-01	1.68E-11
Zr-95	6.73E-04	1.01E-13
Tl-208	2.96E-07	4.44E-17
Pb-212	7.84E-07	1.17E-16
Bi-212	7.84E-07	1.17E-16
Po-212	5.05E-07	7.58E-17
Po-216	7.84E-07	1.17E-16
Ra-224	7.84E-07	1.17E-16
Ra-228	4.68E-06	7.03E-16
Ac-228	4.68E-06	7.03E-16
Th-228	7.84E-07	1.17E-16
Th-231	4.51E-06	6.77E-16
Th-232	4.75E-05	7.13E-15
Th-234	5.78E-03	8.67E-13
Pa-234	5.92E-07	8.88E-17
Pa-234m	5.78E-03	8.67E-13
U-235	4.49E-06	6.74E-16
U-238	5.78E-03	8.67E-13

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal				
Waste Stream: LLW				
Treatment Site: PORTS		Waste Handling: CH non-alpha		
6 SIZE_REDUCTION	Thruput Volume m3/year	1.09E+04	Thruput Mass kg/year	8.75E+07
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)	
	H-3	5.15E-04	2.21E-11	
	C-14	2.40E-05	1.03E-12	
	Cr-51	1.60E+04	6.91E-04	
	Mn-54	3.06E+04	1.31E-03	
	Fe-55	1.14E+05	4.91E-03	
	Fe-59	1.03E+03	4.44E-05	
	Co-58	4.11E+04	1.76E-03	
	Co-60	3.22E+05	1.38E-02	
	Ni-59	1.47E+03	6.34E-05	
	Ni-63	2.09E+05	9.02E-03	
	Sr-90	2.62E-02	1.12E-09	
	Y-90	2.62E-02	1.12E-09	
	Zr-95	1.25E+03	5.39E-05	
	Tc-99	5.20E-05	2.23E-12	
	Ru-106	2.22E-03	9.58E-11	
	Rh-106	2.22E-03	9.58E-11	
	Sb-125	6.40E-04	2.75E-11	
	Te-125m	1.56E-04	6.72E-12	
	Cs-134	8.18E-03	3.51E-10	
	Cs-137	3.13E-02	1.34E-09	
	Ba-137m	2.96E-02	1.27E-09	
	Ce-144	7.46E-03	3.20E-10	
	Pr-144	7.46E-03	3.20E-10	
	Pr-144m	8.97E-05	3.85E-12	
	Pm-147	1.82E-02	7.83E-10	
	Sm-151	1.78E-04	7.65E-12	
	Eu-152	2.71E-06	1.16E-13	
	Eu-154	4.66E-04	2.00E-11	
	Eu-155	3.69E-04	1.59E-11	
	Tl-208	3.01E-06	1.29E-13	
	Pb-212	7.98E-06	3.43E-13	
	Bi-212	7.98E-06	3.43E-13	
	Po-212	5.14E-06	2.21E-13	
	Po-216	7.98E-06	3.43E-13	
	Ra-224	7.98E-06	3.43E-13	
	Ra-228	4.77E-05	2.05E-12	
	Ac-228	4.77E-05	2.05E-12	
	Th-228	7.98E-06	3.43E-13	
	Th-231	4.59E-05	1.97E-12	
	Th-232	4.84E-04	2.08E-11	
	Th-234	5.89E-02	2.53E-09	
	Pa-234	6.03E-06	2.59E-13	
	Pa-234m	5.89E-02	2.53E-09	
	U-235	4.58E-05	1.96E-12	
	U-238	5.92E-02	2.54E-09	
	Pu-238	5.61E-04	2.41E-11	
	Pu-239	5.43E-06	2.33E-13	
	Pu-240	2.71E-06	1.16E-13	
	Pu-241	6.28E-04	2.70E-11	
	Am-241	8.15E-06	3.50E-13	

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: PORTS

Waste Handling: CH non-alpha

95 INSPECT_RECEIVE	Thruput Volume m3/year	3.66E+03	Thruput Mass kg/year	2.07E+07
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
H-3	1.34E+04	.		
C-14	2.40E-05	.		
Cr-51	1.60E+04	.		
Mn-54	3.06E+04	.		
Fe-55	1.14E+05	.		
Fe-59	1.03E+03	.		
Co-58	4.11E+04	.		
Co-60	3.22E+05	.		
Ni-59	1.47E+03	.		
Ni-63	2.09E+05	.		
Sr-90	2.62E-02	.		
Y-90	2.62E-02	.		
Zr-95	1.25E+03	.		
Tc-99	5.20E-05	.		
Ru-106	2.22E-03	.		
Rh-106	2.22E-03	.		
Sb-125	6.40E-04	.		
Te-125m	1.56E-04	.		
Cs-134	8.18E-03	.		
Cs-137	3.13E-02	.		
Ba-137m	2.96E-02	.		
Ce-144	7.46E-03	.		
Pr-144	7.46E-03	.		
Pr-144m	8.97E-05	.		
Pm-147	1.82E-02	.		
Sm-151	1.78E-04	.		
Eu-152	2.71E-06	.		
Eu-154	4.66E-04	.		
Eu-155	3.69E-04	.		
Tl-208	3.83E-07	.		
Pb-212	1.01E-06	.		
Bi-212	1.01E-06	.		
Po-212	6.54E-07	.		
Po-216	1.01E-06	.		
Ra-224	1.01E-06	.		
Ra-228	6.07E-06	.		
Ac-228	6.07E-06	.		
Th-228	1.01E-06	.		
Th-231	5.84E-06	.		
Th-232	6.16E-05	.		
Th-234	7.49E-03	.		
Pa-234	7.67E-07	.		
Pa-234m	7.49E-03	.		
U-235	5.82E-06	.		
U-238	7.78E-03	.		
Pu-238	6.05E-04	.		
Pu-239	8.77E-06	.		
Pu-240	1.43E-05	.		
Pu-241	2.23E-03	.		
Am-241	8.22E-06	.		
Cm-242	9.33E-07	.		
Cm-244	3.33E-07	.		

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: PORTS

Waste Handling: CH non-alpha

96 CERTIFY_SHIP	Thruput Volume m3/year	2.04E+03	Thruput Mass kg/year	8.82E+07
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	2.24E+02		.	
C-14	2.40E-05		.	
Cr-51	1.60E+04		.	
Mn-54	3.06E+04		.	
Fe-55	1.14E+05		.	
Fe-59	1.03E+03		.	
Co-58	4.11E+04		.	
Co-60	3.22E+05		.	
Ni-59	1.47E+03		.	
Ni-63	2.09E+05		.	
Sr-90	2.62E-02		.	
Y-90	2.62E-02		.	
Zr-95	1.25E+03		.	
Tc-99	5.20E-05		.	
Ru-106	2.22E-03		.	
Rh-106	2.22E-03		.	
Sb-125	6.40E-04		.	
Te-125m	1.56E-04		.	
Cs-134	8.18E-03		.	
Cs-137	3.13E-02		.	
Ba-137m	2.96E-02		.	
Ce-144	7.46E-03		.	
Pr-144	7.46E-03		.	
Pr-144m	8.97E-05		.	
Pm-147	1.82E-02		.	
Sm-151	1.78E-04		.	
Eu-152	2.71E-06		.	
Eu-154	4.66E-04		.	
Eu-155	3.69E-04		.	
Tl-208	3.83E-06		.	
Pb-212	1.01E-05		.	
Bi-212	1.01E-05		.	
Po-212	6.55E-06		.	
Po-216	1.01E-05		.	
Ra-224	1.01E-05		.	
Ra-228	6.07E-05		.	
Ac-228	6.07E-05		.	
Th-228	1.01E-05		.	
Th-231	5.85E-05		.	
Th-232	6.16E-04		.	
Th-234	7.49E-02		.	
Pa-234	7.68E-06		.	
Pa-234m	7.49E-02		.	
U-235	5.82E-05		.	
U-238	7.52E-02		.	
Pu-238	6.05E-04		.	
Pu-239	8.77E-06		.	
Pu-240	1.43E-05		.	
Pu-241	2.23E-03		.	
Am-241	8.22E-06		.	
Cm-242	9.33E-07		.	
Cm-244	3.33E-07		.	

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: RFETS

Waste Handling: CH non-alpha

1 INCINERATION

Thruput Volume 3.99E+00 Thruput Mass 3.67E+03
m3/year kg/year

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	3.51E-08	9.96E-13
Pb-212	9.29E-08	2.63E-12
Bi-212	9.29E-08	2.63E-12
Po-212	5.99E-08	1.70E-12
Po-216	9.29E-08	2.63E-12
Ra-224	9.29E-08	2.63E-12
Ra-228	5.55E-07	1.57E-11
Ac-228	5.55E-07	1.57E-11
Th-228	9.29E-08	2.63E-12
Th-231	5.34E-07	1.51E-11
Th-232	5.63E-06	1.60E-10
Th-234	6.85E-04	1.94E-08
Pa-234	7.02E-08	1.99E-12
Pa-234m	6.85E-04	1.94E-08
U-235	5.32E-07	1.51E-11
U-238	6.85E-04	1.94E-08
Pu-238	5.41E-04	1.53E-08
Pu-239	4.13E-05	1.17E-09
Pu-240	1.44E-04	4.10E-09
Pu-241	1.99E-02	5.65E-07
Am-241	8.26E-07	2.34E-11
Cm-242	1.15E-05	3.28E-10
Cm-244	4.13E-06	1.17E-10

2 SOLIDIFICATION

Thruput Volume 1.36E+02 Thruput Mass 1.63E+05
m3/year kg/year

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	1.22E-06	8.33E-20
Pb-212	3.24E-06	2.20E-19
Bi-212	3.24E-06	2.20E-19
Po-212	2.09E-06	1.42E-19
Po-216	3.24E-06	2.20E-19
Ra-224	3.24E-06	2.20E-19
Ra-228	1.93E-05	1.31E-18
Ac-228	1.93E-05	1.31E-18
Th-228	3.24E-06	2.20E-19
Th-231	1.86E-05	1.26E-18
Th-232	1.96E-04	1.33E-17
Th-234	2.39E-02	1.62E-15
Pa-234	2.45E-06	1.66E-19
Pa-234m	2.39E-02	1.62E-15
U-235	1.86E-05	1.26E-18
U-238	2.39E-02	1.62E-15
Pu-238	1.88E-02	1.28E-15
Pu-239	1.44E-03	9.80E-17
Pu-240	5.04E-03	3.43E-16
Pu-241	6.95E-01	4.72E-14
Am-241	2.88E-05	1.96E-18
Cm-242	4.03E-04	2.74E-17
Cm-244	1.44E-04	9.80E-18

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: RFETS

Waste Handling: CH non-alpha

6 SIZE_REDUCTION

Nuclide	Thruput Volume m3/year	Thruput Mass kg/year
	4.18E+02	3.34E+06
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	3.67E-06	1.58E-13
Pb-212	9.72E-06	4.18E-13
Bi-212	9.72E-06	4.18E-13
Po-212	6.26E-06	2.69E-13
Po-216	9.72E-06	4.18E-13
Ra-224	9.72E-06	4.18E-13
Ra-228	5.81E-05	2.50E-12
Ac-228	5.81E-05	2.50E-12
Th-228	9.72E-06	4.18E-13
Th-231	5.59E-05	2.40E-12
Th-232	5.90E-04	2.53E-11
Th-234	7.17E-02	3.08E-09
Pa-234	7.35E-06	3.16E-13
Pa-234m	7.17E-02	3.08E-09
U-235	5.57E-05	2.39E-12
U-238	7.17E-02	3.08E-09
Pu-238	5.66E-02	2.43E-09
Pu-239	4.32E-03	1.85E-10
Pu-240	1.51E-02	6.50E-10
Pu-241	2.08E+00	8.96E-08
Am-241	8.64E-05	3.71E-12
Cm-242	1.21E-03	5.20E-11
Cm-244	4.32E-04	1.85E-11

11 PACKAGING

Nuclide	Thruput Volume m3/year	Thruput Mass kg/year
	7.46E+02	2.23E+06
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	6.56E-06	2.82E-13
Pb-212	1.73E-05	7.46E-13
Bi-212	1.73E-05	7.46E-13
Po-212	1.11E-05	4.81E-13
Po-216	1.73E-05	7.46E-13
Ra-224	1.73E-05	7.46E-13
Ra-228	1.03E-04	4.46E-12
Ac-228	1.03E-04	4.46E-12
Th-228	1.73E-05	7.46E-13
Th-231	9.99E-05	4.29E-12
Th-232	1.05E-03	4.53E-11
Th-234	1.28E-01	5.50E-09
Pa-234	1.31E-05	5.64E-13
Pa-234m	1.28E-01	5.50E-09
U-235	9.95E-05	4.28E-12
U-238	1.28E-01	5.50E-09
Pu-238	1.01E-01	4.34E-09
Pu-239	7.71E-03	3.31E-10
Pu-240	2.70E-02	1.16E-09
Pu-241	3.72E+00	1.59E-07
Am-241	1.54E-04	6.63E-12
Cm-242	2.16E-03	9.29E-11
Cm-244	7.71E-04	3.31E-11

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: RFETS

Waste Handling: CH non-alpha

96 CERTIFY_SHIP

Thruput Volume
m3/year 9.92E+02 Thruput Mass
kg/year 6.06E+06

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	1.14E-05	.
Pb-212	3.03E-05	.
Bi-212	3.03E-05	.
Po-212	1.95E-05	.
Po-216	3.03E-05	.
Ra-224	3.03E-05	.
Ra-228	1.81E-04	.
Ac-228	1.81E-04	.
Th-228	3.03E-05	.
Th-231	1.74E-04	.
Th-232	1.84E-03	.
Th-234	2.23E-01	.
Pa-234	2.29E-05	.
Pa-234m	2.23E-01	.
U-235	1.73E-04	.
U-238	2.23E-01	.
Pu-238	1.76E-01	.
Pu-239	1.34E-02	.
Pu-240	4.71E-02	.
Pu-241	6.49E+00	.
Am-241	2.69E-04	.
Cm-242	3.77E-03	.
Cm-244	1.34E-03	.

21 a-INCINERATION

Thruput Volume
m3/year 2.79E+03 Thruput Mass
kg/year 4.19E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	2.45E-05	6.97E-10
Pb-212	6.50E-05	1.84E-09
Bi-212	6.50E-05	1.84E-09
Po-212	4.19E-05	1.19E-09
Po-216	6.50E-05	1.84E-09
Ra-224	6.50E-05	1.84E-09
Ra-228	3.88E-04	1.10E-08
Ac-228	3.88E-04	1.10E-08
Th-228	6.50E-05	1.84E-09
Th-231	3.74E-04	1.06E-08
Th-232	3.94E-03	1.12E-07
Th-234	4.79E-01	1.36E-05
Pa-234	4.91E-05	1.39E-09
Pa-234m	4.79E-01	1.36E-05
U-235	3.72E-04	1.05E-08
U-238	4.79E-01	1.36E-05
Pu-238	3.78E-01	1.07E-05
Pu-239	2.89E-02	8.20E-07
Pu-240	1.01E-01	2.87E-06
Pu-241	1.39E+01	3.95E-04
Am-241	5.78E-04	1.64E-08
Cm-242	8.09E-03	2.29E-07
Cm-244	2.89E-03	8.20E-08

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: RFETS

Waste Handling: CH alpha

22 a-SOLIDIFICATION

Thruput Volume	1.24E+02	Thruput Mass	1.53E+05
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	2.45E-05	1.67E-18
Pb-212	6.50E-05	4.42E-18
Bi-212	6.50E-05	4.42E-18
Po-212	4.19E-05	2.84E-18
Po-216	6.50E-05	4.42E-18
Ra-224	6.50E-05	4.42E-18
Ra-228	3.88E-04	2.64E-17
Ac-228	3.88E-04	2.64E-17
Th-228	6.50E-05	4.42E-18
Th-231	3.74E-04	2.54E-17
Th-232	3.94E-03	2.68E-16
Th-234	4.79E-01	3.26E-14
Pa-234	4.91E-05	3.34E-18
Pa-234m	4.79E-01	3.26E-14
U-235	3.72E-04	2.53E-17
U-238	4.79E-01	3.26E-14
Pu-238	3.78E-01	2.57E-14
Pu-239	2.89E-02	1.96E-15
Pu-240	1.01E-01	6.87E-15
Pu-241	1.39E+01	9.47E-13
Am-241	5.78E-04	3.93E-17
Cm-242	8.09E-03	5.50E-16
Cm-244	2.89E-03	1.96E-16

25 a-SUPERCOMPACTION

Thruput Volume	5.87E+00	Thruput Mass	8.81E+02
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	5.17E-08	7.75E-18
Pb-212	1.36E-07	2.05E-17
Bi-212	1.36E-07	2.05E-17
Po-212	8.82E-08	1.32E-17
Po-216	1.36E-07	2.05E-17
Ra-224	1.36E-07	2.05E-17
Ra-228	8.17E-07	1.22E-16
Ac-228	8.17E-07	1.22E-16
Th-228	1.36E-07	2.05E-17
Th-231	7.87E-07	1.18E-16
Th-232	8.29E-06	1.24E-15
Th-234	1.00E-03	1.51E-13
Pa-234	1.03E-07	1.55E-17
Pa-234m	1.00E-03	1.51E-13
U-235	7.84E-07	1.17E-16
U-238	1.00E-03	1.51E-13
Pu-238	7.96E-04	1.19E-13
Pu-239	6.07E-05	9.11E-15
Pu-240	2.12E-04	3.19E-14
Pu-241	2.93E-02	4.39E-12
Am-241	1.21E-06	1.82E-16
Cm-242	1.70E-05	2.55E-15
Cm-244	6.08E-06	9.12E-16

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: RFETS

Waste Handling: CH alpha

96 CERTIFY_SHIP	Thruput Volume	Activity (Ci/yr)	Thruput Mass	Air Release (Ci/yr)
	m3/year		kg/year	
	1.62E+02		4.55E+05	
Nuclide				
Tl-208		2.46E-05		.
Pb-212		6.51E-05		.
Bi-212		6.51E-05		.
Po-212		4.19E-05		.
Po-216		6.51E-05		.
Ra-224		6.51E-05		.
Ra-228		3.89E-04		.
Ac-228		3.89E-04		.
Th-228		6.51E-05		.
Th-231		3.75E-04		.
Th-232		3.95E-03		.
Th-234		4.80E-01		.
Pa-234		4.92E-05		.
Pa-234m		4.80E-01		.
U-235		3.73E-04		.
U-238		4.80E-01		.
Pu-238		3.79E-01		.
Pu-239		2.89E-02		.
Pu-240		1.01E-01		.
Pu-241		1.39E+01		.
Am-241		5.79E-04		.
Cm-242		8.10E-03		.
Cm-244		2.89E-03		.

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Waste Handling: CH non-alpha

1 INCINERATION	Thruput Volume m3/year	1.45E+03	Thruput Mass kg/year	2.21E+05
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	3.77E+02		3.70E+02	
Cr-51	9.98E-01		2.83E-05	
Mn-54	1.90E+00		5.39E-05	
Fe-55	7.09E+00		2.01E-04	
Fe-59	6.41E-02		1.82E-06	
Co-58	2.55E+00		7.24E-05	
Co-60	2.00E+01		5.69E-04	
Ni-59	9.16E-02		2.60E-06	
Ni-63	1.31E+01		3.72E-04	
Sr-90	7.69E+00		2.18E-04	
Y-90	7.69E+00		2.18E-04	
Zr-95	7.78E-02		2.21E-06	
Tc-99	1.37E-03		3.90E-08	
Ru-106	7.51E-01		2.13E-05	
Rh-106	7.51E-01		2.13E-05	
Sb-125	2.15E-01		6.12E-06	
Te-125m	5.26E-02		1.49E-06	
Cs-134	8.73E-01		2.48E-05	
Cs-137	8.06E+00		2.28E-04	
Ba-137m	7.63E+00		2.16E-04	
Ce-144	2.51E+00		7.14E-05	
Pr-144	2.51E+00		7.14E-05	
Pr-144m	3.02E-02		8.58E-07	
Pm-147	6.13E+00		1.74E-04	
Sm-151	6.00E-02		1.70E-06	
Eu-152	9.16E-04		2.60E-08	
Eu-154	1.57E-01		4.46E-06	
Eu-155	1.24E-01		3.53E-06	
Tl-208	6.53E-04		1.85E-08	
Pb-212	1.72E-03		4.91E-08	
Bi-212	1.72E-03		4.91E-08	
Po-212	1.11E-03		3.16E-08	
Po-216	1.72E-03		4.91E-08	
Ra-224	1.72E-03		4.91E-08	
Ra-228	1.03E-02		2.93E-07	
Ac-228	1.03E-02		2.93E-07	
Th-228	1.72E-03		4.91E-08	
Th-231	9.95E-03		2.82E-07	
Th-232	1.04E-01		2.97E-06	
Th-234	1.27E+01		3.62E-04	
Pa-234	1.30E-03		3.71E-08	
Pa-234m	1.27E+01		3.62E-04	
U-235	9.91E-03		2.81E-07	
U-238	1.27E+01		3.62E-04	
Pu-238	1.89E-01		5.37E-06	
Pu-239	1.83E-03		5.20E-08	
Pu-240	9.16E-04		2.60E-08	
Pu-241	2.11E-01		6.00E-06	
Am-241	2.74E-03		7.80E-08	

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Waste Handling: CH non-alpha

2 SOLIDIFICATION

Thruput Volume
m3/year 2.02E+03Thruput Mass
kg/year 2.42E+06

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	4.05E+02	6.07E+00
C-14	1.30E-03	8.89E-17
Cr-51	9.98E-01	6.79E-14
Mn-54	2.04E+00	1.39E-13
Fe-55	7.09E+00	4.82E-13
Fe-59	6.41E-02	4.36E-15
Co-58	2.68E+00	1.82E-13
Co-60	2.04E+01	1.39E-12
Ni-59	9.16E-02	6.23E-15
Ni-63	1.31E+01	8.91E-13
Sr-90	7.91E+00	5.38E-13
Y-90	7.91E+00	5.38E-13
Zr-95	7.78E-02	5.29E-15
Tc-99	3.99E-03	2.71E-16
Ru-106	7.54E-01	5.12E-14
Rh-106	7.54E-01	5.12E-14
Sb-125	2.16E-01	1.47E-14
Te-125m	5.28E-02	3.59E-15
Cs-134	1.18E+00	8.03E-14
Cs-137	8.49E+00	5.77E-13
Ba-137m	8.04E+00	5.46E-13
Ce-144	2.52E+00	1.71E-13
Pr-144	2.52E+00	1.71E-13
Pr-144m	3.03E-02	2.06E-15
Pm-147	6.16E+00	4.19E-13
Sm-151	6.02E-02	4.09E-15
Eu-152	9.19E-04	6.25E-17
Eu-154	1.57E-01	1.07E-14
Eu-155	1.25E-01	8.50E-15
Tl-208	6.54E-04	4.44E-17
Pb-212	1.73E-03	1.17E-16
Bi-212	1.73E-03	1.17E-16
Po-212	1.11E-03	7.58E-17
Po-216	1.73E-03	1.17E-16
Ra-224	1.73E-03	1.17E-16
Ra-228	1.03E-02	7.03E-16
Ac-228	1.03E-02	7.03E-16
Th-228	1.73E-03	1.17E-16
Th-231	9.96E-03	6.77E-16
Th-232	1.05E-01	7.14E-15
Th-234	1.27E+01	8.68E-13
Pa-234	1.30E-03	8.89E-17
Pa-234m	1.27E+01	8.68E-13
U-235	9.92E-03	6.74E-16
U-238	1.27E+01	8.69E-13
Pu-238	1.89E-01	1.29E-14
Pu-239	1.83E-03	1.25E-16
Pu-240	9.19E-04	6.25E-17
Pu-241	2.12E-01	1.44E-14
Am-241	2.75E-03	1.87E-16

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Waste Handling: CH non-alpha

5 SUPERCOMPACTION

Thruput Volume
m3/year

9.38E+03

Thruput Mass
kg/year

1.40E+06

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.99E+04	2.98E-06
C-14	6.54E-02	9.81E-12
Mn-54	7.36E+00	1.10E-09
Co-58	6.80E+00	1.02E-09
Co-60	1.96E+01	2.94E-09
Ni-63	1.82E-02	2.74E-12
Sr-90	1.08E+01	1.63E-09
Y-90	1.08E+01	1.63E-09
Tc-99	1.31E-01	1.96E-11
Ru-106	1.58E-01	2.38E-11
Rh-106	1.58E-01	2.38E-11
Sb-125	4.55E-02	6.83E-12
Te-125m	1.11E-02	1.66E-12
Cs-134	1.54E+01	2.31E-09
Cs-137	2.18E+01	3.27E-09
Ba-137m	2.06E+01	3.09E-09
Ce-144	5.31E-01	7.96E-11
Pr-144	5.31E-01	7.96E-11
Pr-144m	6.38E-03	9.58E-13
Pm-147	1.29E+00	1.94E-10
Sm-151	1.26E-02	1.90E-12
Eu-152	1.93E-04	2.90E-14
Eu-154	3.31E-02	4.97E-12
Eu-155	2.63E-02	3.94E-12
Tl-208	4.11E-05	6.17E-15
Pb-212	1.08E-04	1.63E-14
Bi-212	1.08E-04	1.63E-14
Po-212	7.01E-05	1.05E-14
Po-216	1.08E-04	1.63E-14
Ra-224	1.08E-04	1.63E-14
Ra-228	6.50E-04	9.76E-14
Ac-228	6.50E-04	9.76E-14
Th-228	1.08E-04	1.63E-14
Th-231	6.26E-04	9.40E-14
Th-232	6.60E-03	9.90E-13
Th-234	8.03E-01	1.20E-10
Pa-234	8.22E-05	1.23E-14
Pa-234m	8.03E-01	1.20E-10
U-235	6.24E-04	9.36E-14
U-238	1.59E+00	2.39E-10
Pu-238	3.99E-02	5.99E-12
Pu-239	3.87E-04	5.80E-14
Pu-240	1.93E-04	2.90E-14
Pu-241	4.47E-02	6.70E-12
Am-241	5.80E-04	8.71E-14

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Waste Handling: CH non-alpha

6 SIZE_REDUCTION

Thruput Volume
m3/year 9.15E+02 Thruput Mass
kg/year 7.32E+06

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	7.91E-03	3.40E-10
Co-60	3.76E-02	1.61E-09
Ni-63	7.48E-02	3.21E-09
Sr-90	6.65E+00	2.86E-07
Y-90	6.65E+00	2.86E-07
Tc-99	1.18E-03	5.10E-11
Ru-106	6.49E-01	2.79E-08
Rh-106	6.49E-01	2.79E-08
Sb-125	1.86E-01	8.01E-09
Te-125m	4.55E-02	1.95E-09
Cs-134	7.55E-01	3.24E-08
Cs-137	6.96E+00	2.99E-07
Ba-137m	6.59E+00	2.83E-07
Ce-144	2.17E+00	9.34E-08
Pr-144	2.17E+00	9.34E-08
Pr-144m	2.61E-02	1.12E-09
Pm-147	5.30E+00	2.28E-07
Sm-151	5.18E-02	2.23E-09
Eu-152	7.91E-04	3.40E-11
Eu-154	1.35E-01	5.83E-09
Eu-155	1.07E-01	4.63E-09
Tl-208	1.59E-04	6.86E-12
Pb-212	4.22E-04	1.81E-11
Bi-212	4.22E-04	1.81E-11
Po-212	2.72E-04	1.17E-11
Po-216	4.22E-04	1.81E-11
Ra-224	4.22E-04	1.81E-11
Ra-228	2.52E-03	1.08E-10
Ac-228	2.52E-03	1.08E-10
Th-228	4.22E-04	1.81E-11
Th-231	2.43E-03	1.04E-10
Th-232	2.56E-02	1.10E-09
Th-234	3.11E+00	1.34E-07
Pa-234	3.19E-04	1.37E-11
Pa-234m	3.11E+00	1.34E-07
U-235	2.42E-03	1.04E-10
U-238	3.11E+00	1.34E-07
Pu-238	4.77E-01	2.05E-08
Pu-239	2.55E-02	1.10E-09
Pu-240	8.47E-02	3.64E-09
Pu-241	1.17E+01	5.05E-07
Am-241	2.85E-03	1.22E-10
Cm-242	6.72E-03	2.88E-10
Cm-244	2.40E-03	1.03E-10

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Waste Handling: CH non-alpha

11 PACKAGING

Thruput Volume
m3/year 3.80E+04Thruput Mass
kg/year 1.14E+08

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	4.73E+04	2.03E-03
C-14	1.02E+00	4.39E-08
Cr-51	1.95E+03	8.40E-05
Mn-54	3.83E+03	1.64E-04
Fe-55	1.38E+04	5.96E-04
Fe-59	1.25E+02	5.39E-06
Co-58	5.09E+03	2.19E-04
Co-60	3.94E+04	1.69E-03
Ni-59	1.79E+02	7.70E-06
Ni-63	2.55E+04	1.09E-03
Sr-90	3.53E+03	1.52E-04
Y-90	3.53E+03	1.52E-04
Zr-95	1.52E+02	6.55E-06
Tc-99	2.65E+00	1.14E-07
Ru-106	3.31E+02	1.42E-05
Rh-106	3.31E+02	1.42E-05
Sb-125	9.51E+01	4.09E-06
Te-125m	2.32E+01	9.99E-07
Cs-134	6.23E+02	2.68E-05
Cs-137	3.87E+03	1.66E-04
Ba-137m	3.66E+03	1.57E-04
Ce-144	1.10E+03	4.76E-05
Pr-144	1.10E+03	4.76E-05
Pr-144m	1.33E+01	5.73E-07
Pm-147	2.70E+03	1.16E-04
Sm-151	2.64E+01	1.13E-06
Eu-152	4.04E-01	1.73E-08
Eu-154	6.93E+01	2.97E-06
Eu-155	5.49E+01	2.36E-06
U-238	1.24E+01	5.34E-07
Pu-238	8.38E+01	3.60E-06
Pu-239	8.36E-01	3.59E-08
Pu-240	5.03E-01	2.16E-08
Pu-241	1.07E+02	4.60E-06
Am-241	1.21E+00	5.21E-08
Cm-242	7.95E-03	3.41E-10
Cm-244	2.84E-03	1.22E-10

95 INSPECT_RECEIVE

Thruput Volume
m3/year 1.27E+02Thruput Mass
kg/year 1.91E+04

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.99E+04	.

Table D.2 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Waste Handling: CH non-alpha

96 CERTIFY_SHIP

Thruput Volume	Thruput Mass
m3/year 7.13E+04	kg/year 1.83E+08

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.99E+04	.
H-3	6.73E+04	.
C-14	1.08E+00	.
Cr-51	1.95E+03	.
Mn-54	3.84E+03	.
Fe-55	1.38E+04	.
Fe-59	1.25E+02	.
Co-58	5.10E+03	.
Co-60	3.94E+04	.
Ni-59	1.79E+02	.
Ni-63	2.55E+04	.
Sr-90	3.89E+03	.
Y-90	3.89E+03	.
Zr-95	1.52E+02	.
Tc-99	6.51E+01	.
Ru-106	3.33E+02	.
Rh-106	3.33E+02	.
Sb-125	1.12E+02	.
Te-125m	2.33E+01	.
Cs-134	6.40E+02	.
Cs-137	3.96E+03	.
Ba-137m	3.74E+03	.
Ce-144	1.11E+03	.
Pr-144	1.11E+03	.
Pr-144m	1.33E+01	.
Pm-147	3.15E+03	.
Sm-151	2.65E+01	.
Eu-152	4.05E-01	.
Eu-154	6.96E+01	.
Eu-155	5.52E+01	.
Tl-208	8.54E-04	.
Pb-212	2.26E-03	.
Bi-212	2.26E-03	.
Po-212	1.45E-03	.
Po-216	2.26E-03	.
Ra-224	2.26E-03	.
Ra-228	1.35E-02	.
Ac-228	1.35E-02	.
Th-228	2.26E-03	.
Th-231	1.30E-02	.
Th-232	1.37E-01	.
Th-234	1.66E+01	.
Pa-234	1.70E-03	.
Pa-234m	1.66E+01	.
U-235	1.29E-02	.
U-238	2.99E+01	.
Pu-238	8.45E+01	.
Pu-239	8.64E-01	.
Pu-240	5.89E-01	.
Pu-241	1.19E+02	.
Am-241	1.21E+00	.
Cm-242	1.46E-02	.
Cm-244	5.24E-03	.

Table D.3 Radionuclide Thruput and Air Release by Site and Technology

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

1 INCINERATION

Thruput Volume
m3/year 3.48E+01Thruput Mass
kg/year 7.90E+03

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.86E+04	2.81E+04
C-14	2.62E-01	2.62E-01
Cr-51	3.40E-02	9.68E-07
Mn-54	2.96E+01	8.42E-04
Fe-55	5.57E-01	1.58E-05
Fe-59	2.18E-03	6.21E-08
Co-58	2.74E+01	7.78E-04
Co-60	7.99E+01	2.27E-03
Ni-59	3.12E-03	8.88E-08
Ni-63	4.57E-01	1.29E-05
Sr-90	3.82E+01	1.08E-03
Y-90	3.82E+01	1.08E-03
Zr-95	2.65E-03	7.54E-08
Tc-99	5.25E-01	1.49E-05
Ru-106	1.14E-01	3.24E-06
Rh-106	1.14E-01	3.24E-06
Sb-125	3.28E-02	9.32E-07
Te-125m	8.01E-03	2.27E-07
Cs-134	6.13E+01	1.74E-03
Cs-137	8.19E+01	2.32E-03
Ba-137m	7.75E+01	2.20E-03
Ce-144	3.82E-01	1.08E-05
Pr-144	3.82E-01	1.08E-05
Pr-144m	4.59E-03	1.30E-07
Pm-147	9.33E-01	2.65E-05
Sm-151	9.13E-03	2.59E-07
Eu-152	1.39E-04	3.95E-09
Eu-154	2.39E-02	6.78E-07
Eu-155	1.89E-02	5.38E-07
Tl-208	5.51E-06	1.56E-10
Pb-212	1.46E-05	4.14E-10
Bi-212	1.46E-05	4.14E-10
Po-212	9.41E-06	2.67E-10
Po-216	1.46E-05	4.14E-10
Ra-224	1.46E-05	4.14E-10
Ra-228	8.73E-05	2.47E-09
Ac-228	8.73E-05	2.47E-09
Th-228	1.46E-05	4.14E-10
Th-231	8.40E-05	2.38E-09
Th-232	8.86E-04	2.51E-08
Th-234	1.07E-01	3.06E-06
Pa-234	1.10E-05	3.13E-10
Pa-234m	1.07E-01	3.06E-06
U-235	8.37E-05	2.37E-09
U-238	3.30E+00	9.38E-05
Pu-238	3.00E-02	8.54E-07
Pu-239	3.78E-04	1.07E-08
Pu-240	4.89E-04	1.39E-08
Pu-241	8.04E-02	2.28E-06
Am-241	4.20E-04	1.19E-08
Cm-242	2.80E-05	7.95E-10
Cm-244	1.00E-05	2.84E-10

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

5 SUPERCOMPACTION

Thruput Volume
m3/year

4.94E+03

Thruput Mass
kg/year

7.41E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	7.11E+03	1.06E-06
C-14	6.33E-01	9.49E-11
Cr-51	3.11E+01	4.66E-09
Mn-54	1.30E+02	1.95E-08
Fe-55	2.21E+02	3.31E-08
Fe-59	1.99E+00	2.99E-10
Co-58	1.45E+02	2.18E-08
Co-60	8.19E+02	1.22E-07
Ni-59	2.85E+00	4.28E-10
Ni-63	4.17E+02	6.26E-08
Sr-90	1.15E+03	1.72E-07
Y-90	1.15E+03	1.72E-07
Zr-95	2.42E+00	3.64E-10
Tc-99	1.45E+00	2.18E-10
Ru-106	1.03E+02	1.55E-08
Rh-106	1.03E+02	1.55E-08
Sb-125	2.97E+01	4.46E-09
Te-125m	7.26E+00	1.08E-09
Cs-134	2.67E+02	4.01E-08
Cs-137	1.30E+03	1.95E-07
Ba-137m	1.23E+03	1.85E-07
Ce-144	3.46E+02	5.20E-08
Pr-144	3.46E+02	5.20E-08
Pr-144m	4.16E+00	6.25E-10
Pm-147	8.46E+02	1.26E-07
Sm-151	8.27E+00	1.24E-09
Eu-152	1.26E-01	1.89E-11
Eu-154	2.16E+01	3.25E-09
Eu-155	1.71E+01	2.57E-09
Tl-208	1.48E-04	2.23E-14
Pb-212	3.93E-04	5.90E-14
Bi-212	3.93E-04	5.90E-14
Po-212	2.53E-04	3.80E-14
Po-216	3.93E-04	5.90E-14
Ra-224	3.93E-04	5.90E-14
Ra-228	2.35E-03	3.53E-13
Ac-228	2.35E-03	3.53E-13
Th-228	3.93E-04	5.90E-14
Th-231	2.26E-03	3.39E-13
Th-232	2.38E-02	3.58E-12
Th-234	2.90E+00	4.35E-10
Pa-234	2.97E-04	4.46E-14
Pa-234m	2.90E+00	4.35E-10
U-235	2.25E-03	3.38E-13
U-238	1.06E+01	1.59E-09
Pu-238	2.61E+01	3.91E-09
Pu-239	2.53E-01	3.80E-11
Pu-240	1.30E-01	1.95E-11
Pu-241	2.96E+01	4.45E-09
Am-241	3.79E-01	5.68E-11
Cm-242	2.96E-04	4.45E-14
Cm-244	1.05E+01	1.58E-09

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

6 SIZE_REDUCTION	Thruput Volume m3/year	3.15E+03	Thruput Mass kg/year	2.52E+07
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	4.13E+03		1.77E-04	
C-14	1.90E-04		8.19E-12	
Cr-51	4.93E+01		2.12E-06	
Mn-54	9.40E+01		4.04E-06	
Fe-55	3.50E+02		1.50E-05	
Fe-59	3.17E+00		1.36E-07	
Co-58	1.26E+02		5.42E-06	
Co-60	9.93E+02		4.27E-05	
Ni-59	4.53E+00		1.94E-07	
Ni-63	6.51E+02		2.80E-05	
Sr-90	6.59E+02		2.83E-05	
Y-90	6.59E+02		2.83E-05	
Zr-95	3.85E+00		1.65E-07	
Tc-99	1.18E-01		5.07E-09	
Ru-106	6.43E+01		2.76E-06	
Rh-106	6.43E+01		2.76E-06	
Sb-125	1.84E+01		7.94E-07	
Te-125m	4.51E+00		1.93E-07	
Cs-134	7.48E+01		3.21E-06	
Cs-137	6.90E+02		2.96E-05	
Ba-137m	6.53E+02		2.81E-05	
Ce-144	2.15E+02		9.26E-06	
Pr-144	2.15E+02		9.26E-06	
Pr-144m	2.58E+00		1.11E-07	
Pm-147	5.25E+02		2.26E-05	
Sm-151	5.13E+00		2.20E-07	
Eu-152	7.84E-02		3.37E-09	
Eu-154	1.34E+01		5.78E-07	
Eu-155	1.06E+01		4.58E-07	
Tl-208	9.23E-05		3.97E-12	
Pb-212	2.44E-04		1.05E-11	
Bi-212	2.44E-04		1.05E-11	
Po-212	1.57E-04		6.77E-12	
Po-216	2.44E-04		1.05E-11	
Ra-224	2.44E-04		1.05E-11	
Ra-228	1.46E-03		6.28E-11	
Ac-228	1.46E-03		6.28E-11	
Th-228	2.44E-04		1.05E-11	
Th-231	1.40E-03		6.05E-11	
Th-232	1.48E-02		6.37E-10	
Th-234	1.80E+00		7.75E-08	
Pa-234	1.84E-04		7.94E-12	
Pa-234m	1.80E+00		7.75E-08	
U-235	1.40E-03		6.02E-11	
U-238	1.80E+00		7.76E-08	
Pu-238	1.62E+01		6.96E-07	
Pu-239	1.57E-01		6.77E-09	
Pu-240	8.06E-02		3.46E-09	
Pu-241	1.84E+01		7.92E-07	
Am-241	2.35E-01		1.01E-08	
Cm-242	1.77E-04		7.65E-12	
Cm-244	6.35E-05		2.73E-12	

Table D.3 Radionuclide Thruput and Air Release by Site and Technology---Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

95 INSPECT_RECEIVE	Thruput Volume m3/year	2.21E+02	Thruput Mass kg/year	6.26E+05
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
Sr-90	1.26E+02		.	
Y-90	1.26E+02		.	
Zr-95	4.93E-03		.	
Tc-99	1.79E+00		.	
Ru-106	1.47E-02		.	
Rh-106	1.47E-02		.	
Sb-125	4.22E-03		.	
Te-125m	1.03E-03		.	
Cs-134	2.08E+02		.	
Cs-137	2.75E+02		.	
Ba-137m	2.60E+02		.	
Ce-144	4.92E-02		.	
Pr-144	4.92E-02		.	
Pr-144m	5.92E-04		.	
Pm-147	1.20E-01		.	
Sm-151	1.17E-03		.	
Eu-152	1.79E-05		.	
Eu-154	3.07E-03		.	
Eu-155	2.44E-03		.	
Tl-208	5.35E-06		.	
Pb-212	1.41E-05		.	
Bi-212	1.41E-05		.	
Po-212	9.13E-06		.	
Po-216	1.41E-05		.	
Ra-224	1.41E-05		.	
Ra-228	8.47E-05		.	
Ac-228	8.47E-05		.	
Th-228	1.41E-05		.	
Th-231	8.15E-05		.	
Th-232	8.59E-04		.	
Th-234	1.04E-01		.	
Pa-234	1.07E-05		.	
Pa-234m	1.04E-01		.	
U-235	8.12E-05		.	
U-238	1.10E+01		.	
Pu-238	2.72E-02		.	
Pu-239	1.83E-03		.	
Pu-240	6.30E-03		.	
Pu-241	8.69E-01		.	
Am-241	8.97E-05		.	
Cm-242	5.02E-04		.	
Cm-244	1.05E+01		.	

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH non-alpha

1 INCINERATION

Thruput Volume	Thruput Mass
m ³ /year	kg/year
7.33E+03	1.10E+06

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	3.62E-02	3.56E-02
Cr-51	3.22E-01	9.15E-06
Mn-54	6.13E-01	1.74E-05
Fe-55	2.29E+00	6.50E-05
Fe-59	2.07E-02	5.88E-07
Co-58	8.23E-01	2.33E-05
Co-60	6.62E+00	1.88E-04
Ni-59	2.95E-02	8.40E-07
Ni-63	4.52E+00	1.28E-04
Sr-90	2.87E+01	8.16E-04
Y-90	2.87E+01	8.16E-04
Zr-95	2.51E-02	7.14E-07
Tc-99	5.13E-03	1.45E-07
Ru-106	2.80E+00	7.97E-05
Rh-106	2.80E+00	7.97E-05
Sb-125	8.06E-01	2.29E-05
Te-125m	1.96E-01	5.59E-06
Cs-134	3.26E+00	9.27E-05
Cs-137	3.01E+01	8.55E-04
Ba-137m	2.85E+01	8.10E-04
Ce-144	9.40E+00	2.66E-04
Pr-144	9.40E+00	2.66E-04
Pr-144m	1.13E-01	3.20E-06
Pm-147	2.29E+01	6.51E-04
Sm-151	2.24E-01	6.37E-06
Eu-152	3.42E-03	9.72E-08
Eu-154	5.87E-01	1.66E-05
Eu-155	4.65E-01	1.32E-05
Tl-208	1.66E-02	4.74E-07
Pb-212	4.41E-02	1.25E-06
Bi-212	4.41E-02	1.25E-06
Po-212	2.84E-02	8.08E-07
Po-216	4.41E-02	1.25E-06
Ra-224	4.41E-02	1.25E-06
Ra-228	2.64E-01	7.50E-06
Ac-228	2.64E-01	7.50E-06
Th-228	4.41E-02	1.25E-06
Th-231	2.54E-01	7.22E-06
Th-232	2.68E+00	7.61E-05
Th-234	3.25E+02	9.25E-03
Pa-234	3.33E-02	9.48E-07
Pa-234m	3.25E+02	9.25E-03
U-235	2.53E-01	7.19E-06
U-238	3.25E+02	9.25E-03
Pu-238	5.17E+00	1.46E-04
Pu-239	3.47E-01	9.88E-06
Pu-240	1.19E+00	3.40E-05
Pu-241	1.65E+02	4.69E-03
Am-241	1.70E-02	4.85E-07
Cm-242	9.55E-02	2.71E-06
Cm-244	3.41E-02	9.68E-07

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH non-alpha

5 SUPERCOMPACTION

Thruput Volume
m3/year

5.73E+03

Thruput Mass
kg/year

8.60E+05

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	3.84E+05	5.76E-05
C-14	1.83E-01	2.75E-11
Cr-51	2.71E-02	4.06E-12
Mn-54	2.07E+01	3.10E-09
Fe-55	1.92E-01	2.89E-11
Fe-59	1.74E-03	2.61E-13
Co-58	1.91E+01	2.87E-09
Co-60	4.21E+02	6.32E-08
Ni-59	2.48E-03	3.73E-13
Ni-63	7.27E+02	1.09E-07
Sr-90	6.46E+04	9.70E-06
Y-90	6.46E+04	9.70E-06
Zr-95	2.11E-03	3.17E-13
Tc-99	1.19E+01	1.78E-09
Ru-106	6.31E+03	9.46E-07
Rh-106	6.31E+03	9.46E-07
Sb-125	1.81E+03	2.71E-07
Te-125m	4.42E+02	6.63E-08
Cs-134	7.38E+03	1.10E-06
Cs-137	6.78E+04	1.01E-05
Ba-137m	6.41E+04	9.62E-06
Ce-144	2.11E+04	3.16E-06
Pr-144	2.11E+04	3.16E-06
Pr-144m	2.54E+02	3.81E-08
Pm-147	5.15E+04	7.73E-06
Sm-151	5.04E+02	7.56E-08
Eu-152	7.69E+00	1.15E-09
Eu-154	1.32E+03	1.98E-07
Eu-155	1.04E+03	1.57E-07
Tl-208	1.43E-05	2.15E-15
Pb-212	3.80E-05	5.71E-15
Bi-212	3.80E-05	5.71E-15
Po-212	2.45E-05	3.68E-15
Po-216	3.80E-05	5.71E-15
Ra-224	3.80E-05	5.71E-15
Ra-228	2.27E-04	3.41E-14
Ac-228	2.27E-04	3.41E-14
Th-228	3.80E-05	5.71E-15
Th-231	2.19E-04	3.28E-14
Th-232	2.31E-03	3.46E-13
Th-234	2.80E-01	4.21E-11
Pa-234	2.87E-05	4.31E-15
Pa-234m	2.80E-01	4.21E-11
U-235	2.18E-04	3.27E-14
U-238	2.51E+00	3.77E-10
Pu-238	1.58E+03	2.38E-07
Pu-239	1.54E+01	2.31E-09
Pu-240	7.73E+00	1.16E-09
Pu-241	1.78E+03	2.67E-07
Am-241	2.30E+01	3.46E-09
Cm-242	2.91E-03	4.36E-13
Cm-244	1.04E-03	1.56E-13

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH non-alpha

6 SIZE_REDUCTION

Thruput Volume
m3/year

7.13E+03

Thruput Mass
kg/year

5.70E+07

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	2.09E+02	9.02E-06
Cr-51	2.33E+03	1.00E-04
Mn-54	4.45E+03	1.91E-04
Fe-55	1.66E+04	7.14E-04
Fe-59	1.50E+02	6.46E-06
Co-58	5.97E+03	2.57E-04
Co-60	4.68E+04	2.01E-03
Ni-59	2.14E+02	9.22E-06
Ni-63	3.05E+04	1.31E-03
Sr-90	1.17E-02	5.04E-10
Y-90	1.17E-02	5.04E-10
Zr-95	1.82E+02	7.84E-06
Tc-99	2.09E-06	9.01E-14
Ru-106	1.14E-03	4.92E-11
Rh-106	1.14E-03	4.92E-11
Sb-125	3.29E-04	1.41E-11
Te-125m	8.03E-05	3.45E-12
Cs-134	1.33E-03	5.72E-11
Cs-137	2.11E-01	9.08E-09
Ba-137m	2.10E-01	9.05E-09
Ce-144	3.83E-03	1.64E-10
Pr-144	3.83E-03	1.64E-10
Pr-144m	4.61E-05	1.98E-12
Pm-147	9.36E-03	4.02E-10
Sm-151	9.15E-05	3.93E-12
Eu-152	1.39E-06	6.00E-14
Eu-154	2.39E-04	1.03E-11
Eu-155	1.90E-04	8.17E-12
Tl-208	2.07E-04	8.90E-12
Pb-212	5.48E-04	2.35E-11
Bi-212	5.48E-04	2.35E-11
Po-212	3.53E-04	1.51E-11
Po-216	5.48E-04	2.35E-11
Ra-224	5.48E-04	2.35E-11
Ra-228	3.27E-03	1.40E-10
Ac-228	3.27E-03	1.40E-10
Th-228	5.48E-04	2.35E-11
Th-231	3.15E-03	1.35E-10
Th-232	3.32E-02	1.43E-09
Th-234	4.04E+00	1.73E-07
Pa-234	4.14E-04	1.78E-11
Pa-234m	4.04E+00	1.73E-07
U-235	3.14E-03	1.35E-10
U-238	4.04E+00	1.73E-07
Pu-238	5.69E-02	2.44E-09
Pu-239	4.32E-03	1.86E-10
Pu-240	1.51E-02	6.50E-10
Pu-241	2.08E+00	8.96E-08
Am-241	9.06E-05	3.89E-12
Cm-242	1.21E-03	5.20E-11
Cm-244	4.32E-04	1.85E-11

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH non-alpha

10 AQUEOUS

Thruput Volume	2.48E+06	Thruput Mass	2.48E+09
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.69E+02	1.69E-01

17 DISCHARGE

Thruput Volume	2.48E+06	Thruput Mass	2.48E+09
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.68E+02	.

95 INSPECT_RECEIVE

Thruput Volume	1.71E+04	Thruput Mass	5.16E+07
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	3.84E+05	.
C-14	1.83E-01	.
Cr-51	2.33E+03	.
Mn-54	4.47E+03	.
Fe-55	1.66E+04	.
Fe-59	1.50E+02	.
Co-58	5.99E+03	.
Co-60	4.72E+04	.
Ni-59	2.14E+02	.
Ni-63	3.12E+04	.
Sr-90	6.47E+04	.
Y-90	6.47E+04	.
Zr-95	1.82E+02	.
Tc-99	1.19E+01	.
Ru-106	6.31E+03	.
Rh-106	6.31E+03	.
Sb-125	1.81E+03	.
Te-125m	4.42E+02	.
Cs-134	7.38E+03	.
Cs-137	6.78E+04	.
Ba-137m	6.42E+04	.
Ce-144	2.11E+04	.
Pr-144	2.11E+04	.
Pr-144m	2.54E+02	.
Pm-147	5.16E+04	.
Sm-151	5.04E+02	.
Eu-152	7.70E+00	.
Eu-154	1.32E+03	.
Eu-155	1.04E+03	.
Tl-208	1.69E-02	.
Pb-212	4.47E-02	.
Bi-212	4.47E-02	.
Po-212	2.88E-02	.
Po-216	4.47E-02	.
Ra-224	4.47E-02	.
Ra-228	2.67E-01	.
Ac-228	2.67E-01	.
Th-228	4.47E-02	.
Th-231	2.57E-01	.
Th-232	2.71E+00	.
Th-234	3.30E+02	.
Pa-234	3.38E-02	.
Pa-234m	3.30E+02	.
U-235	2.56E-01	.
U-238	3.32E+02	.
Pu-238	1.59E+03	.
Pu-239	1.57E+01	.
Pu-240	8.94E+00	.
Pu-241	1.95E+03	.
Am-241	2.31E+01	.
Cm-242	9.96E-02	.
Cm-244	3.55E-02	.

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH alpha

13 SHALLOW LAND BU

Thruput Volume 1.62E+02 Thruput Mass 4.55E+05
m3/year kg/year

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	2.46E-05	1.47E-11
Pb-212	6.51E-05	3.91E-11
Bi-212	6.51E-05	3.91E-11
Po-212	4.19E-05	2.51E-11
Po-216	6.51E-05	3.91E-11
Ra-224	6.51E-05	3.91E-11
Ra-228	3.89E-04	2.33E-10
Ac-228	3.89E-04	2.33E-10
Th-228	6.51E-05	3.91E-11
Th-231	3.75E-04	2.25E-10
Th-232	3.95E-03	2.37E-09
Th-234	4.80E-01	2.88E-07
Pa-234	4.92E-05	2.95E-11
Pa-234m	4.80E-01	2.88E-07
U-235	3.73E-04	2.24E-10
U-238	4.80E-01	2.88E-07
Pu-238	3.79E-01	2.27E-07
Pu-239	2.89E-02	1.73E-08
Pu-240	1.01E-01	6.08E-08
Pu-241	1.39E+01	8.37E-06
Am-241	5.79E-04	3.47E-10
Cm-242	8.10E-03	4.86E-09
Cm-244	2.89E-03	1.73E-09

21 a-INCINERATION

Thruput Volume 2.79E+03 Thruput Mass 4.19E+05
m3/year kg/year

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
Tl-208	2.45E-05	6.97E-10
Pb-212	6.50E-05	1.84E-09
Bi-212	6.50E-05	1.84E-09
Po-212	4.19E-05	1.19E-09
Po-216	6.50E-05	1.84E-09
Ra-224	6.50E-05	1.84E-09
Ra-228	3.88E-04	1.10E-08
Ac-228	3.88E-04	1.10E-08
Th-228	6.50E-05	1.84E-09
Th-231	3.74E-04	1.06E-08
Th-232	3.94E-03	1.12E-07
Th-234	4.79E-01	1.36E-05
Pa-234	4.91E-05	1.39E-09
Pa-234m	4.79E-01	1.36E-05
U-235	3.72E-04	1.05E-08
U-238	4.79E-01	1.36E-05
Pu-238	3.78E-01	1.07E-05
Pu-239	2.89E-02	8.20E-07
Pu-240	1.01E-01	2.87E-06
Pu-241	1.39E+01	3.95E-04
Am-241	5.78E-04	1.64E-08
Cm-242	8.09E-03	2.29E-07
Cm-244	2.89E-03	8.20E-08

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: INEL

Waste Handling: CH alpha

25 a-SUPERCOMPACTION

Thruput Volume
m3/year 5.87E+00Thruput Mass
kg/year 8.81E+02

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
-----	-----	-----
Tl-208	5.17E-08	7.75E-18
Pb-212	1.36E-07	2.05E-17
Bi-212	1.36E-07	2.05E-17
Po-212	8.82E-08	1.32E-17
Po-216	1.36E-07	2.05E-17
Ra-224	1.36E-07	2.05E-17
Ra-228	8.17E-07	1.22E-16
Ac-228	8.17E-07	1.22E-16
Th-228	1.36E-07	2.05E-17
Th-231	7.87E-07	1.18E-16
Th-232	8.29E-06	1.24E-15
Th-234	1.00E-03	1.51E-13
Pa-234	1.03E-07	1.55E-17
Pa-234m	1.00E-03	1.51E-13
U-235	7.84E-07	1.17E-16
U-238	1.00E-03	1.51E-13
Pu-238	7.96E-04	1.19E-13
Pu-239	6.07E-05	9.11E-15
Pu-240	2.12E-04	3.19E-14
Pu-241	2.93E-02	4.39E-12
Am-241	1.21E-06	1.82E-16
Cm-242	1.70E-05	2.55E-15
Cm-244	6.08E-06	9.12E-16

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal			
Waste Stream: LLW			
Treatment Site: ORR		Waste Handling: CH_non-alpha	
1 INCINERATION	Thruput Volume m3/year	6.41E+03	Thruput Mass kg/year 1.04E+06
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
	H-3	8.69E+04	8.54E+04
	C-14	6.11E-03	6.10E-03
	Cr-51	3.83E-03	1.09E-07
	Mn-54	6.96E-01	1.98E-05
	Fe-55	2.72E-02	7.74E-07
	Fe-59	2.46E-04	6.99E-09
	Co-58	6.45E-01	1.83E-05
	Co-60	1.96E+00	5.56E-05
	Ni-59	3.52E-04	9.99E-09
	Ni-63	1.37E-01	3.89E-06
	Sr-90	8.59E+00	2.44E-04
	Y-90	8.59E+00	2.44E-04
	Zr-95	2.99E-04	8.49E-09
	Tc-99	1.36E-02	3.86E-07
	Ru-106	7.54E-01	2.14E-05
	Rh-106	7.54E-01	2.14E-05
	Sb-125	2.17E-01	6.15E-06
	Te-125m	5.29E-02	1.50E-06
	Cs-134	2.30E+00	6.53E-05
	Cs-137	9.97E+00	2.83E-04
	Ba-137m	9.44E+00	2.68E-04
	Ce-144	2.52E+00	7.17E-05
	Pr-144	2.52E+00	7.17E-05
	Pr-144m	3.03E-02	8.62E-07
	Pm-147	6.16E+00	1.75E-04
	Sm-151	6.02E-02	1.71E-06
	Eu-152	9.19E-04	2.61E-08
	Eu-154	1.58E-01	4.48E-06
	Eu-155	1.25E-01	3.55E-06
	Tl-208	7.63E-05	2.17E-09
	Pb-212	2.02E-04	5.74E-09
	Bi-212	2.02E-04	5.74E-09
	Po-212	1.30E-04	3.70E-09
	Po-216	2.02E-04	5.74E-09
	Ra-224	2.02E-04	5.74E-09
	Ra-228	1.21E-03	3.43E-08
	Ac-228	1.21E-03	3.43E-08
	Th-228	2.02E-04	5.74E-09
	Th-231	1.16E-03	3.30E-08
	Th-232	1.23E-02	3.48E-07
	Th-234	1.49E+00	4.23E-05
	Pa-234	1.53E-04	4.33E-09
	Pa-234m	1.49E+00	4.23E-05
	U-235	1.16E-03	3.29E-08
	U-238	1.56E+00	4.44E-05
	Pu-238	1.90E-01	5.39E-06
	Pu-239	1.84E-03	5.22E-08
	Pu-240	9.19E-04	2.61E-08
	Pu-241	2.12E-01	6.03E-06
	Am-241	2.76E-03	7.83E-08

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: ORR

Waste Handling: CH_non-alpha

5 SUPERCOMPACTION

Thruput Volume
m3/year

5.79E+02

Thruput Mass
kg/year

8.68E+04

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.96E+00	2.93E-10
C-14	1.15E-03	1.73E-13
Cr-51	5.11E-02	7.66E-12
Mn-54	2.27E-01	3.41E-11
Fe-55	3.63E-01	5.44E-11
Fe-59	3.28E-03	4.92E-13
Co-58	2.50E-01	3.76E-11
Co-60	1.42E+00	2.13E-10
Ni-59	4.69E-03	7.03E-13
Ni-63	7.62E-01	1.14E-10
Sr-90	8.67E+00	1.30E-09
Y-90	8.67E+00	1.30E-09
Zr-95	3.98E-03	5.97E-13
Tc-99	3.82E-03	5.74E-13
Ru-106	8.30E-01	1.25E-10
Rh-106	8.30E-01	1.25E-10
Sb-125	2.38E-01	3.58E-11
Te-125m	5.82E-02	8.73E-12
Cs-134	1.23E+00	1.85E-10
Cs-137	9.26E+00	1.39E-09
Ba-137m	8.77E+00	1.32E-09
Ce-144	2.78E+00	4.17E-10
Pr-144	2.78E+00	4.17E-10
Pr-144m	3.34E-02	5.01E-12
Pm-147	6.78E+00	1.02E-09
Sm-151	6.63E-02	9.95E-12
Eu-152	1.01E-03	1.52E-13
Eu-154	1.74E-01	2.60E-11
Eu-155	1.38E-01	2.06E-11
Tl-208	1.78E-06	2.67E-16
Pb-212	4.71E-06	7.07E-16
Bi-212	4.71E-06	7.07E-16
Po-212	3.04E-06	4.55E-16
Po-216	4.71E-06	7.07E-16
Ra-224	4.71E-06	7.07E-16
Ra-228	2.82E-05	4.22E-15
Ac-228	2.82E-05	4.22E-15
Th-228	4.71E-06	7.07E-16
Th-231	2.71E-05	4.07E-15
Th-232	2.86E-04	4.29E-14
Th-234	3.47E-02	5.21E-12
Pa-234	3.56E-06	5.34E-16
Pa-234m	3.47E-02	5.21E-12
U-235	2.70E-05	4.05E-15
U-238	4.88E-02	7.32E-12
Pu-238	2.09E-01	3.14E-11
Pu-239	2.02E-03	3.04E-13
Pu-240	1.01E-03	1.52E-13
Pu-241	2.34E-01	3.51E-11
Am-241	3.04E-03	4.56E-13

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal			
Waste Stream: LLW			
Treatment Site: ORR		Waste Handling: CH_non-alpha	
6 SIZE_REDUCTION	Thruput Volume m3/year	1.19E+04	Thruput Mass kg/year 9.49E+07
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
	H-3	3.64E+02	1.56E-05
	C-14	1.82E-01	7.81E-09
	Cr-51	1.34E+03	5.74E-05
	Mn-54	2.56E+03	1.10E-04
	Fe-55	9.49E+03	4.08E-04
	Fe-59	8.58E+01	3.69E-06
	Co-58	3.43E+03	1.48E-04
	Co-60	2.68E+04	1.15E-03
	Ni-59	1.23E+02	5.27E-06
	Ni-63	1.74E+04	7.49E-04
	Sr-90	8.66E+01	3.73E-06
	Y-90	8.66E+01	3.73E-06
	Zr-95	1.04E+02	4.48E-06
	Tc-99	3.74E-01	1.61E-08
	Ru-106	5.95E+00	2.56E-07
	Rh-106	5.95E+00	2.56E-07
	Sb-125	1.71E+00	7.35E-08
	Te-125m	4.17E-01	1.80E-08
	Cs-134	4.92E+01	2.12E-06
	Cs-137	1.20E+02	5.15E-06
	Ba-137m	1.13E+02	4.87E-06
	Ce-144	1.99E+01	8.57E-07
	Pr-144	1.99E+01	8.57E-07
	Pr-144m	2.40E-01	1.03E-08
	Pm-147	4.86E+01	2.09E-06
	Sm-151	4.76E-01	2.04E-08
	Eu-152	7.26E-03	3.12E-10
	Eu-154	1.25E+00	5.35E-08
	Eu-155	9.87E-01	4.25E-08
	Tl-208	1.67E-04	7.17E-12
	Pb-212	4.41E-04	1.90E-11
	Bi-212	4.41E-04	1.90E-11
	Po-212	2.84E-04	1.22E-11
	Po-216	4.41E-04	1.90E-11
	Ra-224	4.41E-04	1.90E-11
	Ra-228	2.64E-03	1.13E-10
	Ac-228	2.64E-03	1.13E-10
	Th-228	4.41E-04	1.90E-11
	Th-231	2.54E-03	1.09E-10
	Th-232	2.68E-02	1.15E-09
	Th-234	3.25E+00	1.40E-07
	Pa-234	3.33E-04	1.43E-11
	Pa-234m	3.25E+00	1.40E-07
	U-235	2.53E-03	1.09E-10
	U-238	5.46E+00	2.35E-07
	Pu-238	1.50E+00	6.45E-08
	Pu-239	1.45E-02	6.24E-10
	Pu-240	7.26E-03	3.12E-10
	Pu-241	1.68E+00	7.21E-08
	Am-241	2.18E-02	9.37E-10

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: ORR

Waste Handling: CH_non-alpha

95 INSPECT_RECEIVE	Thruput Volume m3/year	1.90E+04	Thruput Mass kg/year	9.60E+07
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	8.72E+04		.	
C-14	1.83E-01		.	
Cr-51	1.34E+03		.	
Mn-54	2.56E+03		.	
Fe-55	9.49E+03		.	
Fe-59	8.58E+01		.	
Co-58	3.43E+03		.	
Co-60	2.68E+04		.	
Ni-59	1.23E+02		.	
Ni-63	1.74E+04		.	
Sr-90	1.03E+02		.	
Y-90	1.03E+02		.	
Zr-95	1.04E+02		.	
Tc-99	3.79E-01		.	
Ru-106	7.54E+00		.	
Rh-106	7.54E+00		.	
Sb-125	2.16E+00		.	
Te-125m	5.29E-01		.	
Cs-134	5.13E+01		.	
Cs-137	1.37E+02		.	
Ba-137m	1.30E+02		.	
Ce-144	2.52E+01		.	
Pr-144	2.52E+01		.	
Pr-144m	3.03E-01		.	
Pm-147	6.16E+01		.	
Sm-151	6.02E-01		.	
Eu-152	9.19E-03		.	
Eu-154	1.58E+00		.	
Eu-155	1.25E+00		.	
Tl-208	2.45E-04		.	
Pb-212	6.48E-04		.	
Bi-212	6.48E-04		.	
Po-212	4.17E-04		.	
Po-216	6.48E-04		.	
Ra-224	6.48E-04		.	
Ra-228	3.87E-03		.	
Ac-228	3.87E-03		.	
Th-228	6.48E-04		.	
Th-231	3.73E-03		.	
Th-232	3.93E-02		.	
Th-234	4.78E+00		.	
Pa-234	4.89E-04		.	
Pa-234m	4.78E+00		.	
U-235	3.71E-03		.	
U-238	7.00E+00		.	
Pu-238	1.90E+00		.	
Pu-239	1.84E-02		.	
Pu-240	9.19E-03		.	
Pu-241	2.12E+00		.	
Am-241	2.76E-02		.	

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal			
Waste Stream: LLW			
Treatment Site: SRS		Waste Handling: CH non-alpha	
1 INCINERATION	Thruput Volume m3/year	1.45E+03	Thruput Mass kg/year 2.21E+05
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
	H-3	3.77E+02	3.70E+02
	Cr-51	9.98E-01	2.83E-05
	Mn-54	1.90E+00	5.39E-05
	Fe-55	7.09E+00	2.01E-04
	Fe-59	6.41E-02	1.82E-06
	Co-58	2.55E+00	7.24E-05
	Co-60	2.00E+01	5.69E-04
	Ni-59	9.16E-02	2.60E-06
	Ni-63	1.31E+01	3.72E-04
	Sr-90	7.69E+00	2.18E-04
	Y-90	7.69E+00	2.18E-04
	Zr-95	7.78E-02	2.21E-06
	Tc-99	1.37E-03	3.90E-08
	Ru-106	7.51E-01	2.13E-05
	Rh-106	7.51E-01	2.13E-05
	Sb-125	2.15E-01	6.12E-06
	Te-125m	5.26E-02	1.49E-06
	Cs-134	8.73E-01	2.48E-05
	Cs-137	8.06E+00	2.28E-04
	Ba-137m	7.63E+00	2.16E-04
	Ce-144	2.51E+00	7.14E-05
	Pr-144	2.51E+00	7.14E-05
	Pr-144m	3.02E-02	8.58E-07
	Pm-147	6.13E+00	1.74E-04
	Sm-151	6.00E-02	1.70E-06
	Eu-152	9.16E-04	2.60E-08
	Eu-154	1.57E-01	4.46E-06
	Eu-155	1.24E-01	3.53E-06
	Tl-208	6.53E-04	1.85E-08
	Pb-212	1.72E-03	4.91E-08
	Bi-212	1.72E-03	4.91E-08
	Po-212	1.11E-03	3.16E-08
	Po-216	1.72E-03	4.91E-08
	Ra-224	1.72E-03	4.91E-08
	Ra-228	1.03E-02	2.93E-07
	Ac-228	1.03E-02	2.93E-07
	Th-228	1.72E-03	4.91E-08
	Th-231	9.95E-03	2.82E-07
	Th-232	1.04E-01	2.97E-06
	Th-234	1.27E+01	3.62E-04
	Pa-234	1.30E-03	3.71E-08
	Pa-234m	1.27E+01	3.62E-04
	U-235	9.91E-03	2.81E-07
	U-238	1.27E+01	3.62E-04
	Pu-238	1.89E-01	5.37E-06
	Pu-239	1.83E-03	5.20E-08
	Pu-240	9.16E-04	2.60E-08
	Pu-241	2.11E-01	6.00E-06
	Am-241	2.74E-03	7.80E-08

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Waste Handling: CH non-alpha

2 SOLIDIFICATION

Thruput Volume	2.02E+03	Thruput Mass	2.42E+06
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	4.05E+02	6.07E+00
C-14	1.30E-03	8.89E-17
Cr-51	9.98E-01	6.79E-14
Mn-54	2.04E+00	1.39E-13
Fe-55	7.09E+00	4.82E-13
Fe-59	6.41E-02	4.36E-15
Co-58	2.68E+00	1.82E-13
Co-60	2.04E+01	1.39E-12
Ni-59	9.16E-02	6.23E-15
Ni-63	1.31E+01	8.91E-13
Sr-90	7.91E+00	5.38E-13
Y-90	7.91E+00	5.38E-13
Zr-95	7.78E-02	5.29E-15
Tc-99	3.99E-03	2.71E-16
Ru-106	7.54E-01	5.12E-14
Rh-106	7.54E-01	5.12E-14
Sb-125	2.16E-01	1.47E-14
Te-125m	5.28E-02	3.59E-15
Cs-134	1.18E+00	8.03E-14
Cs-137	8.49E+00	5.77E-13
Ba-137m	8.04E+00	5.46E-13
Ce-144	2.52E+00	1.71E-13
Pr-144	2.52E+00	1.71E-13
Pr-144m	3.03E-02	2.06E-15
Pm-147	6.16E+00	4.19E-13
Sm-151	6.02E-02	4.09E-15
Eu-152	9.19E-04	6.25E-17
Eu-154	1.57E-01	1.07E-14
Eu-155	1.25E-01	8.50E-15
Tl-208	6.54E-04	4.44E-17
Pb-212	1.73E-03	1.17E-16
Bi-212	1.73E-03	1.17E-16
Po-212	1.11E-03	7.58E-17
Po-216	1.73E-03	1.17E-16
Ra-224	1.73E-03	1.17E-16
Ra-228	1.03E-02	7.03E-16
Ac-228	1.03E-02	7.03E-16
Th-228	1.73E-03	1.17E-16
Th-231	9.96E-03	6.77E-16
Th-232	1.05E-01	7.14E-15
Th-234	1.27E+01	8.68E-13
Pa-234	1.30E-03	8.89E-17
Pa-234m	1.27E+01	8.68E-13
U-235	9.92E-03	6.74E-16
U-238	1.27E+01	8.69E-13
Pu-238	1.89E-01	1.29E-14
Pu-239	1.83E-03	1.25E-16
Pu-240	9.19E-04	6.25E-17
Pu-241	2.12E-01	1.44E-14
Am-241	2.75E-03	1.87E-16

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Waste Handling: CH non-alpha

5 SUPERCOMPACTION

Thruput Volume
m3/year

9.38E+03

Thruput Mass
kg/year

1.40E+06

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	1.99E+04	2.98E-06
C-14	6.54E-02	9.81E-12
Mn-54	7.36E+00	1.10E-09
Co-58	6.80E+00	1.02E-09
Co-60	1.96E+01	2.94E-09
Ni-63	1.82E-02	2.74E-12
Sr-90	1.08E+01	1.63E-09
Y-90	1.08E+01	1.63E-09
Tc-99	1.31E-01	1.96E-11
Ru-106	1.58E-01	2.38E-11
Rh-106	1.58E-01	2.38E-11
Sb-125	4.55E-02	6.83E-12
Te-125m	1.11E-02	1.66E-12
Cs-134	1.54E+01	2.31E-09
Cs-137	2.18E+01	3.27E-09
Ba-137m	2.06E+01	3.09E-09
Ce-144	5.31E-01	7.96E-11
Pr-144	5.31E-01	7.96E-11
Pr-144m	6.38E-03	9.58E-13
Pm-147	1.29E+00	1.94E-10
Sm-151	1.26E-02	1.90E-12
Eu-152	1.93E-04	2.90E-14
Eu-154	3.31E-02	4.97E-12
Eu-155	2.63E-02	3.94E-12
Tl-208	4.11E-05	6.17E-15
Pb-212	1.08E-04	1.63E-14
Bi-212	1.08E-04	1.63E-14
Po-212	7.01E-05	1.05E-14
Po-216	1.08E-04	1.63E-14
Ra-224	1.08E-04	1.63E-14
Ra-228	6.50E-04	9.76E-14
Ac-228	6.50E-04	9.76E-14
Th-228	1.08E-04	1.63E-14
Th-231	6.26E-04	9.40E-14
Th-232	6.60E-03	9.90E-13
Th-234	8.03E-01	1.20E-10
Pa-234	8.22E-05	1.23E-14
Pa-234m	8.03E-01	1.20E-10
U-235	6.24E-04	9.36E-14
U-238	1.59E+00	2.39E-10
Pu-238	3.99E-02	5.99E-12
Pu-239	3.87E-04	5.80E-14
Pu-240	1.93E-04	2.90E-14
Pu-241	4.47E-02	6.70E-12
Am-241	5.80E-04	8.71E-14

Table D.3 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Waste Stream: LLW

Treatment Site: SRS

Waste Handling: CH non-alpha

6 SIZE_REDUCTION	Thruput Volume m3/year	9.15E+02	Thruput Mass kg/year	7.32E+06
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	7.91E-03		3.40E-10	
Co-60	3.76E-02		1.61E-09	
Ni-63	7.48E-02		3.21E-09	
Sr-90	6.65E+00		2.86E-07	
Y-90	6.65E+00		2.86E-07	
Tc-99	1.18E-03		5.10E-11	
Ru-106	6.49E-01		2.79E-08	
Rh-106	6.49E-01		2.79E-08	
Sb-125	1.86E-01		8.01E-09	
Te-125m	4.55E-02		1.95E-09	
Cs-134	7.55E-01		3.24E-08	
Cs-137	6.96E+00		2.99E-07	
Ba-137m	6.59E+00		2.83E-07	
Ce-144	2.17E+00		9.34E-08	
Pr-144	2.17E+00		9.34E-08	
Pr-144m	2.61E-02		1.12E-09	
Pm-147	5.30E+00		2.28E-07	
Sm-151	5.18E-02		2.23E-09	
Eu-152	7.91E-04		3.40E-11	
Eu-154	1.35E-01		5.83E-09	
Eu-155	1.07E-01		4.63E-09	
Tl-208	1.59E-04		6.86E-12	
Pb-212	4.22E-04		1.81E-11	
Bi-212	4.22E-04		1.81E-11	
Po-212	2.72E-04		1.17E-11	
Po-216	4.22E-04		1.81E-11	
Ra-224	4.22E-04		1.81E-11	
Ra-228	2.52E-03		1.08E-10	
Ac-228	2.52E-03		1.08E-10	
Th-228	4.22E-04		1.81E-11	
Th-231	2.43E-03		1.04E-10	
Th-232	2.56E-02		1.10E-09	
Th-234	3.11E+00		1.34E-07	
Pa-234	3.19E-04		1.37E-11	
Pa-234m	3.11E+00		1.34E-07	
U-235	2.42E-03		1.04E-10	
U-238	3.11E+00		1.34E-07	
Pu-238	4.77E-01		2.05E-08	
Pu-239	2.55E-02		1.10E-09	
Pu-240	8.47E-02		3.64E-09	
Pu-241	1.17E+01		5.05E-07	
Am-241	2.85E-03		1.22E-10	
Cm-242	6.72E-03		2.88E-10	
Cm-244	2.40E-03		1.03E-10	
95 INSPECT_RECEIVE	Thruput Volume m3/year	1.27E+02	Thruput Mass kg/year	1.91E+04
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	1.99E+04		.	

Table D.4 Radionuclide Thruput and Air Release by Site and Technology

Alternative: Centralized #5 -- 1 Site -- 1 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

1 INCINERATION	Thruput Volume m3/year	1.15E+04	Thruput Mass kg/year	1.93E+06
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
H-3	4.24E+04	4.17E+04		
C-14	2.67E-01	2.66E-01		
Cr-51	1.35E+00	3.84E-05		
Mn-54	3.26E+01	9.27E-04		
Fe-55	9.94E+00	2.82E-04		
Fe-59	8.70E-02	2.47E-06		
Co-58	3.12E+01	8.87E-04		
Co-60	1.07E+02	3.06E-03		
Ni-59	1.24E-01	3.53E-06		
Ni-63	1.80E+01	5.13E-04		
Sr-90	7.55E+01	2.14E-03		
Y-90	7.55E+01	2.14E-03		
Zr-95	1.05E-01	3.00E-06		
Tc-99	5.41E-01	1.53E-05		
Ru-106	3.67E+00	1.04E-04		
Rh-106	3.67E+00	1.04E-04		
Sb-125	1.05E+00	2.99E-05		
Te-125m	2.57E-01	7.31E-06		
Cs-134	6.65E+01	1.88E-03		
Cs-137	1.21E+02	3.45E-03		
Ba-137m	1.15E+02	3.26E-03		
Ce-144	1.22E+01	3.49E-04		
Pr-144	1.22E+01	3.49E-04		
Pr-144m	1.47E-01	4.19E-06		
Pm-147	3.00E+01	8.52E-04		
Sm-151	2.93E-01	8.33E-06		
Eu-152	4.48E-03	1.27E-07		
Eu-154	7.68E-01	2.18E-05		
Eu-155	6.09E-01	1.73E-05		
Tl-208	1.73E-02	4.92E-07		
Pb-212	4.59E-02	1.30E-06		
Bi-212	4.59E-02	1.30E-06		
Po-212	2.96E-02	8.40E-07		
Po-216	4.59E-02	1.30E-06		
Ra-224	4.59E-02	1.30E-06		
Ra-228	2.74E-01	7.80E-06		
Ac-228	2.74E-01	7.80E-06		
Th-228	4.59E-02	1.30E-06		
Th-231	2.64E-01	7.51E-06		
Th-232	2.78E+00	7.91E-05		
Th-234	3.38E+02	9.62E-03		
Pa-234	3.47E-02	9.85E-07		
Pa-234m	3.38E+02	9.62E-03		
U-235	2.63E-01	7.48E-06		
U-238	3.42E+02	9.71E-03		
Np-237	7.30E-04	2.07E-08		
Pu-238	5.39E+00	1.53E-04		
Pu-239	3.50E-01	9.96E-06		
Pu-240	1.19E+00	3.40E-05		
Pu-241	1.65E+02	4.69E-03		
Am-241	2.02E-02	5.75E-07		
Cm-242	9.55E-02	2.71E-06		
Cm-244	3.41E-02	9.68E-07		

Table D.4 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Centralized #5 -- 1 Site -- 1 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

2 SOLIDIFICATION

Thruput Volume	6.65E+02	Thruput Mass	8.33E+05
m3/year		kg/year	

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	8.94E+03	1.34E+02
C-14	1.79E-02	1.21E-15
Cr-51	2.36E+00	1.60E-13
Mn-54	3.65E+01	2.48E-12
Fe-55	1.70E+01	1.16E-12
Fe-59	1.51E-01	1.03E-14
Co-58	3.56E+01	2.42E-12
Co-60	1.40E+02	9.58E-12
Ni-59	2.16E-01	1.47E-14
Ni-63	4.61E+01	3.13E-12
Sr-90	1.40E+03	9.53E-11
Y-90	1.40E+03	9.53E-11
Zr-95	1.84E-01	1.25E-14
Tc-99	8.13E-01	5.53E-14
Ru-106	1.32E+02	9.03E-12
Rh-106	1.32E+02	9.03E-12
Sb-125	3.81E+01	2.59E-12
Te-125m	9.32E+00	6.33E-13
Cs-134	2.20E+02	1.50E-11
Cs-137	1.51E+03	1.02E-10
Ba-137m	1.43E+03	9.74E-11
Ce-144	4.45E+02	3.02E-11
Pr-144	4.45E+02	3.02E-11
Pr-144m	5.34E+00	3.63E-13
Pm-147	1.08E+03	7.38E-11
Sm-151	1.06E+01	7.22E-13
Eu-152	1.62E-01	1.10E-14
Eu-154	2.78E+01	1.89E-12
Eu-155	2.20E+01	1.49E-12
Tl-208	1.73E-02	1.18E-15
Pb-212	4.59E-02	3.12E-15
Bi-212	4.59E-02	3.12E-15
Po-212	2.96E-02	2.01E-15
Po-216	4.59E-02	3.12E-15
Ra-224	4.59E-02	3.12E-15
Ra-228	2.74E-01	1.86E-14
Ac-228	2.74E-01	1.86E-14
Th-228	4.59E-02	3.12E-15
Th-231	2.64E-01	1.79E-14
Th-232	2.78E+00	1.89E-13
Th-234	3.39E+02	2.30E-11
Pa-234	3.47E-02	2.36E-15
Pa-234m	3.39E+02	2.30E-11
U-235	2.63E-01	1.79E-14
U-238	3.42E+02	2.32E-11
Np-237	7.46E-04	5.07E-17
Pu-238	3.79E+01	2.58E-12
Pu-239	6.66E-01	4.53E-14
Pu-240	1.35E+00	9.22E-14
Pu-241	2.02E+02	1.37E-11
Am-241	4.93E-01	3.35E-14
Cm-242	9.55E-02	6.50E-15
Cm-244	2.45E-01	1.66E-14

Table D.4 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Centralized #5 -- 1 Site -- 1 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

5 SUPERCOMPACTION	Thruput Volume m3/year	2.50E+04	Thruput Mass kg/year	3.76E+06
Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)		
H-3	4.11E+05	6.16E-05		
C-14	8.82E-01	1.32E-10		
Cr-51	3.78E+01	5.68E-09		
Mn-54	1.71E+02	2.57E-08		
Fe-55	2.69E+02	4.03E-08		
Fe-59	2.43E+00	3.64E-10		
Co-58	1.88E+02	2.82E-08		
Co-60	1.39E+03	2.09E-07		
Ni-59	3.47E+00	5.21E-10		
Ni-63	1.23E+03	1.85E-07		
Sr-90	6.59E+04	9.88E-06		
Y-90	6.59E+04	9.88E-06		
Zr-95	2.95E+00	4.43E-10		
Tc-99	1.35E+01	2.02E-09		
Ru-106	6.42E+03	9.63E-07		
Rh-106	6.42E+03	9.63E-07		
Sb-125	1.84E+03	2.76E-07		
Te-125m	4.50E+02	6.75E-08		
Cs-134	7.67E+03	1.15E-06		
Cs-137	6.91E+04	1.03E-05		
Ba-137m	6.54E+04	9.82E-06		
Ce-144	2.14E+04	3.22E-06		
Pr-144	2.14E+04	3.22E-06		
Pr-144m	2.58E+02	3.87E-08		
Pm-147	5.24E+04	7.87E-06		
Sm-151	5.12E+02	7.69E-08		
Eu-152	7.83E+00	1.17E-09		
Eu-154	1.34E+03	2.01E-07		
Eu-155	1.06E+03	1.59E-07		
Tl-208	2.29E-04	3.44E-14		
Pb-212	6.07E-04	9.11E-14		
Bi-212	6.07E-04	9.11E-14		
Po-212	3.91E-04	5.87E-14		
Po-216	6.07E-04	9.11E-14		
Ra-224	6.07E-04	9.11E-14		
Ra-228	3.63E-03	5.44E-13		
Ac-228	3.63E-03	5.44E-13		
Th-228	6.07E-04	9.11E-14		
Th-231	3.49E-03	5.24E-13		
Th-232	3.68E-02	5.52E-12		
Th-234	4.48E+00	6.72E-10		
Pa-234	4.59E-04	6.88E-14		
Pa-234m	4.48E+00	6.72E-10		
U-235	3.48E-03	5.22E-13		
U-238	1.52E+01	2.28E-09		
Np-237	7.78E-04	1.16E-13		
Pu-238	1.61E+03	2.42E-07		
Pu-239	1.56E+01	2.35E-09		
Pu-240	7.87E+00	1.18E-09		
Pu-241	1.81E+03	2.72E-07		
Am-241	2.34E+01	3.52E-09		
Cm-242	3.20E-03	4.81E-13		
Cm-244	1.05E+01	1.58E-09		

Table D.4 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Centralized #5 -- 1 Site -- 1 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

6 SIZE_REDUCTION	Thruput Volume m3/year	3.81E+04	Thruput Mass kg/year	3.05E+08
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	4.34E+03		1.86E-04	
C-14	2.14E-04		9.22E-12	
Cr-51	1.84E+04		7.94E-04	
Mn-54	3.51E+04		1.51E-03	
Fe-55	1.31E+05		5.64E-03	
Fe-59	1.18E+03		5.10E-05	
Co-58	4.72E+04		2.03E-03	
Co-60	3.70E+05		1.59E-02	
Ni-59	1.69E+03		7.28E-05	
Ni-63	2.40E+05		1.03E-02	
Sr-90	6.65E+02		2.86E-05	
Y-90	6.65E+02		2.86E-05	
Zr-95	1.44E+03		6.19E-05	
Tc-99	1.19E-01		5.13E-09	
Ru-106	6.49E+01		2.79E-06	
Rh-106	6.49E+01		2.79E-06	
Sb-125	1.86E+01		8.02E-07	
Te-125m	4.55E+00		1.95E-07	
Cs-134	7.56E+01		3.25E-06	
Cs-137	6.97E+02		2.99E-05	
Ba-137m	6.60E+02		2.83E-05	
Ce-144	2.17E+02		9.35E-06	
Pr-144	2.17E+02		9.35E-06	
Pr-144m	2.61E+00		1.12E-07	
Pm-147	5.30E+02		2.28E-05	
Sm-151	5.19E+00		2.23E-07	
Eu-152	7.92E-02		3.40E-09	
Eu-154	1.35E+01		5.84E-07	
Eu-155	1.07E+01		4.63E-07	
Tl-208	6.13E-04		2.63E-11	
Pb-212	1.62E-03		6.97E-11	
Bi-212	1.62E-03		6.97E-11	
Po-212	1.04E-03		4.49E-11	
Po-216	1.62E-03		6.97E-11	
Ra-224	1.62E-03		6.97E-11	
Ra-228	9.70E-03		4.17E-10	
Ac-228	9.70E-03		4.17E-10	
Th-228	1.62E-03		6.97E-11	
Th-231	9.34E-03		4.01E-10	
Th-232	9.84E-02		4.23E-09	
Th-234	1.19E+01		5.14E-07	
Pa-234	1.22E-03		5.27E-11	
Pa-234m	1.19E+01		5.14E-07	
U-235	9.30E-03		4.00E-10	
U-238	1.19E+01		5.15E-07	
Np-237	1.26E-04		5.42E-12	
Pu-238	1.67E+01		7.20E-07	
Pu-239	1.87E-01		8.06E-09	
Pu-240	1.80E-01		7.76E-09	
Pu-241	3.22E+01		1.38E-06	
Am-241	2.38E-01		1.02E-08	
Cm-242	8.10E-03		3.48E-10	
Cm-244	2.89E-03		1.24E-10	

Table D.4 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Centralized #5 -- 1 Site -- 1 Site Disposal			
Waste Stream: LLW			
Treatment Site: Hanford		Waste Handling: CH non-alpha	
11 PACKAGING	Thruput Volume m3/year	9.14E+02	Thruput Mass kg/year 2.74E+06
	Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
	H-3	2.31E+00	9.94E-08
	Cr-51	5.89E+00	2.53E-07
	Mn-54	1.12E+01	4.82E-07
	Fe-55	4.19E+01	1.80E-06
	Fe-59	3.78E-01	1.62E-08
	Co-58	1.50E+01	6.48E-07
	Co-60	1.19E+02	5.13E-06
	Ni-59	5.41E-01	2.32E-08
	Ni-63	7.91E+01	3.40E-06
	Sr-90	2.01E+02	8.65E-06
	Y-90	2.01E+02	8.65E-06
	Zr-95	4.60E-01	1.97E-08
	Tc-99	3.59E-02	1.54E-09
	Ru-106	1.96E+01	8.44E-07
	Rh-106	1.96E+01	8.44E-07
	Sb-125	5.64E+00	2.42E-07
	Te-125m	1.37E+00	5.92E-08
	Cs-134	2.28E+01	9.81E-07
	Cs-137	2.10E+02	9.06E-06
	Ba-137m	1.99E+02	8.57E-06
	Ce-144	6.57E+01	2.82E-06
	Pr-144	6.57E+01	2.82E-06
	Pr-144m	7.90E-01	3.39E-08
	Pm-147	1.60E+02	6.89E-06
	Sm-151	1.56E+00	6.74E-08
	Eu-152	2.39E-02	1.02E-09
	Eu-154	4.10E+00	1.76E-07
	Eu-155	3.25E+00	1.40E-07
	Tl-208	2.82E-05	1.21E-12
	Pb-212	7.46E-05	3.20E-12
	Bi-212	7.46E-05	3.20E-12
	Po-212	4.81E-05	2.06E-12
	Po-216	7.46E-05	3.20E-12
	Ra-224	7.46E-05	3.20E-12
	Ra-228	4.46E-04	1.91E-11
	Ac-228	4.46E-04	1.91E-11
	Th-228	7.46E-05	3.20E-12
	Th-231	4.29E-04	1.84E-11
	Th-232	4.52E-03	1.94E-10
	Th-234	5.50E-01	2.36E-08
	Pa-234	5.64E-05	2.42E-12
	Pa-234m	5.50E-01	2.36E-08
	U-235	4.27E-04	1.84E-11
	U-238	5.50E-01	2.36E-08
	Pu-238	4.94E+00	2.12E-07
	Pu-239	4.78E-02	2.05E-09
	Pu-240	2.39E-02	1.02E-09
	Pu-241	5.53E+00	2.37E-07
	Am-241	7.18E-02	3.08E-09

Table D.4 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Centralized #5 -- 1 Site -- 1 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

95 INSPECT_RECEIVE	Thruput Volume m3/year	6.72E+04	Thruput Mass kg/year	2.85E+08
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
H-3	4.57E+05		.	
C-14	1.14E+00		.	
Cr-51	1.84E+04		.	
Mn-54	3.52E+04		.	
Fe-55	1.30E+05		.	
Fe-59	1.18E+03		.	
Co-58	4.72E+04		.	
Co-60	3.70E+05		.	
Ni-59	1.69E+03		.	
Ni-63	2.41E+05		.	
Sr-90	6.49E+04		.	
Y-90	6.49E+04		.	
Zr-95	1.43E+03		.	
Tc-99	1.38E+01		.	
Ru-106	6.32E+03		.	
Rh-106	6.32E+03		.	
Sb-125	1.81E+03		.	
Te-125m	4.43E+02		.	
Cs-134	7.61E+03		.	
Cs-137	6.82E+04		.	
Ba-137m	6.45E+04		.	
Ce-144	2.11E+04		.	
Pr-144	2.11E+04		.	
Pr-144m	2.54E+02		.	
Pm-147	5.16E+04		.	
Sm-151	5.04E+02		.	
Eu-152	7.70E+00		.	
Eu-154	1.32E+03		.	
Eu-155	1.04E+03		.	
Tl-208	1.79E-02		.	
Pb-212	4.75E-02		.	
Bi-212	4.75E-02		.	
Po-212	3.06E-02		.	
Po-216	4.75E-02		.	
Ra-224	4.75E-02		.	
Ra-228	2.84E-01		.	
Ac-228	2.84E-01		.	
Th-228	4.75E-02		.	
Th-231	2.73E-01		.	
Th-232	2.88E+00		.	
Th-234	3.50E+02		.	
Pa-234	3.59E-02		.	
Pa-234m	3.50E+02		.	
U-235	2.72E-01		.	
U-238	3.64E+02		.	
Np-237	1.63E-03		.	
Pu-238	1.59E+03		.	
Pu-239	1.58E+01		.	
Pu-240	9.04E+00		.	
Pu-241	1.96E+03		.	
Am-241	2.31E+01		.	
Cm-242	1.06E-01		.	
Cm-244	1.05E+01		.	

Table D.4 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Centralized #5 -- 1 Site -- 1 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH non-alpha

96 CERTIFY_SHIP

Thruput Volume
m3/year

3.18E+04

Thruput Mass
kg/year

3.52E+08

Nuclide	Activity (Ci/yr)	Air Release (Ci/yr)
H-3	4.16E+05	.
C-14	8.82E-01	.
Cr-51	1.85E+04	.
Mn-54	3.53E+04	.
Fe-55	1.31E+05	.
Fe-59	1.18E+03	.
Co-58	4.74E+04	.
Co-60	3.71E+05	.
Ni-59	1.69E+03	.
Ni-63	2.42E+05	.
Sr-90	2.27E+05	.
Y-90	2.27E+05	.
Zr-95	1.44E+03	.
Tc-99	1.42E+01	.
Ru-106	2.59E+05	.
Rh-106	2.59E+05	.
Sb-125	1.86E+03	.
Te-125m	4.56E+02	.
Cs-134	7.83E+03	.
Cs-137	5.55E+06	.
Ba-137m	5.25E+06	.
Ce-144	2.17E+04	.
Pr-144	2.17E+04	.
Pr-144m	2.62E+02	.
Pm-147	5.31E+04	.
Sm-151	5.20E+02	.
Eu-152	7.93E+00	.
Eu-154	1.36E+03	.
Eu-155	1.07E+03	.
Tl-208	1.82E-02	.
Pb-212	4.82E-02	.
Bi-212	4.82E-02	.
Po-212	3.10E-02	.
Po-216	4.82E-02	.
Ra-224	4.82E-02	.
Ra-228	2.88E-01	.
Ac-228	2.88E-01	.
Th-228	4.82E-02	.
Th-231	2.77E-01	.
Th-232	2.92E+00	.
Th-234	3.55E+02	.
Pa-234	3.64E-02	.
Pa-234m	3.55E+02	.
U-235	2.76E-01	.
U-238	3.69E+02	.
Np-237	1.63E-03	.
Pu-238	1.64E+03	.
Pu-239	1.62E+01	.
Pu-240	9.27E+00	.
Pu-241	2.01E+03	.
Am-241	2.38E+01	.
Cm-242	1.06E-01	.
Cm-244	1.05E+01	.

Table D.4 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Centralized #5 -- 1 Site -- 1 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH alpha

13 SHALLOW LAND BU	Thruput Volume m3/year		Thruput Mass kg/year	
	1.62E+02		4.55E+05	
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
Tl-208	2.46E-05		1.47E-11	
Pb-212	6.51E-05		3.91E-11	
Bi-212	6.51E-05		3.91E-11	
Po-212	4.19E-05		2.51E-11	
Po-216	6.51E-05		3.91E-11	
Ra-224	6.51E-05		3.91E-11	
Ra-228	3.89E-04		2.33E-10	
Ac-228	3.89E-04		2.33E-10	
Th-228	6.51E-05		3.91E-11	
Th-231	3.75E-04		2.25E-10	
Th-232	3.95E-03		2.37E-09	
Th-234	4.80E-01		2.88E-07	
Pa-234	4.92E-05		2.95E-11	
Pa-234m	4.80E-01		2.88E-07	
U-235	3.73E-04		2.24E-10	
U-238	4.80E-01		2.88E-07	
Pu-238	3.79E-01		2.27E-07	
Pu-239	2.89E-02		1.73E-08	
Pu-240	1.01E-01		6.08E-08	
Pu-241	1.39E+01		8.37E-06	
Am-241	5.79E-04		3.47E-10	
Cm-242	8.10E-03		4.86E-09	
Cm-244	2.89E-03		1.73E-09	
21 a-INCINERATION	Thruput Volume m3/year		Thruput Mass kg/year	
	2.79E+03		4.19E+05	
Nuclide	Activity (Ci/yr)		Air Release (Ci/yr)	
Tl-208	2.45E-05		6.97E-10	
Pb-212	6.50E-05		1.84E-09	
Bi-212	6.50E-05		1.84E-09	
Po-212	4.19E-05		1.19E-09	
Po-216	6.50E-05		1.84E-09	
Ra-224	6.50E-05		1.84E-09	
Ra-228	3.88E-04		1.10E-08	
Ac-228	3.88E-04		1.10E-08	
Th-228	6.50E-05		1.84E-09	
Th-231	3.74E-04		1.06E-08	
Th-232	3.94E-03		1.12E-07	
Th-234	4.79E-01		1.36E-05	
Pa-234	4.91E-05		1.39E-09	
Pa-234m	4.79E-01		1.36E-05	
U-235	3.72E-04		1.05E-08	
U-238	4.79E-01		1.36E-05	
Pu-238	3.78E-01		1.07E-05	
Pu-239	2.89E-02		8.20E-07	
Pu-240	1.01E-01		2.87E-06	
Pu-241	1.39E+01		3.95E-04	
Am-241	5.78E-04		1.64E-08	
Cm-242	8.09E-03		2.29E-07	
Cm-244	2.89E-03		8.20E-08	

Table D.4 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Centralized #5 -- 1 Site -- 1 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH alpha

22 a-SOLIDIFICATION	Thruput Volume		Thruput Mass	
	m3/year	1.24E+02	kg/year	1.53E+05
Nuclide	Activity		Air Release	
	(Ci/yr)		(Ci/yr)	
Tl-208	2.45E-05		1.67E-18	
Pb-212	6.50E-05		4.42E-18	
Bi-212	6.50E-05		4.42E-18	
Po-212	4.19E-05		2.84E-18	
Po-216	6.50E-05		4.42E-18	
Ra-224	6.50E-05		4.42E-18	
Ra-228	3.88E-04		2.64E-17	
Ac-228	3.88E-04		2.64E-17	
Th-228	6.50E-05		4.42E-18	
Th-231	3.74E-04		2.54E-17	
Th-232	3.94E-03		2.68E-16	
Th-234	4.79E-01		3.26E-14	
Pa-234	4.91E-05		3.34E-18	
Pa-234m	4.79E-01		3.26E-14	
U-235	3.72E-04		2.53E-17	
U-238	4.79E-01		3.26E-14	
Pu-238	3.78E-01		2.57E-14	
Pu-239	2.89E-02		1.96E-15	
Pu-240	1.01E-01		6.87E-15	
Pu-241	1.39E+01		9.47E-13	
Am-241	5.78E-04		3.93E-17	
Cm-242	8.09E-03		5.50E-16	
Cm-244	2.89E-03		1.96E-16	
25 a-SUPERCOMPACTION	Thruput Volume		Thruput Mass	
	m3/year	5.87E+00	kg/year	8.81E+02
Nuclide	Activity		Air Release	
	(Ci/yr)		(Ci/yr)	
Tl-208	5.17E-08		7.75E-18	
Pb-212	1.36E-07		2.05E-17	
Bi-212	1.36E-07		2.05E-17	
Po-212	8.82E-08		1.32E-17	
Po-216	1.36E-07		2.05E-17	
Ra-224	1.36E-07		2.05E-17	
Ra-228	8.17E-07		1.22E-16	
Ac-228	8.17E-07		1.22E-16	
Th-228	1.36E-07		2.05E-17	
Th-231	7.87E-07		1.18E-16	
Th-232	8.29E-06		1.24E-15	
Th-234	1.00E-03		1.51E-13	
Pa-234	1.03E-07		1.55E-17	
Pa-234m	1.00E-03		1.51E-13	
U-235	7.84E-07		1.17E-16	
U-238	1.00E-03		1.51E-13	
Pu-238	7.96E-04		1.19E-13	
Pu-239	6.07E-05		9.11E-15	
Pu-240	2.12E-04		3.19E-14	
Pu-241	2.93E-02		4.39E-12	
Am-241	1.21E-06		1.82E-16	
Cm-242	1.70E-05		2.55E-15	
Cm-244	6.08E-06		9.12E-16	

Table D.4 Radionuclide Thruput and Air Release by Site and Technology--Cont.

Alternative: Centralized #5 -- 1 Site -- 1 Site Disposal

Waste Stream: LLW

Treatment Site: Hanford

Waste Handling: CH alpha

95 INSPECT_RECEIVE	Thruput Volume		Thruput Mass	
	m3/year	2.80E+03	kg/year	4.20E+05
Nuclide	Activity		Air Release	
	(Ci/yr)		(Ci/yr)	
Tl-208	2.46E-05		.	
Pb-212	6.51E-05		.	
Bi-212	6.51E-05		.	
Po-212	4.19E-05		.	
Po-216	6.51E-05		.	
Ra-224	6.51E-05		.	
Ra-228	3.89E-04		.	
Ac-228	3.89E-04		.	
Th-228	6.51E-05		.	
Th-231	3.75E-04		.	
Th-232	3.95E-03		.	
Th-234	4.80E-01		.	
Pa-234	4.92E-05		.	
Pa-234m	4.80E-01		.	
U-235	3.73E-04		.	
U-238	4.80E-01		.	
Pu-238	3.79E-01		.	
Pu-239	2.89E-02		.	
Pu-240	1.01E-01		.	
Pu-241	1.39E+01		.	
Am-241	5.79E-04		.	
Cm-242	8.10E-03		.	
Cm-244	2.89E-03		.	
96 CERTIFY_SHIP	Thruput Volume		Thruput Mass	
	m3/year	1.62E+02	kg/year	4.55E+05
Nuclide	Activity		Air Release	
	(Ci/yr)		(Ci/yr)	
Tl-208	2.46E-05		.	
Pb-212	6.51E-05		.	
Bi-212	6.51E-05		.	
Po-212	4.19E-05		.	
Po-216	6.51E-05		.	
Ra-224	6.51E-05		.	
Ra-228	3.89E-04		.	
Ac-228	3.89E-04		.	
Th-228	6.51E-05		.	
Th-231	3.75E-04		.	
Th-232	3.95E-03		.	
Th-234	4.80E-01		.	
Pa-234	4.92E-05		.	
Pa-234m	4.80E-01		.	
U-235	3.73E-04		.	
U-238	4.80E-01		.	
Pu-238	3.79E-01		.	
Pu-239	2.89E-02		.	
Pu-240	1.01E-01		.	
Pu-241	1.39E+01		.	
Am-241	5.79E-04		.	
Cm-242	8.10E-03		.	
Cm-244	2.89E-03		.	

APPENDIX E:
VOLUME REDUCTION CASES —
TOTAL WASTE MANAGEMENT DISPOSAL VOLUME
AND AIR RELEASE BY SITE

APPENDIX E:

**VOLUME REDUCTION CASES —
TOTAL WASTE MANAGEMENT DISPOSAL VOLUME
AND AIR RELEASE BY SITE**

This appendix identifies the total disposal volume (m^3), total activity (Ci) of waste disposed of and the resulting air emissions (Ci) for each disposal site under Regionalized Alternatives 4 and 5 and Centralized Alternatives 3 and 5.

After the site is identified, the type of disposal technology assumed is noted (shallow land burial, tumulus, or belowground vault), and the total volume and mass of waste disposed of at the site are identified. Following this, each radionuclide disposed of is identified, along with the corresponding activity placed in disposal (in curies) and the total air emissions (in curies).

Belowground vault disposal at Hanford occurs for Hanford grout waste only. Saltstone disposal at Savannah River is included with the total waste disposal volume at that site because all waste is disposed of in belowground vaults. The saltstone-only volume, mass, and activities are as given on the cover page of Appendix B and in Table B.1, respectively.

Table E.1 Total Disposal Volume and Air Release by Site

LLW ALTERNATIVE: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Site: Hanford

SHALLOW LAND BURIAL		Volume: 2.10E+04 (m3)	Mass: 2.89E+08 (kg)
		Activity: 2.87E+05 (Ci)	Release: 1.72E-01 (Ci)
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)	
H-3	1.17E+05	7.04E-02	
C-14	6.34E+00	3.80E-06	
Cr-51	8.67E+02	5.20E-04	
Mn-54	2.66E+03	1.60E-03	
Fe-55	6.16E+03	3.70E-03	
Fe-59	5.57E+01	3.34E-05	
Co-58	3.15E+03	1.89E-03	
Co-60	2.02E+04	1.21E-02	
Ni-59	7.95E+01	4.77E-05	
Ni-63	1.15E+04	6.91E-03	
Sr-90	2.06E+04	1.23E-02	
Y-90	2.06E+04	1.23E-02	
Zr-95	6.76E+01	4.06E-05	
Tc-99	2.14E+01	1.28E-05	
Ru-106	1.89E+03	1.13E-03	
Rh-106	1.89E+03	1.13E-03	
Sb-125	5.41E+02	3.25E-04	
Te-125m	1.32E+02	7.93E-05	
Cs-134	4.28E+03	2.57E-03	
Cs-137	2.30E+04	1.38E-02	
Ba-137m	2.18E+04	1.31E-02	
Ce-144	6.31E+03	3.79E-03	
Pr-144	6.31E+03	3.79E-03	
Pr-144m	7.59E+01	4.55E-05	
Pm-147	1.54E+04	9.24E-03	
Sm-151	1.51E+02	9.04E-05	
Eu-152	2.30E+00	1.38E-06	
Eu-154	3.94E+02	2.37E-04	
Eu-155	3.13E+02	1.88E-04	
Tl-208	2.76E-03	1.66E-09	
Pb-212	7.31E-03	4.38E-09	
Bi-212	7.31E-03	4.38E-09	
Po-212	4.71E-03	2.83E-09	
Po-216	7.31E-03	4.38E-09	
Ra-224	7.31E-03	4.38E-09	
Ra-228	4.37E-02	2.62E-08	
Ac-228	4.37E-02	2.62E-08	
Th-228	7.31E-03	4.38E-09	
Th-231	4.21E-02	2.52E-08	
Th-232	4.43E-01	2.66E-07	
Th-234	5.39E+01	3.23E-05	
Pa-234	5.52E-03	3.31E-09	
Pa-234m	5.39E+01	3.23E-05	
U-235	4.19E-02	2.51E-08	
U-238	1.63E+02	9.77E-05	
Pu-238	4.75E+02	2.85E-04	
Pu-239	4.62E+00	2.77E-06	
Pu-240	2.36E+00	1.42E-06	
Pu-241	5.40E+02	3.24E-04	
Am-241	6.90E+00	4.14E-06	
Cm-242	5.03E-03	3.02E-09	
Cm-244	1.06E+02	6.34E-05	

Table E.1 Total Disposal Volume and Air Release by Site--Cont.

LLW ALTERNATIVE: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Site: Hanford

BELOW_GROUND_VAULT		Volume: 4.24E+05 (m3)	Mass: 7.63E+08 (kg)
		Activity: 2.30E+08 (Ci)	Release: 1.38E+02 (Ci)
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)	
Sr-90	3.22E+06	1.93E+00	
Y-90	3.22E+06	1.93E+00	
Ru-106	5.06E+06	3.04E+00	
Rh-106	5.06E+06	3.04E+00	
Cs-137	1.10E+08	6.58E+01	
Ba-137m	1.04E+08	6.22E+01	

Table E.1 Total Disposal Volume and Air Release by Site--Cont.

LLW ALTERNATIVE: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Site: INEL

SHALLOW_LAND_BURIAL	Volume: 5.11E+04 (m3)	Mass: 2.95E+08 (kg)
	Activity: 2.76E+06 (Ci)	Release: 1.65E+00 (Ci)

Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	3.07E+01	1.84E-05
Cr-51	6.01E+04	3.60E-02
Mn-54	1.14E+05	6.86E-02
Fe-55	4.27E+05	2.56E-01
Fe-59	3.86E+03	2.31E-03
Co-58	1.53E+05	9.21E-02
Co-60	1.20E+06	7.22E-01
Ni-59	5.51E+03	3.31E-03
Ni-63	7.83E+05	4.70E-01
Sr-90	5.02E+02	3.01E-04
Y-90	5.02E+02	3.01E-04
Zr-95	4.68E+03	2.81E-03
Tc-99	8.96E-02	5.38E-08
Ru-106	4.90E+01	2.94E-05
Rh-106	4.90E+01	2.94E-05
Sb-125	1.41E+01	8.44E-06
Te-125m	3.44E+00	2.06E-06
Cs-134	5.70E+01	3.42E-05
Cs-137	5.28E+02	3.17E-04
Ba-137m	5.00E+02	3.00E-04
Ce-144	1.64E+02	9.84E-05
Pr-144	1.64E+02	9.84E-05
Pr-144m	1.97E+00	1.18E-06
Pm-147	4.00E+02	2.40E-04
Sm-151	3.91E+00	2.35E-06
Eu-152	5.98E-02	3.59E-08
Eu-154	1.02E+01	6.15E-06
Eu-155	8.13E+00	4.88E-06
Pu-238	1.23E+01	7.40E-06
Pu-239	1.20E-01	7.17E-08
Pu-240	5.98E-02	3.59E-08
Pu-241	1.38E+01	8.28E-06
Am-241	1.79E-01	1.08E-07
Cm-242	4.88E-07	2.93E-13
Cm-244	1.74E-07	1.04E-13

Table E.1 Total Disposal Volume and Air Release by Site--Cont.

LLW ALTERNATIVE: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Site: LANL

SHALLOW_LAND_BURIAL		Volume: 7.16E+04 (m3)	Mass: 5.69E+08 (kg)
		Activity: 7.73E+06 (Ci)	Release: 4.64E+00 (Ci)
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)	
H-3	3.84E+06	2.31E+00	
C-14	3.04E+00	1.82E-06	
Cr-51	3.02E+02	1.81E-04	
Mn-54	9.17E+02	5.50E-04	
Fe-55	2.15E+03	1.29E-03	
Fe-59	1.94E+01	1.16E-05	
Co-58	1.09E+03	6.53E-04	
Co-60	1.06E+04	6.38E-03	
Ni-59	2.77E+01	1.66E-05	
Ni-63	1.12E+04	6.74E-03	
Sr-90	6.48E+05	3.89E-01	
Y-90	6.48E+05	3.89E-01	
Zr-95	2.36E+01	1.41E-05	
Tc-99	1.22E+02	7.30E-05	
Ru-106	6.32E+04	3.79E-02	
Rh-106	6.32E+04	3.79E-02	
Sb-125	1.82E+04	1.09E-02	
Te-125m	4.43E+03	2.66E-03	
Cs-134	7.42E+04	4.45E-02	
Cs-137	6.79E+05	4.08E-01	
Ba-137m	6.43E+05	3.86E-01	
Ce-144	2.12E+05	1.27E-01	
Pr-144	2.12E+05	1.27E-01	
Pr-144m	2.54E+03	1.53E-03	
Pm-147	5.17E+05	3.10E-01	
Sm-151	5.05E+03	3.03E-03	
Eu-152	7.71E+01	4.63E-05	
Eu-154	1.32E+04	7.93E-03	
Eu-155	1.05E+04	6.29E-03	
Tl-208	1.70E-01	1.02E-07	
Pb-212	4.49E-01	2.69E-07	
Bi-212	4.49E-01	2.69E-07	
Po-212	2.89E-01	1.74E-07	
Po-216	4.49E-01	2.69E-07	
Ra-224	4.49E-01	2.69E-07	
Ra-228	2.68E+00	1.61E-06	
Ac-228	2.68E+00	1.61E-06	
Th-228	4.49E-01	2.69E-07	
Th-231	2.58E+00	1.55E-06	
Th-232	2.72E+01	1.63E-05	
Th-234	3.31E+03	1.99E-03	
Pa-234	3.39E-01	2.03E-07	
Pa-234m	3.31E+03	1.99E-03	
U-235	2.57E+00	1.54E-06	
U-238	3.35E+03	2.01E-03	
Pu-238	1.60E+04	9.58E-03	
Pu-239	1.58E+02	9.49E-05	
Pu-240	9.11E+01	5.47E-05	
Pu-241	1.97E+04	1.18E-02	
Am-241	2.31E+02	1.39E-04	
Cm-242	1.12E+00	6.72E-07	
Cm-244	4.00E-01	2.40E-07	

Table E.1 Total Disposal Volume and Air Release by Site--Cont.

LLW ALTERNATIVE: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Site: NTS

SHALLOW_LAND_BURIAL		Volume: 1.97E+03 (m3)	Mass: 5.25E+06 (kg)
		Activity: 1.24E+03 (Ci)	Release: 7.43E-04 (Ci)
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)	
H-3	9.78E+02	5.87E-04	
C-14	1.52E-01	9.13E-08	
Cr-51	8.24E-06	4.94E-12	
Mn-54	1.71E+01	1.03E-05	
Fe-55	5.86E-05	3.51E-11	
Fe-59	5.29E-07	3.18E-13	
Co-58	1.58E+01	9.49E-06	
Co-60	4.57E+01	2.74E-05	
Ni-59	7.56E-07	4.54E-13	
Ni-63	1.30E-02	7.80E-09	
Sr-90	2.26E+01	1.36E-05	
Y-90	2.26E+01	1.36E-05	
Zr-95	6.43E-07	3.86E-13	
Tc-99	3.04E-01	1.83E-07	
Ru-106	1.12E-01	6.72E-08	
Rh-106	1.12E-01	6.72E-08	
Sb-125	3.21E-02	1.93E-08	
Te-125m	7.85E-03	4.71E-09	
Cs-134	3.56E+01	2.13E-05	
Cs-137	4.80E+01	2.88E-05	
Ba-137m	4.54E+01	2.72E-05	
Ce-144	3.75E-01	2.25E-07	
Pr-144	3.75E-01	2.25E-07	
Pr-144m	4.50E-03	2.70E-09	
Pm-147	9.15E-01	5.49E-07	
Sm-151	8.94E-03	5.36E-09	
Eu-152	1.37E-04	8.19E-11	
Eu-154	2.34E-02	1.40E-08	
Eu-155	1.86E-02	1.11E-08	
Tl-208	3.91E-10	2.35E-16	
Pb-212	1.04E-09	6.22E-16	
Bi-212	1.04E-09	6.22E-16	
Po-212	6.68E-10	4.01E-16	
Po-216	1.04E-09	6.22E-16	
Ra-224	1.04E-09	6.22E-16	
Ra-228	6.20E-09	3.72E-15	
Ac-228	6.20E-09	3.72E-15	
Th-228	1.04E-09	6.22E-16	
Th-231	5.96E-09	3.58E-15	
Th-232	6.29E-08	3.77E-14	
Th-234	7.65E-06	4.59E-12	
Pa-234	7.83E-10	4.70E-16	
Pa-234m	7.65E-06	4.59E-12	
U-235	5.94E-09	3.57E-15	
U-238	1.85E+00	1.11E-06	
Pu-238	1.11E-01	6.65E-08	
Pu-239	6.58E-03	3.95E-09	
Pu-240	2.22E-02	1.33E-08	
Pu-241	3.07E+00	1.84E-06	
Am-241	5.36E-04	3.21E-10	
Cm-242	1.77E-03	1.06E-09	
Cm-244	6.31E-04	3.78E-10	

Table E.1 Total Disposal Volume and Air Release by Site--Cont.

LLW ALTERNATIVE: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Site: ORR

Radionuclide	Volume: 2.40E+06 (m3)	Mass: 1.73E+09 (kg)
	Activity: 3.85E+07 (Ci)	Release: 1.71E+01 (Ci)

	Disposal Activity (Ci)	Air Release (Ci)

H-3	3.40E+07	2.00E+01
C-14	4.89E+01	2.93E-05
Cr-51	1.54E+04	9.26E-03
Mn-54	3.49E+04	2.09E-02
Fe-55	1.10E+05	6.58E-02
Fe-59	9.91E+02	5.95E-04
Co-58	4.45E+04	2.67E-02
Co-60	3.24E+05	1.94E-01
Ni-59	1.42E+03	8.49E-04
Ni-63	2.01E+05	1.21E-01
Sr-90	1.81E+04	1.08E-02
Y-90	1.81E+04	1.08E-02
Zr-95	1.20E+03	7.22E-04
Tc-99	9.99E+01	6.00E-05
Ru-106	1.09E+03	6.52E-04
Rh-106	1.09E+03	6.52E-04
Sb-125	3.12E+02	1.87E-04
Te-125m	7.62E+01	4.57E-05
Cs-134	1.27E+04	7.60E-03
Cs-137	2.67E+04	1.60E-02
Ba-137m	2.53E+04	1.52E-02
Ce-144	3.64E+03	2.18E-03
Pr-144	3.64E+03	2.18E-03
Pr-144m	4.37E+01	2.62E-05
Pm-147	8.88E+03	5.33E-03
Sm-151	8.68E+01	5.21E-05
Eu-152	1.33E+00	7.95E-07
Eu-154	2.27E+02	1.36E-04
Eu-155	1.80E+02	1.08E-04
Tl-208	3.71E-03	2.23E-09
Pb-212	9.82E-03	5.89E-09
Bi-212	9.82E-03	5.89E-09
Po-212	6.33E-03	3.80E-09
Po-216	9.82E-03	5.89E-09
Ra-224	9.82E-03	5.89E-09
Ra-228	5.87E-02	3.52E-08
Ac-228	5.87E-02	3.52E-08
Th-228	9.82E-03	5.89E-09
Th-231	5.65E-02	3.39E-08
Th-232	5.96E-01	3.57E-07
Th-234	7.24E+01	4.35E-05
Pa-234	7.42E-03	4.45E-09
Pa-234m	7.24E+01	4.35E-05
U-235	5.63E-02	3.38E-08
U-238	6.68E+02	4.01E-04
Pu-238	2.76E+02	1.65E-04
Pu-239	2.79E+00	1.68E-06
Pu-240	1.83E+00	1.10E-06
Pu-241	3.75E+02	2.25E-04
Am-241	3.98E+00	2.39E-06
Cm-242	4.00E-02	2.40E-08
Cm-244	1.43E-02	8.58E-09

Table E.1 Total Disposal Volume and Air Release by Site--Cont.

LLW ALTERNATIVE: Regionalized #4 -- 7 Site Treat -- 6 Site Disposal

Site: SRS

BELOW_GROUND_VAULT		Volume: 1.05E+06 (m3)	Mass: 2.37E+09 (kg)
		Activity: 1.82E+06 (Ci)	Release: 1.09E+00 (Ci)
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)	
H-3	6.75E+05	4.05E-01	
C-14	1.09E+01	6.53E-06	
Cr-51	1.95E+04	1.17E-02	
Mn-54	3.84E+04	2.31E-02	
Fe-55	1.39E+05	8.33E-02	
Fe-59	1.26E+03	7.53E-04	
Co-58	5.11E+04	3.06E-02	
Co-60	3.95E+05	2.37E-01	
Ni-59	1.79E+03	1.08E-03	
Ni-63	2.55E+05	1.53E-01	
Sr-90	4.23E+04	2.54E-02	
Y-90	4.23E+04	2.54E-02	
Zr-95	1.52E+03	9.14E-04	
Tc-99	1.28E+03	7.66E-04	
Ru-106	3.34E+03	2.01E-03	
Rh-106	3.34E+03	2.01E-03	
Sb-125	1.30E+03	7.78E-04	
Te-125m	2.33E+02	1.40E-04	
Cs-134	6.41E+03	3.84E-03	
Cs-137	4.02E+04	2.41E-02	
Ba-137m	3.80E+04	2.28E-02	
Ce-144	1.11E+04	6.69E-03	
Pr-144	1.11E+04	6.69E-03	
Pr-144m	1.34E+02	8.04E-05	
Pm-147	3.59E+04	2.15E-02	
Sm-151	2.66E+02	1.60E-04	
Eu-152	4.06E+00	2.44E-06	
Eu-154	6.96E+02	4.18E-04	
Eu-155	5.52E+02	3.31E-04	
Tl-208	8.54E-03	5.12E-09	
Pb-212	2.26E-02	1.36E-08	
Bi-212	2.26E-02	1.36E-08	
Po-212	1.46E-02	8.74E-09	
Po-216	2.26E-02	1.36E-08	
Ra-224	2.26E-02	1.36E-08	
Ra-228	1.35E-01	8.11E-08	
Ac-228	1.35E-01	8.11E-08	
Th-228	2.26E-02	1.36E-08	
Th-231	1.30E-01	7.81E-08	
Th-232	1.37E+00	8.23E-07	
Th-234	1.67E+02	1.00E-04	
Pa-234	1.71E-02	1.02E-08	
Pa-234m	1.67E+02	1.00E-04	
U-235	1.30E-01	7.78E-08	
U-238	2.99E+02	1.79E-04	
Pu-238	8.45E+02	5.07E-04	
Pu-239	8.64E+00	5.19E-06	
Pu-240	5.89E+00	3.54E-06	
Pu-241	1.19E+03	7.14E-04	
Am-241	1.22E+01	7.31E-06	
Cm-242	1.47E-01	8.80E-08	
Cm-244	5.24E-02	3.14E-08	

Table E.2 Total Disposal Volume and Air Release by Site

LLW ALTERNATIVE: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Site: Hanford

	Volume: 2.10E+04 (m3)	Mass: 2.89E+08 (kg)
SHALLOW_LAND_BURIAL	Activity: 2.87E+05 (Ci)	Release: 1.72E-01 (Ci)
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	1.17E+05	7.04E-02
C-14	6.34E+00	3.80E-06
Cr-51	8.67E+02	5.20E-04
Mn-54	2.66E+03	1.60E-03
Fe-55	6.16E+03	3.70E-03
Fe-59	5.57E+01	3.34E-05
Co-58	3.15E+03	1.89E-03
Co-60	2.02E+04	1.21E-02
Ni-59	7.95E+01	4.77E-05
Ni-63	1.15E+04	6.91E-03
Sr-90	2.06E+04	1.23E-02
Y-90	2.06E+04	1.23E-02
Zr-95	6.76E+01	4.06E-05
Tc-99	2.14E+01	1.28E-05
Ru-106	1.89E+03	1.13E-03
Rh-106	1.89E+03	1.13E-03
Sb-125	5.41E+02	3.25E-04
Te-125m	1.32E+02	7.93E-05
Cs-134	4.28E+03	2.57E-03
Cs-137	2.30E+04	1.38E-02
Ba-137m	2.18E+04	1.31E-02
Ce-144	6.31E+03	3.79E-03
Pr-144	6.31E+03	3.79E-03
Pr-144m	7.59E+01	4.55E-05
Pm-147	1.54E+04	9.24E-03
Sm-151	1.51E+02	9.04E-05
Eu-152	2.30E+00	1.38E-06
Eu-154	3.94E+02	2.37E-04
Eu-155	3.13E+02	1.88E-04
Tl-208	2.76E-03	1.66E-09
Pb-212	7.31E-03	4.38E-09
Bi-212	7.31E-03	4.38E-09
Po-212	4.71E-03	2.83E-09
Po-216	7.31E-03	4.38E-09
Ra-224	7.31E-03	4.38E-09
Ra-228	4.37E-02	2.62E-08
Ac-228	4.37E-02	2.62E-08
Th-228	7.31E-03	4.38E-09
Th-231	4.21E-02	2.52E-08
Th-232	4.43E-01	2.66E-07
Th-234	5.39E+01	3.23E-05
Pa-234	5.52E-03	3.31E-09
Pa-234m	5.39E+01	3.23E-05
U-235	4.19E-02	2.51E-08
U-238	1.63E+02	9.77E-05
Pu-238	4.75E+02	2.85E-04
Pu-239	4.62E+00	2.77E-06
Pu-240	2.36E+00	1.42E-06
Pu-241	5.40E+02	3.24E-04
Am-241	6.90E+00	4.14E-06
Cm-242	5.03E-03	3.02E-09
Cm-244	1.06E+02	6.34E-05

Table E.2 Total Disposal Volume and Air Release by Site--Cont.

LLW ALTERNATIVE: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Site: Hanford

	Volume: 4.24E+05 (m3)	Mass: 7.63E+08 (kg)
BELOW_GROUND_VAULT	Activity: 2.30E+08 (Ci)	Release: 1.38E+02 (Ci)
	-----	-----
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
-----	-----	-----
Sr-90	3.22E+06	1.93E+00
Y-90	3.22E+06	1.93E+00
Ru-106	5.06E+06	3.04E+00
Rh-106	5.06E+06	3.04E+00
Cs-137	1.10E+08	6.58E+01
Ba-137m	1.04E+08	6.22E+01
-----	-----	-----

Table E.2 Total Disposal Volume and Air Release by Site--Cont.

LLW ALTERNATIVE: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Site: INEL

SHALLOW_LAND_BURIAL Volume: 5.97E+04 (m3) Mass: 6.19E+08 (kg)
 Activity: 2.76E+06 (Ci) Release: 1.66E+00 (Ci)

Radionuclide	Disposal Activity... (Ci)	Air Release..... (Ci)
H-3	2.32E+03	1.39E-03
C-14	1.84E+00	1.10E-06
Cr-51	6.01E+04	3.60E-02
Mn-54	1.15E+05	6.87E-02
Fe-55	4.27E+05	2.56E-01
Fe-59	3.86E+03	2.31E-03
Co-58	1.54E+05	9.22E-02
Co-60	1.20E+06	7.22E-01
Ni-59	5.51E+03	3.31E-03
Ni-63	7.83E+05	4.70E-01
Sr-90	7.61E+02	4.57E-04
Y-90	7.61E+02	4.57E-04
Zr-95	4.68E+03	2.81E-03
Tc-99	3.76E+00	2.26E-06
Ru-106	4.90E+01	2.94E-05
Rh-106	4.90E+01	2.94E-05
Sb-125	1.41E+01	8.44E-06
Te-125m	3.44E+00	2.06E-06
Cs-134	4.85E+02	2.91E-04
Cs-137	1.09E+03	6.55E-04
Ba-137m	1.03E+03	6.20E-04
Ce-144	1.64E+02	9.84E-05
Pr-144	1.64E+02	9.84E-05
Pr-144m	1.97E+00	1.18E-06
Pm-147	4.00E+02	2.40E-04
Sm-151	3.91E+00	2.35E-06
Eu-152	5.98E-02	3.59E-08
Eu-154	1.02E+01	6.15E-06
Eu-155	8.13E+00	4.88E-06
Tl-208	2.46E-03	1.48E-09
Pb-212	6.52E-03	3.91E-09
Bi-212	6.52E-03	3.91E-09
Po-212	4.20E-03	2.52E-09
Po-216	6.52E-03	3.91E-09
Ra-224	6.52E-03	3.91E-09
Ra-228	3.89E-02	2.34E-08
Ac-228	3.89E-02	2.34E-08
Th-228	6.52E-03	3.91E-09
Th-231	3.75E-02	2.25E-08
Th-232	3.95E-01	2.37E-07
Th-234	4.81E+01	2.88E-05
Pa-234	4.92E-03	2.95E-09
Pa-234m	4.81E+01	2.88E-05
U-235	3.74E-02	2.24E-08
U-238	7.04E+01	4.22E-05
Pu-238	1.67E+01	1.00E-05
Pu-239	4.53E-01	2.72E-07
Pu-240	1.23E+00	7.36E-07
Pu-241	1.74E+02	1.05E-04
Am-241	1.86E-01	1.12E-07
Cm-242	9.33E-02	5.60E-08
Cm-244	3.33E-02	2.00E-08

Table E.2 Total Disposal Volume and Air Release by Site--Cont.

LLW ALTERNATIVE: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Site: LANL

SHALLOW_LAND_BURIAL Volume: 6.37E+04 (m3) Mass: 2.46E+08 (kg)
 Activity: 7.72E+06 (Ci) Release: 4.63E+00 (Ci)

Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	3.84E+06	2.30E+00
C-14	1.20E+00	7.20E-07
Cr-51	3.02E+02	1.81E-04
Mn-54	7.10E+02	4.26E-04
Fe-55	2.15E+03	1.29E-03
Fe-59	1.94E+01	1.16E-05
Co-58	8.97E+02	5.38E-04
Co-60	1.01E+04	6.05E-03
Ni-59	2.77E+01	1.66E-05
Ni-63	1.12E+04	6.74E-03
Sr-90	6.48E+05	3.89E-01
Y-90	6.48E+05	3.89E-01
Zr-95	2.36E+01	1.41E-05
Tc-99	1.18E+02	7.08E-05
Ru-106	6.32E+04	3.79E-02
Rh-106	6.32E+04	3.79E-02
Sb-125	1.82E+04	1.09E-02
Te-125m	4.43E+03	2.66E-03
Cs-134	7.38E+04	4.43E-02
Cs-137	6.79E+05	4.07E-01
Ba-137m	6.43E+05	3.86E-01
Ce-144	2.12E+05	1.27E-01
Pr-144	2.12E+05	1.27E-01
Pr-144m	2.54E+03	1.53E-03
Pm-147	5.17E+05	3.10E-01
Sm-151	5.05E+03	3.03E-03
Eu-152	7.71E+01	4.63E-05
Eu-154	1.32E+04	7.93E-03
Eu-155	1.05E+04	6.29E-03
Tl-208	1.67E-01	1.00E-07
Pb-212	4.42E-01	2.65E-07
Bi-212	4.42E-01	2.65E-07
Po-212	2.85E-01	1.71E-07
Po-216	4.42E-01	2.65E-07
Ra-224	4.42E-01	2.65E-07
Ra-228	2.64E+00	1.59E-06
Ac-228	2.64E+00	1.59E-06
Th-228	4.42E-01	2.65E-07
Th-231	2.55E+00	1.53E-06
Th-232	2.68E+01	1.61E-05
Th-234	3.26E+03	1.96E-03
Pa-234	3.34E-01	2.01E-07
Pa-234m	3.26E+03	1.96E-03
U-235	2.54E+00	1.52E-06
U-238	3.28E+03	1.97E-03
Pu-238	1.60E+04	9.58E-03
Pu-239	1.58E+02	9.47E-05
Pu-240	8.99E+01	5.40E-05
Pu-241	1.96E+04	1.17E-02
Am-241	2.31E+02	1.39E-04
Cm-242	1.03E+00	6.16E-07
Cm-244	3.67E-01	2.20E-07

Table E.2 Total Disposal Volume and Air Release by Site--Cont.

LLW ALTERNATIVE: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Site: NTS

SHALLOW_LAND_BURIAL		Volume: 1.97E+03 (m3)	Mass: 5.25E+06 (kg)
		Activity: 1.24E+03 (Ci)	Release: 7.43E-04 (Ci)
Radionuclide	...Disposal Activity... (Ci)	Air Release (Ci)	
H-3	9.78E+02	5.87E-04	
C-14	1.52E-01	9.13E-08	
Cr-51	8.24E-06	4.94E-12	
Mn-54	1.71E+01	1.03E-05	
Fe-55	5.86E-05	3.51E-11	
Fe-59	5.29E-07	3.18E-13	
Co-58	1.58E+01	9.49E-06	
Co-60	4.57E+01	2.74E-05	
Ni-59	7.56E-07	4.54E-13	
Ni-63	1.30E-02	7.80E-09	
Sr-90	2.26E+01	1.36E-05	
Y-90	2.26E+01	1.36E-05	
Zr-95	6.43E-07	3.86E-13	
Tc-99	3.04E-01	1.83E-07	
Ru-106	1.12E-01	6.72E-08	
Rh-106	1.12E-01	6.72E-08	
Sb-125	3.21E-02	1.93E-08	
Te-125m	7.85E-03	4.71E-09	
Cs-134	3.56E+01	2.13E-05	
Cs-137	4.80E+01	2.88E-05	
Ba-137m	4.54E+01	2.72E-05	
Ce-144	3.75E-01	2.25E-07	
Pr-144	3.75E-01	2.25E-07	
Pr-144m	4.50E-03	2.70E-09	
Pm-147	9.15E-01	5.49E-07	
Sm-151	8.94E-03	5.36E-09	
Eu-152	1.37E-04	8.19E-11	
Eu-154	2.34E-02	1.40E-08	
Eu-155	1.86E-02	1.11E-08	
Tl-208	3.91E-10	2.35E-16	
Pb-212	1.04E-09	6.22E-16	
Bi-212	1.04E-09	6.22E-16	
Po-212	6.68E-10	4.01E-16	
Po-216	1.04E-09	6.22E-16	
Ra-224	1.04E-09	6.22E-16	
Ra-228	6.20E-09	3.72E-15	
Ac-228	6.20E-09	3.72E-15	
Th-228	1.04E-09	6.22E-16	
Th-231	5.96E-09	3.58E-15	
Th-232	6.29E-08	3.77E-14	
Th-234	7.65E-06	4.59E-12	
Pa-234	7.83E-10	4.70E-16	
Pa-234m	7.65E-06	4.59E-12	
U-235	5.94E-09	3.57E-15	
U-238	1.85E+00	1.11E-06	
Pu-238	1.11E-01	6.65E-08	
Pu-239	6.58E-03	3.95E-09	
Pu-240	2.22E-02	1.33E-08	
Pu-241	3.07E+00	1.84E-06	
Am-241	5.36E-04	3.21E-10	
Cm-242	1.77E-03	1.06E-09	
Cm-244	6.31E-04	3.78E-10	

Table E.2 Total Disposal Volume and Air Release by Site--Cont.

LLW ALTERNATIVE: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Site: ORR

TUMULUS		Volume: 2.58E+05 (m3)	Mass: 1.45E+09 (kg)
		Activity: 3.48E+07 (Ci)	Release: 2.09E+01 (Ci)
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)	
H-3	3.40E+07	2.04E+01	
C-14	4.89E+01	2.93E-05	
Cr-51	1.54E+04	9.26E-03	
Mn-54	3.49E+04	2.09E-02	
Fe-55	1.10E+05	6.58E-02	
Fe-59	9.91E+02	5.95E-04	
Co-58	4.45E+04	2.67E-02	
Co-60	3.24E+05	1.94E-01	
Ni-59	1.42E+03	8.49E-04	
Ni-63	2.01E+05	1.21E-01	
Sr-90	1.81E+04	1.08E-02	
Y-90	1.81E+04	1.08E-02	
Zr-95	1.20E+03	7.22E-04	
Tc-99	9.99E+01	6.00E-05	
Ru-106	1.09E+03	6.52E-04	
Rh-106	1.09E+03	6.52E-04	
Sb-125	3.12E+02	1.87E-04	
Te-125m	7.62E+01	4.57E-05	
Cs-134	1.27E+04	7.60E-03	
Cs-137	2.67E+04	1.60E-02	
Ba-137m	2.53E+04	1.52E-02	
Ce-144	3.64E+03	2.18E-03	
Pr-144	3.64E+03	2.18E-03	
Pr-144m	4.37E+01	2.62E-05	
Pm-147	8.88E+03	5.33E-03	
Sm-151	8.68E+01	5.21E-05	
Eu-152	1.33E+00	7.95E-07	
Eu-154	2.27E+02	1.36E-04	
Eu-155	1.80E+02	1.08E-04	
Tl-208	3.71E-03	2.23E-09	
Pb-212	9.82E-03	5.89E-09	
Bi-212	9.82E-03	5.89E-09	
Po-212	6.33E-03	3.80E-09	
Po-216	9.82E-03	5.89E-09	
Ra-224	9.82E-03	5.89E-09	
Ra-228	5.87E-02	3.52E-08	
Ac-228	5.87E-02	3.52E-08	
Th-228	9.82E-03	5.89E-09	
Th-231	5.65E-02	3.39E-08	
Th-232	5.96E-01	3.57E-07	
Th-234	7.24E+01	4.35E-05	
Pa-234	7.42E-03	4.45E-09	
Pa-234m	7.24E+01	4.35E-05	
U-235	5.63E-02	3.38E-08	
U-238	6.68E+02	4.01E-04	
Pu-238	2.76E+02	1.65E-04	
Pu-239	2.79E+00	1.68E-06	
Pu-240	1.83E+00	1.10E-06	
Pu-241	3.75E+02	2.25E-04	
Am-241	3.98E+00	2.39E-06	
Cm-242	4.00E-02	2.40E-08	
Cm-244	1.43E-02	8.58E-09	

Table E.2 Total Disposal Volume and ase by Site--Cont.

LLW ALTERNATIVE: Regionalized #5 -- 4 Site Treat -- 6 Site Disposal

Site: SRS

BELOW_GROUND_VAULT			Volume: 1.05E+06 (m3)	Mass: 2.37E+09 (kg)
			Activity: 1.82E+06 (Ci)	Release: 1.09E+00 (Ci)
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)		
H-3	6.75E+05	4.05E-01		
C-14	1.09E+01	6.53E-06		
Cr-51	1.95E+04	1.17E-02		
Mn-54	3.84E+04	2.31E-02		
Fe-55	1.39E+05	8.33E-02		
Fe-59	1.26E+03	7.53E-04		
Co-58	5.11E+04	3.06E-02		
Co-60	3.95E+05	2.37E-01		
Ni-59	1.79E+03	1.08E-03		
Ni-63	2.55E+05	1.53E-01		
Sr-90	4.23E+04	2.54E-02		
Y-90	4.23E+04	2.54E-02		
Zr-95	1.52E+03	9.14E-04		
Tc-99	1.28E+03	7.66E-04		
Ru-106	3.34E+03	2.01E-03		
Rh-106	3.34E+03	2.01E-03		
Sb-125	1.30E+03	7.78E-04		
Te-125m	2.33E+02	1.40E-04		
Cs-134	6.41E+03	3.84E-03		
Cs-137	4.02E+04	2.41E-02		
Ba-137m	3.80E+04	2.28E-02		
Ce-144	1.11E+04	6.69E-03		
Pr-144	1.11E+04	6.69E-03		
Pr-144m	1.34E+02	8.04E-05		
Pm-147	3.59E+04	2.15E-02		
Sm-151	2.66E+02	1.60E-04		
Eu-152	4.06E+00	2.44E-06		
Eu-154	6.96E+02	4.18E-04		
Eu-155	5.52E+02	3.31E-04		
Tl-208	8.54E-03	5.12E-09		
Pb-212	2.26E-02	1.36E-08		
Bi-212	2.26E-02	1.36E-08		
Po-212	1.46E-02	8.74E-09		
Po-216	2.26E-02	1.36E-08		
Ra-224	2.26E-02	1.36E-08		
Ra-228	1.35E-01	8.11E-08		
Ac-228	1.35E-01	8.11E-08		
Th-228	2.26E-02	1.36E-08		
Th-231	1.30E-01	7.81E-08		
Th-232	1.37E+00	8.23E-07		
Th-234	1.67E+02	1.00E-04		
Pa-234	1.71E-02	1.02E-08		
Pa-234m	1.67E+02	1.00E-04		
U-235	1.30E-01	7.78E-08		
U-238	2.99E+02	1.79E-04		
Pu-238	8.45E+02	5.07E-04		
Pu-239	8.64E+00	5.19E-06		
Pu-240	5.89E+00	3.54E-06		
Pu-241	1.19E+03	7.14E-04		
Am-241	1.22E+01	7.31E-06		
Cm-242	1.47E-01	8.80E-08		
Cm-244	5.24E-02	3.14E-08		

Table E.3 Total Disposal Volume and Air Release by Site

LLW ALTERNATIVE: Centralized #3 -- 7 Site Treat -- 1 Site Disposal

Site: Hanford

SHALLOW LAND BURIAL Total Volume (m3): 8.34E+05 Total Mass (kg): 5.08E+09

Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	4.85E+06	2.91E+00
C-14	2.34E+01	1.40E-05
Cr-51	2.41E+05	1.45E-01
Mn-54	4.63E+05	2.77E-01
Fe-55	1.71E+06	1.03E+00
Fe-59	1.55E+04	9.31E-03
Co-58	6.20E+05	3.72E-01
Co-60	4.85E+06	2.91E+00
Ni-59	2.21E+04	1.33E-02
Ni-63	3.16E+06	1.89E+00
Sr-90	7.14E+05	4.28E-01
Y-90	7.14E+05	4.28E-01
Zr-95	1.88E+04	1.13E-02
Tc-99	1.79E+02	1.07E-04
Ru-106	6.94E+04	4.16E-02
Rh-106	6.94E+04	4.16E-02
Sb-125	1.99E+04	1.19E-02
Te-125m	4.86E+03	2.91E-03
Cs-134	8.67E+04	5.20E-02
Cs-137	7.52E+05	4.51E-01
Ba-137m	7.12E+05	4.27E-01
Ce-144	2.32E+05	1.39E-01
Pr-144	2.32E+05	1.39E-01
Pr-144m	2.79E+03	1.67E-03
Pm-147	5.67E+05	3.40E-01
Sm-151	5.54E+03	3.32E-03
Eu-152	8.46E+01	5.07E-05
Eu-154	1.45E+04	8.70E-03
Eu-155	1.15E+04	6.90E-03
Tl-208	1.83E-01	1.10E-07
Pb-212	4.86E-01	2.91E-07
Bi-212	4.86E-01	2.91E-07
Po-212	3.13E-01	1.88E-07
Po-216	4.86E-01	2.91E-07
Ra-224	4.86E-01	2.91E-07
Ra-228	2.90E+00	1.74E-06
Ac-228	2.90E+00	1.74E-06
Th-228	4.86E-01	2.91E-07
Th-231	2.79E+00	1.67E-06
Th-232	2.94E+01	1.76E-05
Th-234	3.58E+03	2.15E-03
Pa-234	3.67E-01	2.20E-07
Pa-234m	3.58E+03	2.15E-03
U-235	2.78E+00	1.67E-06
U-238	3.90E+03	2.34E-03
Np-237	6.70E-02	4.02E-08
Pu-238	1.75E+04	1.05E-02
Pu-239	1.74E+02	1.04E-04
Pu-240	1.01E+02	6.06E-05
Pu-241	2.18E+04	1.30E-02
Am-241	2.53E+02	1.52E-04
Cm-242	1.31E+00	7.89E-07
Cm-244	1.06E+02	6.36E-05

Table E.3 Total Disposal Volume and Air Release by Site--Cont.

LLW ALTERNATIVE: Centralized #3 -- 7 Site Treat -- 1 Site Disposal

Site: Hanford

BELOW_GROUND_VAULT Total Volume (m3): 4.24E+05 Total Mass (kg): 7.63E+08
 (Hanford Grout Waste Only)

Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
Sr-90	3.22E+06	1.93E+00
Y-90	3.22E+06	1.93E+00
Ru-106	5.06E+06	3.03E+00
Rh-106	5.06E+06	3.03E+00
Cs-137	1.09E+08	6.58E+01
Ba-137m	1.03E+08	6.22E+01

Site: SRS (Saltstone Waste)

BELOW_GROUND_VAULT	Total Volume (m3)	Total Mass (kg)
	5.92E+05	1.06E+09

Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
H-3	2.21E+03	1.32E-03
Sr-90	6.66E+03	4.00E-03
Y-90	6.66E+03	4.00E-03
Tc-99	1.24E+03	7.48E-04
Ru-106	1.41E+01	8.51E-06
Rh-106	1.41E+01	8.51E-06
Sb-125	3.40E+02	2.04E-04
Cs-137	1.10E+03	6.63E-04
Ba-137m	1.02E+03	6.12E-04
H-3	2.21E+03	1.32E-03
Sr-90	6.66E+03	4.00E-03
Y-90	6.66E+03	4.00E-03
Tc-99	1.24E+03	7.48E-04
Ru-106	1.41E+01	8.51E-06
Rh-106	1.41E+01	8.51E-06
Sb-125	3.40E+02	2.04E-04
Cs-137	1.10E+03	6.63E-04
Ba-137m	1.02E+03	6.12E-04
Pm-147	8.70E+03	5.22E-03

Table E.4 Total Disposal Volume and Air Release by Site

LLW ALTERNATIVE: Centralized #5 -- 1 Site Treat -- 1 Site Disposal

Site: Hanford

Radionuclide	Volume: 8.26E+05 (m3)	Mass: 5.08E+09 (kg)
	Activity: 2.02E+07 (Ci)	Release: 1.21E+01 (Ci)
SHALLOW_LAND_BURIAL	Disposal Activity (Ci)	Air Release (Ci)
H-3	4.86E+06	2.92E+00
C-14	2.34E+01	1.40E-05
Cr-51	2.42E+05	1.45E-01
Mn-54	4.63E+05	2.78E-01
Fe-55	1.72E+06	1.03E+00
Fe-59	1.55E+04	9.32E-03
Co-58	6.20E+05	3.72E-01
Co-60	4.86E+06	2.91E+00
Ni-59	2.22E+04	1.33E-02
Ni-63	3.16E+06	1.90E+00
Sr-90	7.15E+05	4.29E-01
Y-90	7.15E+05	4.29E-01
Zr-95	1.89E+04	1.13E-02
Tc-99	1.79E+02	1.08E-04
Ru-106	6.94E+04	4.16E-02
Rh-106	6.94E+04	4.16E-02
Sb-125	1.99E+04	1.20E-02
Te-125m	4.87E+03	2.92E-03
Cs-134	8.68E+04	5.21E-02
Cs-137	7.53E+05	4.52E-01
Ba-137m	7.13E+05	4.28E-01
Ce-144	2.32E+05	1.39E-01
Pr-144	2.32E+05	1.39E-01
Pr-144m	2.79E+03	1.68E-03
Pm-147	5.67E+05	3.40E-01
Sm-151	5.54E+03	3.33E-03
Eu-152	8.46E+01	5.08E-05
Eu-154	1.45E+04	8.71E-03
Eu-155	1.15E+04	6.91E-03
Tl-208	1.84E-01	1.10E-07
Pb-212	4.86E-01	2.92E-07
Bi-212	4.86E-01	2.92E-07
Po-212	3.13E-01	1.88E-07
Po-216	4.86E-01	2.92E-07
Ra-224	4.86E-01	2.92E-07
Ra-228	2.91E+00	1.74E-06
Ac-228	2.91E+00	1.74E-06
Th-228	4.86E-01	2.92E-07
Th-231	2.80E+00	1.68E-06
Th-232	2.95E+01	1.77E-05
Th-234	3.59E+03	2.15E-03
Pa-234	3.67E-01	2.20E-07
Pa-234m	3.59E+03	2.15E-03
U-235	2.79E+00	1.67E-06
U-238	3.90E+03	2.34E-03
Np-237	6.70E-02	4.02E-08
Pu-238	1.75E+04	1.05E-02
Pu-239	1.74E+02	1.04E-04
Pu-240	1.01E+02	6.07E-05
Pu-241	2.18E+04	1.31E-02
Am-241	2.54E+02	1.52E-04
Cm-242	1.32E+00	7.90E-07
Cm-244	1.06E+02	6.36E-05

Table E.4 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Centralized #5 -- 1 Site Treat -- 1 Site Disposal

Site: Hanford

BELOW_GROUND_VAULT	Volume: 4.24E+05 (m3)	Mass: 7.63E+08 (kg)
	Activity: 2.30E+08 (Ci)	Release: 1.38E+02 (Ci)
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)
Sr-90	3.22E+06	1.93E+00
Y-90	3.22E+06	1.93E+00
Ru-106	5.06E+06	3.04E+00
Rh-106	5.06E+06	3.04E+00
Cs-137	1.10E+08	6.58E+01
Ba-137m	1.04E+08	6.22E+01

Table E.4 Total Disposal Volume and Air Release by Site -- Cont.

LLW ALTERNATIVE: Centralized #5 -- 1 Site Treat -- 1 Site Disposal

Site: SRS (Saltstone Waste Only)

BELOW_GROUND_VAULT		Volume: 4.24E+05 (m3)	Mass: 7.63E+08 (kg)
		Activity: 2.30E+08 (Ci)	Release: 1.38E+02 (Ci)
Radionuclide	Disposal Activity (Ci)	Air Release (Ci)	
H-3	2.21E+03	1.33E-03	
Sr-90	6.67E+03	4.00E-03	
Y-90	6.67E+03	4.00E-03	
Tc-99	1.25E+03	7.49E-04	
Ru-106	1.42E+01	8.51E-06	
Rh-106	1.42E+01	8.51E-06	
Sb-125	3.40E+02	2.04E-04	
Cs-137	1.11E+03	6.64E-04	
Ba-137m	1.02E+03	6.13E-04	
Pm-147	8.71E+03	5.23E-03	