INEL-95/0310
(Formerly EGG-WM-10903)
Rev. 1
August 1995

Idaho National Engineering Laboratory

A Comprehensive Inventory of Radiological and Nonradiological Contaminants in Waste Buried in the Subsurface Disposal Area of the INEL RWMC During the Years 1952–1983

Volume 2

Lockheed
Idaho Technologies Company

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Idaho National Engineering Laboratory
Lockheed Idaho Technologies Company
Idaho Falls, Idaho 83415

Prepared for the
U.S. Department of Energy
Office of Environmental Restoration and Waste Management
Under DOE Idaho Operations Office
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PREFACE

This report, *A Comprehensive Inventory of Radiological and Nonradiological Contaminants in Waste Buried in the Subsurface Disposal Area of the INEL RWMC During the Years 1952–1983*, is comprised of five volumes. Volume 1 consists of the main body of the report and Appendices A, C, D, E, F, and G. Appendix B, the complete printout of the inventory database, is provided in Volumes 2 through 5. Because of its size, distribution of Appendix B has been limited.

Appendix B

Complete Printout of the Contaminant Inventory and Other Information from the CIDRA Database

Argonne National Laboratory-East

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 31

1. Preparer: Jorgensen, Doug

2. Date prepared: 06/23/93

3. Generator: ALE
(area or contractor - use code from attached list)

4. Particular facility: ALE
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Building rubble, electric wires, piping, machinery, radioactive traces and sources, glass, gloves, paper, filters and vermiculite.

7. Type of radioactive waste (check box):
[X] TRU or suspect TRU
[ ] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1980 Ending year 1983

9. Waste stream volume:
Amount 3544.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
6. Explanation of why seven waste streams are included on one form for ALE: a) Materials were relatively similar from each waste stream. b) Materials from one or several waste streams were combined in shipments and there is no indication in shipments of how much of what waste stream is included. c) Isotopes from any given waste stream are not specified except for the overall shipment. d) No hazardous chemical materials were believed to be included in waste shipments from Argonne-East. The following are the reported percentages of waste streams received: Zero Gradient Complex - 30%; Reclamation Building - 15%; University of Chicago Hospital - 15%; Materials Science Building - 4%; New Brunswick Lab - 5%; Solid Radioactive Waste - 15%; Filters - 10%; and Other - 10%.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
13, 21, 22, 31, 41, 42, 44.

2. Details on physical form(particularly confinement related)
Building rubble, electric wires, cut-up lathes, piping, machinery, radioactive tracers and sources, glass, gloves, paper, filters and vermiculite.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner [ ] metal liner [ ] none [X] other (specify)
Bins (M-III). See 7 below.

5. Waste container type (see attached list)
Bin*.

6. Other characteristics of interest:
Eighteen 55-gallon drums shipped which were not in bins.

7. Comments (specify number of pertinent question):
4. Bins (M-III) with 3-5 gallon paint cans, 55-gallon drums and plywood boxes inside.
5. BLM.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7439-92-1 Lead	Metal.	Unknown.	Unknown.	GM						

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Quantity, begin year, etc. is unknown. RWMIS lists radioactive isotopes of lead in negligible quantities. Based on this information, lead is obviously included in the shipments, but volumes cannot be determined.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ag-110	Contam. lab equip., machinery, tracers & sources.	Unknown.	T .01250000000000	CI	1980	1983	N	-50%	+50%	
Am-241	See comment below.	Unknown.	T .02320000000000	CI	1980	1983	N	-50%	+50%	
Am-243	See comment below.	Unknown.	T .00000923000000	CI	1980	1983	N	-50%	+50%	
Be-7	See comment below.	Unknown.	T .35230000000000	CI	1980	1983	N	-50%	+50%	
C-14	See comment below.	Unknown.	T .00160000000000	CI	1980	1983	N	-50%	+50%	
Cd-104	See comment below.	Unknown.	T .00000015000000	CI	1980	1983	N	-50%	+50%	
Cd-109	See comment below.	Unknown.	T .19390000000000	CI	1980	1983	N	-50%	+50%	
Ce-144	See comment below.	Unknown.	T .00000800000000	CI	1980	1983	N	-50%	+50%	
Cm-244	See comment below.	Unknown.	T .00098560000000	CI	1980	1983	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Physical form for these radionuclides is reported to be "contaminated lab equipment, machinery, tracers and sources". All MFP included under Sr-90 based on types of processes and best guess. Based on the uranium enrichment curve the measured ratio of U-235 to U-238 (less than 1% by activity), the uranium in this waste stream is depleted and 28% of the total uranium is U-234, 2% is U-235, 70% is U-238 by activity.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-57	See comment below.	Unknown.	T 4.7710000000000	CI	1980	1983	N	-50%	+50%	
Co-58	See comment below.	Unknown.	T .00033120000000	CI	1980	1983	N	-50%	+50%	
Co-60	See comment below.	Unknown.	T 58.080000000000	CI	1980	1983	N	-50%	+50%	
Cr-51	See comment below.	Unknown.	T .11900000000000	CI	1980	1983	N	-50%	+50%	
Cs-134	See comment below.	Unknown.	T .00030500000000	CI	1980	1983	N	-50%	+50%	
Cs-137	See comment below.	Unknown.	T .00380000000000	CI	1980	1983	N	-50%	+50%	
Eu-152	See comment below.	Unknown.	T .00570000000000	CI	1980	1983	N	-50%	+50%	
Eu-154	See comment below.	Unknown.	T .00095000000000	CI	1980	1983	N	-50%	+50%	
Fe-59	See comment below.	Unknown.	T .07450000000000	CI	1980	1983	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Physical form for these radionuclides is reported to be "contaminated lab equipment, machinery, tracers and sources". All MFP included under Sr-90 based on types of processes and best guess. Based on the uranium enrichment curve the measured ratio of U-235 to U-238 (less than 1% by activity), the uranium in this waste stream is depleted and 28% of the total uranium is U-234, 2% is U-235, 70% is U-238 by activity.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	See comment below.	Unknown.	T 5.1810000000000	CI	1980	1983	N	-50%	+50%	
I-125	See comment below.	Unknown.	T .02930000000000	CI	1980	1983	N	-50%	+50%	
Mn-53	See comment below.	Unknown.	T .00100000000000	CI	1980	1983	N	-50%	+50%	
Mn-54	See comment below.	Unknown.	T 109.80000000000	CI	1980	1983	N	-50%	+50%	
Na-22	See comment below.	Unknown.	T .08510000000000	CI	1980	1983	N	-50%	+50%	
Ni-63	See comment below.	Unknown.	T .00025000000000	CI	1980	1983	N	-50%	+50%	
Np-237	See comment below.	Unknown.	T .00084900000000	CI	1980	1983	N	-50%	+50%	
Pb-210	See comment below.	Unknown.	T .00000910000000	CI	1980	1983	N	-50%	+50%	
Pb-212	See comment below.	Unknown.	T .00002000000000	CI	1980	1983	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Physical form for these radionuclides is reported to be "contaminated lab equipment, machinery, tracers and sources". All MFP included under Sr-90 based on types of processes and best guess. Based on the uranium enrichment curve the measured ratio of U-235 to U-238 (less than 1% by activity), the uranium in this waste stream is depleted and 28% of the total uranium is U-234, 2% is U-235, 70% is U-238 by activity.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-238	See comment below.	Unknown.	T .00003040000000	CI	1980	1983	N	-50%	+50%	
Pu-239	See comment below.	Unknown.	T .17680000000000	CI	1980	1983	N	-50%	+50%	
Pu-240	See comment below.	Unknown.	T .23600000000000	CI	1980	1983	N	-50%	+50%	
Pu-242	See comment below.	Unknown.	T .00001441000000	CI	1980	1983	N	-50%	+50%	
Ra-225	See comment below.	Unknown.	T .00000200000000	CI	1980	1983	N	-50%	+50%	
Ra-226	See comment below.	Unknown.	T .99280000000000	CI	1980	1983	N	-50%	+50%	
Rn-222	See comment below.	Unknown.	T .00000100000000	CI	1980	1983	N	-50%	+50%	
Ru-103	See comment below.	Unknown.	T .00000200000000	CI	1980	1983	N	-50%	+50%	
Ru-106	See comment below.	Unknown.	T .00100000000000	CI	1980	1983	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Physical form for these radionuclides is reported to be "contaminated lab equipment, machinery, tracers and sources". All MFP included under Sr-90 based on types of processes and best guess. Based on the uranium enrichment curve the measured ratio of U-235 to U-238 (less than 1% by activity), the uranium in this waste stream is depleted and 28% of the total uranium is U-234, 2% is U-235, 70% is U-238 by activity.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
S-35	See comment below.	Unknown.	T .02550000000000	CI	1980	1983	N	-50%	+50%	
Sc-44	See comment below.	Unknown.	T .02500000000000	CI	1980	1983	N	-50%	+50%	
Sc-46	See comment below.	Unknown.	T .02500000000000	CI	1980	1983	N	-50%	+50%	
Sr-90	See comment below.	Unknown.	T 287.80000000000	CI	1980	1983	N	-50%	+50%	
Tc-99	See comment below.	Unknown.	T .00000200000000	CI	1980	1983	N	-50%	+50%	
Th-232	See comment below.	Unknown.	T .00031150000000	CI	1980	1983	N	-50%	+50%	
U-233	See comment below.	Unknown.	T .00004184000000	CI	1980	1983	N	-50%	+50%	
U-235	See comment below.	Unknown.	T .03800000000000	CI	1980	1983	N	-50%	+50%	
U-238	See comment below.	Unknown.	T 1.3160000000000	CI	1980	1983	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Physical form for these radionuclides is reported to be "contaminated lab equipment, machinery, tracers and sources". All MFP included under Sr-90 based on types of processes and best guess. Based on the uranium enrichment curve the measured ratio of U-235 to U-238 (less than 1% by activity), the uranium in this waste stream is depleted and 28% of the total uranium is U-234, 2% is U-235, 70% is U-238 by activity.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Y-88	See comment below.	Unknown.	T .02500000000000	CI	1980	1983	N	-50%	+50%	
Zn-65	See comment below.	Unknown.	T .61910000000000	CI	1980	1983	N	-50%	+50%	
Zr-95	See comment below.	Unknown.	T .06000000000000	CI	1980	1983	N	-50%	+50%	
U-234	See comment below.	Unknown.	T .52700000000000	CI	1980	1983	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Physical form for these radionuclides is reported to be "contaminated lab equipment, machinery, tracers and sources". All MFP included under Sr-90 based on types of processes and best guess. Based on the uranium enrichment curve the measured ratio of U-235 to U-238 (less than 1% by activity), the uranium in this waste stream is depleted and 28% of the total uranium is U-234, 2% is U-235, 70% is U-238 by activity.

1. Type of source of information: (check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
WM-F1-82-010, Argonne National Laboratory - East, Low-Level Waste Sources and Forms (Internal Technical Report).

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS? (Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Major unknowns include: if hazardous material is included but not reported and breakdown of what each waste stream (i.e. building/process) produced in terms of isotope types.

8. Key assumptions used to deal with the unknowns:
Assume RWMIS is relatively accurate with minor errors and that reported information on how waste was containerized, combined and shipped was accurate. No G-M correction is needed to the best estimate. The waste stream curie content and specific radionuclides were determined by means of the generator's analytical methods prior to shipping. Upper and lower bounds are estimated based on waste expert's judgment.

Argonne National Laboratory-West

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 136

1. Preparer: Wallace, Morley T.

2. Date prepared: 07/30/93

3. Generator: ANL
(area or contractor - use code from attached list)

4. Particular facility: 752
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
"Dry active waste" routinely generated in facility monitoring, operations, and maintenance activities. Laboratory waste, samples and sources.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1966 Ending year 1978

9. Waste stream volume:
Amount 391.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. This building includes laboratory and office facilities. Waste for the period 1979-1983 was disposed to the soil vault rows. This waste is reported as ANL-752-2 on another set of forms.
6. This waste stream was also named "General Plant Waste" in RWMIS. There was a variety of solids included in this stream which was a "catch all" for disposal of routine radioactive waste materials.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)
Mixture of different types of solids.

3. Chemical form:
The major portion of the waste was combustibles (60%), with other solids such as plastics (20%), metals (15%) and filters (5%).

4. Inner packaging: [X] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
PL. See 7 below.

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:
Some of the wastes in this stream would be considered "compactible" waste today.

7. Comments (specify number of pertinent question):
5. BXW, BLM, and "Other". Most of this waste stream (50%) was disposed in BXC conveyed in dumpsters. However, BXW and BLM were also used. Remote-handled waste was transported in 3 cubic foot containers in shielded casks.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
56-23-5 Carbon Tetrachloride	Absorbed on solids.	Chemical.	A 1.2000000000000	GM	1966	1978	N	-5%	+5%	Estimated amount by A L lab manager.
67-66-3 Chloroform	Absorbed on solids.	Chemical.	A 2.8300000000000	GM	1966	1978	N	-5%	+5%	Estimated amount by A L lab manager.
None-AR. Aqua Regia	Absorbed on solids.	Liquid mineral acid mixture.	A 2.8400000000000	GM	1968	1978	N	-10%	+10%	Estimated amount by ANL lab manager.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Removable and fixed contamination on waste solids.	Elemental.	T 181.00000000000	CI	1966	1970	N			See comment below.
Co-60	Removable and fixed contamination on waste solids.	Elemental.	T 290.00000000000	CI	1971	1978	N	-25%	+25%	See comment below.
Sr-90	Removable and fixed contamination on waste solids.	Elemental.	T 1343.0000000000	CI	1966	1970	N			See comment below.
Sr-90	Removable and fixed contamination on waste solids.	Elemental.	T 2149.0000000000	CI	1971	1978	N	-25%	+25%	See comment below.
Ce-144	Removable and fixed contamination on waste solids.	Elemental.	T 3234.0000000000	CI	1966	1970	N			See comment below.
Ce-144	Removable and fixed contamination on waste solids.	Elemental.	T 5174.0000000000	CI	1971	1978	N	-25%	+25%	See comment below.
Mn-54	Removable and fixed contamination on waste solids.	Elemental.	T 49.000000000000	CI	1966	1970	N			See comment below.
Mn-54	Removable and fixed contamination on waste solids.	Elemental.	T 79.000000000000	CI	1971	1978	N	-25%	+25%	See comment below.
Co-58	Removable and fixed contamination on waste solids.	Elemental.	T 37.000000000000	CI	1966	1970	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

* Standard GM-counter method for analysis was used.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-58	Removable and fixed contamination on waste solids.	Elemental.	T 58.000000000000	CI	1971	1978	N	-25%	+25%	See comment below.
Cs-137	Removable and fixed contamination on waste solids.	Elemental.	T 1408.0000000000	CI	1966	1970	N			See comment below.
Cs-137	Removable and fixed contamination on waste solids.	Elemental.	T 2253.0000000000	CI	1971	1978	N	-25%	+25%	See comment below.
Zr-95	Removable and fixed contamination on waste solids.	Elemental.	T .67000000000000	CI	1966	1970	N			See comment below.
Zr-95	Removable and fixed contamination on waste solids.	Elemental.	T 1.0800000000000	CI	1971	1978	N	-25%	+25%	See comment below.
Nb-95	Removable and fixed contamination on waste solids.	Elemental.	T 2.1000000000000	CI	1966	1970	N			See comment below.
Nb-95	Removable and fixed contamination on waste solids.	Elemental.	T 3.3700000000000	CI	1971	1978	N	-25%	+25%	See comment below.
U-235	Removable and fixed contamination on waste solids.	Oxides.	T .04660000000000	CI	1966	1978	N	-10%	+10%	See comment below.
U-238	Removable and fixed contamination on waste solids.	Oxides.	T .20000000000000	CI	1966	1978	N	-10%	+10%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

* Standard GM-counter method for analysis was used.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Removable and fixed contamination on waste solids.	Oxides.	T 9.7000000000000	CI	1968	1968	N	-25%	+25%	Data gatherer estimate.
Th-232	Removable and fixed contamination on waste solids.	Oxides.	T .00001000000000	CI	1968	1968		-25%	+25%	Data gatherer estimate.
Sb-125	Sources.	Elemental.	T 16.100000000000	CI	1970	1971	N	-10%	+10%	
Be-10	Sources.	Elemental.	T 4.2900000000000	CI	1971	1971	N	-10%	+10%	
Po-210	Sources (Po-Be).	Elemental.	T 17.770000000000	CI	1970	1971	N	-10%	+10%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

* Standard GM-counter method for analysis was used.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping records.

2. Details concerning source (names, report no., dates, etc.)
Reports include:
EGG-WM-9857, Analysis of the LLW Radiation Inventory for RWMC Performance Assessment.
ANL-79-14, Waste Production and Management at EBR-II. Draft Document, Facility Waste Descriptions Argonne-West, 12/14/73 (this is a draft and does not have a number).

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
There is uncertainty in total curie content due to the generalized method of calculating curies from container radiation readings.

8. Key assumptions used to deal with the unknowns:
MFP were assumed to constitute 80% of rad. content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 141

1. Preparer: Roy Grant

2. Date prepared: 05/04/94

3. Generator: ANL
(area or contractor - use code from attached list)

4. Particular facility: 752
(building number - use code from attached list)

5. Number of waste stream from this facility:
2H

6. Waste stream:
Combustibles (paper, cloth, etc.), plastic, metal, filters, laboratory waste and samples.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1979 Ending year 1983

9. Waste stream volume:
Amount 122.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
8. Waste from this facility for the period 1966 - 1978 was reported as ANL-752-1 on another set of forms. For convenience, the waste was divided into two streams. Primarily "dry active waste" resulting from laboratory operations.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)
Solids from laboratory activities.

3. Chemical form:
Mostly combustibles, plastic, metal, and filters.

4. Inner packaging: [X] plastic bag [ ] plastic liner [ ] metal liner [ ] none [X] other (specify)
PL. See comments below.

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
4. Waste was placed in plastic bags before being placed in the container. Plastic liners were used in the wooden boxes.
5. BXW and BLM.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Mn-54	Contamination on waste solids.	Elemental.	T 105.00000000000	CI	1979	1983	N	-25%	+25%	See comment below.
Co-58	Contamination on waste solids.	Elemental.	T 157.00000000000	CI	1979	1983	N	-25%	+25%	See comment below.
Co-60	Contamination on waste solids.	Elemental.	T 576.00000000000	CI	1979	1983	N	-25%	+25%	See comment below.
Sr-90	Contamination on waste solids.	Elemental.	T 2167.0000000000	CI	1979	1983	N	-25%	+25%	See comment below.
Cs-137	Contamination on waste solids.	Elemental.	T 1256.0000000000	CI	1979	1983	N	-25%	+25%	See comment below.
Ce-144	Contamination on waste solids.	Elemental.	T 838.00000000000	CI	1979	1983	N	-25%	+25%	See comment below.
Cr-51	Contamination on waste solids.	Oxides.	T 209.00000000000	CI	1979	1983	N	-25%	+25%	See comment below.
Pu-238	Contamination on waste solids.	Oxides.	T .02230000000000	CI	1979	1983	N	-25%	+25%	See comment below.
U-235	Contamination on waste solids.	Oxides.	T .02330000000000	CI	1979	1983	N	-25%	+25%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Approximately 95% of the total activation product curies were contained in one shipment. Apparently this one shipment, containing sub-assembly hardware, had been sent to the laboratory for some special purpose. It was subsequently shipped to the RWMC as waste from building ANL-752.
* Sr-90 not taken into consideration for curie calculations. Curie totals based on meter readings.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-238	Contamination on waste solids.	Oxides.	T .20000000000000	CI	1979	1983	N	-25%	+25%	See comment below.
Am-241	Contamination on waste solids.	Oxides.	T .00000018000000	CI	1979	1983	N	-25%	+25%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Approximately 95% of the total activation product curies were contained in one shipment. Apparently this one shipment, containing sub-assembly hardware, had been sent to the laboratory for some special purpose. It was subsequently shipped to the RWMC as waste from building ANL-752.
* Sr-90 not taken into consideration for curie calculations. Curie totals based on meter readings.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Waste disposal records.

2. Details concerning source (names, report no., dates, etc.)
Shipping records. EGG-WM-9857.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:
It was assumed that radiation measurements were converted to curies by a standard formula.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 242

1. Preparer: Wallace, Morley T.

2. Date prepared: 01/31/94

3. Generator: ANL
(area or contractor - use code from attached list)

4. Particular facility: 752
(building number - use code from attached list)

5. Number of waste stream from this facility:
3H

6. Waste stream:
Concreted evaporator bottoms.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1970 Ending year 1979

9. Waste stream volume:
Amount 23.1000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Lab and office building. The waste was generated in the basement of the Analytical Lab area of the building.
6. Waste stream name refers to either a thick liquid or a dry residue in a standard size (55-gallon) concrete filled drum.

1. General physical form (see attached list)

[X] other (specify)
5.

2. Details on physical form(particularly confinement related)
Liquid or dry residue encapsulated in a concrete-filled 55-gallon drum. Years 1970-1973, a thick black liquid. Years 1974-1979, a dry residue.

3. Chemical form:
Aqueous stream.

4. Inner packaging: [ ] plastic bag [ ] plastic liner [X] metal liner [ ] none [X] other (specify)
Metal liner.

5. Waste container type (see attached list)
Metal barrel.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7440-43-9 Cadmium	Liquid.	Ion of unknown valence in solution.	Unknown.	GM	1970	1979	N			
7440-47-3 Chromium	Liquid.	Ion of unknown valence in solution.	Unknown.	GM	1970	1979	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For both contaminants, it is known they exist in the liquid waste streams of generator facilities, especially FCF. However, samples were never taken and concentrations in the liquid, both before concentration (evaporation) and after, are unknown. Concentrations are probably far in excess of current RCRA-regulated levels.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Contaminated liquid or fixed solids.	Elemental.	A 25.000000000000	CI	1970	1979	N	-25%	+25%	Radioactivity determined by HP meter readings.
Cs-137	Contaminated liquid or fixed solids.	Elemental.	A 225.00000000000	CI	1970	1979	N	-25%	+25%	Radioactivity determined by HP meter readings.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Annual quantity disposed is an average amount of the total (all years) curie quantity disposed at RWMC; i.e., the annual amount is 1/9 of the total. Many shipments were made listing activities as "90% MFP". Just as many shipments were characterized "90% Cs-137". Therefore, the fission products were assumed to be entirely Cs-137. The remaining 10% of activity was assumed to be the prevalent activation product of ANL-W, Co-60.

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[X] operating records [X] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Copies of old waste shipment records and Solid Radioactive Waste Reports. Three reports on the re-design of the L & O Evaporator system were consulted. The reports were in correspondences circa 1973 and 1974.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Concentrations of chemical contaminants weren't determined by sample analysis. Major isotope (Cs-137) was declared by process knowledge.

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 134

1. Preparer: Roy Grant

2. Date prepared: 05/05/94

3. Generator: ANL
(area or contractor - use code from attached list)

4. Particular facility: 765
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
"Dry active waste" (DAW) routinely generated in facility monitoring, operation and maintenance.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1966 Ending year 1983

9. Waste stream volume:
Amount 1815.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. This building was also known as the Fuel Cycle Facility.
6. This waste stream was also called "General Plant Waste." There was a variety of solids included in this stream as it was a "catch-all" for disposal of routine radioactive waste materials. Beginning in 1974, the mission of this facility was changed, and it was then known as HFEF-S. Highly radioactive (remote-handled) waste from this facility is reported as Waste Stream 765-2.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
23.

2. Details on physical form(particularly confinement related)
A mix of many types of solids.

3. Chemical form:
Mainly combustibles (60%), with other solids in the waste stream such as paper filters (5%), metals (15%) and plastics (20%).

4. Inner packaging: [X] plastic bag [ ] plastic liner [ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:
Some of the waste matrix would be classified "compactible" today.

7. Comments (specify number of pertinent question):
5. BXW and BLM. Most of this waste stream volume was disposed in BXC (75%), however, BXW and BLM were also used.
6. A 1968 entry on Waste Disposal Record (ID-127) lists the FCF injection casting furnace, with associated curie content of 10000 Ci. Packaging for the furnace is listed as BXW.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
1332-21-4 Asbestos			Unknown.	GM	1966	1983				
7439-92-1 Lead	Metal.	Elemental or alloy.	T 308.00000000000	LB	1962	1983	N	-20%	+20%	
7439-92-1 Lead	Metal.	Elemental or alloy.	T 30000.000000000	LB	1970	1970	N	-20%	+20%	See comment below. Known shipping record.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
* Third item listed represents a disposal of 9 lead casks in 1970.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Removable and fixed contamination on waste solids.	Elemental.	T 962.00000000000	CI	1966	1970	N			See comment below.
Sr-90	Removable and fixed contamination on waste solids.	Elemental.	T 4777.0000000000	CI	1966	1970	N			See comment below.
Cs-137	Removable and fixed contamination on waste solids.	Elemental.	T 3354.0000000000	CI	1966	1970	N			See comment below.
Ce-144	Removable and fixed contamination on waste solids.	Elemental.	T 4189.0000000000	CI	1966	1970	N			See comment below.
Mn-54	Removable and fixed contamination on waste solids.	Elemental.	T 1117.0000000000	CI	1966	1970	N			See comment below.
Co-58	Removable and fixed contamination on waste solids.	Elemental.	T 1034.0000000000	CI	1966	1970	N			See comment below.
Co-60	Removable and fixed contamination on waste solids.	Elemental.	T 2500.0000000000	CI	1971	1983	N	-25%	+25%	See comment below.
Sr-90	Removable and fixed contamination on waste solids.	Elemental.	T 12421.000000000	CI	1971	1983	N	-25%	+25%	See comment below.
Cs-137	Removable and fixed contamination on waste solids.	Elemental.	T 8722.0000000000	CI	1971	1983	N	-25%	+25%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curie quantities for individual waste containers were calculated using a standard formula based on radiation readings. The same formula was used for different container types even though it appears to have been designed for use on wastes in cardboard boxes. The above listed radionuclide profile was based on the relatively few instances where isotopic breakdowns were provided on facility wastes. Later, sampling studies indicated a significant presence of the strontium isotope in ANL-W waste streams. This isotope is a strong beta-emitter and, as such, wouldn't be detected by hand-held radiation monitors for the purposes curie content calculations.
* Sr-90 not taken into consideration for curie calculations. Curie totals based on meter readings. Pu-239, U-235, and U-238 exist in the waste stream as contamination in minute quantities.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ce-144	Removable and fixed contamination on waste solids.	Elemental.	T 10892.000000000	CI	1971	1983	N	-25%	+25%	See comment below.
Mn-54	Removable and fixed contamination on waste solids.	Elemental.	T 2903.0000000000	CI	1971	1983	N	-25%	+25%	See comment below.
Co-58	Removable and fixed contamination on waste solids.	Elemental.	T 2687.0000000000	CI	1971	1983	N	-25%	+25%	See comment below.
Cs-134	Removable and fixed contamination on waste solids.	Elemental.	T 482.00000000000	CI	1966	1970	N			See comment below.
Ce-141	Removable and fixed contamination on waste solids.	Elemental.	T 6.0800000000000	CI	1966	1970	N			See comment below.
Cs-134	Removable and fixed contamination on waste solids.	Elemental.	T 1252.0000000000	CI	1971	1983	N	-25%	+25%	See comment below.
Cr-51	Removable and fixed contamination on waste solids.	Elemental.	T 3074.0000000000	CI	1971	1983	N	-25%	+25%	See comment below.
Ce-141	Removable and fixed contamination on waste solids.	Elemental.	T 15.800000000000	CI	1971	1983	N	-25%	+25%	See comment below.
Pu-239			T .22300000000000	CI	1966	1983	N	-25%	+25%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curie quantities for individual waste containers were calculated using a standard formula based on radiation readings. The same formula was used for different container types even though it appears to have been designed for use on wastes in cardboard boxes. The above listed radionuclide profile was based on the relatively few instances where isotopic breakdowns were provided on facility wastes. Later, sampling studies indicated a significant presence of the strontium isotope in ANL-W waste streams. This isotope is a strong beta-emitter and, as such, wouldn't be detected by hand-held radiation monitors for the purposes curie content calculations.
* Sr-90 not taken into consideration for curie calculations. Curie totals based on meter readings. Pu-239, U-235, and U-238 exist in the waste stream as contamination in minute quantities.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235			T .02330000000000	CI	1966	1983	N	-25%	+25%	See comment below.
U-238			T .20000000000000	CI	1966	1983	N	-25%	+25%	See comment below.
Cr-51	Removable and fixed contamination on waste solids.	Elemental.	T 1182.0000000000	CI	1966	1970	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curie quantities for individual waste containers were calculated using a standard formula based on radiation readings. The same formula was used for different container types even though it appears to have been designed for use on wastes in cardboard boxes. The above listed radionuclide profile was based on the relatively few instances where isotopic breakdowns were provided on facility wastes. Later, sampling studies indicated a significant presence of the strontium isotope in ANL-W waste streams. This isotope is a strong beta-emitter and, as such, wouldn't be detected by hand-held radiation monitors for the purposes curie content calculations.

* Sr-90 not taken into consideration for curie calculations. Curie totals based on meter readings. Pu-239, U-235, and U-238 exist in the waste stream as contamination in minute quantities.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
Reports include: EGG-WM-9857, Analysis of the LLW Radionuclide Inv. for RWMC Performance Assessment; ANL-79-14, Waste Production and Management at EBR-II; and a draft document "Facility Waste Descriptions Argonne-West", dated 12/14/73.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
Adjustments for more recent isotopic breakdown assumptions will cause isotope curie total mismatches with RWMIS data totals.

7. Major unknowns in inventories of contaminants:
There were no known chemical hazards. There is uncertainty in total curie content of the waste due to the generalized method of calculating curies from radiation readings.

8. Key assumptions used to deal with the unknowns:
"Minor" isotopes that may have existed in this waste stream were rolled up into the major isotopes. MFP were assumed to constitute 80% of radionuclides.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION   HDT - 138

1. Preparer: Roy Grant

2. Date prepared: 05/04/94

3. Generator: ANL
(area or contractor - use code from attached list)

4. Particular facility: 765
(building number - use code from attached list)

5. Number of waste stream from this facility:
2H

6. Waste stream:
Sub-assembly hardware (from nuclear fuel and material experiments), gloves, coveralls, plastic, and sample materials.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1977 Ending year 1983

9. Waste stream volume:
Amount 12.3200 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. This building was originally known as the Fuel Cycle Facility (FCF), but underwent extensive modifications beginning in 1975, and is now known as the Hot Fuel Examination Facility-South (HFEF-S).
8. The waste from the HFEF began to be shipped to the soil vaults in 1977. The highly radioactive waste in this stream consists primarily of miscellaneous sub-assembly hardware resulting from destructive (final) examination of nuclear fuels and materials. Other waste consists of gloves, coveralls, plastic, etc., as well as non-compactible waste resulting from the modifications.

1. General physical form (see attached list)
Other scrap metals.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
The sub-assembly hardware is packaged in 5 ft3, seal-welded cans.

3. Chemical form:
Elemental metals.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Insert.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7439-92-1 Lead			Unknown.	GM	1977	1983				

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ce-144	Incorporated in metal.	Elemental.	T 55700.000000000	CI	1977	1983	N	-25%	+25%	See comment below.
Co-58	Incorporated in metal.	Elemental.	T 41775.000000000	CI	1977	1983	N	-25%	+25%	See comment below.
Co-60	Incorporated in metal.	Elemental.	T 229765.00000000	CI	1977	1983	N	-25%	+25%	See comment below.
Cs-137	Incorporated in metal.	Elemental.	T 83551.000000000	CI	1977	1983	N	-25%	+25%	See comment below.
Sr-90	Incorporated in metal.	Elemental.	T 138873.00000000	CI	1977	1983	N	-25%	+25%	See comment below.
Mn-54	Incorporated in metal.	Elemental.	T 62663.000000000	CI	1977	1983	N	-25%	+25%	See comment below.
Cr-51	Incorporated in metal.	Elemental.	T 83551.000000000	CI	1977	1983	N	-25%	+25%	See comment below.
Pu-239	Contamination on surface.	Oxides.	T .22330000000000	CI	1977	1983	N	-25%	+25%	See comment below.
Pu-240	Contamination on surface.	Oxides.	T .00400000000000	CI	1977	1983	N	-25%	+25%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The curies for the various radionuclides were obtained from an RWMIS download for the soil vault rows.
* Sr-90 was not taken into consideration for curie calculations. Curie totals based on meter readings.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Contamination on surface.	Oxides.	T .02330000000000	CI	1977	1983	N	-25%	+25%	See comment below.
U-238	Contamination on surface.	Oxides.	T .20000000000000	CI	1977	1983	N	-25%	+25%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The curies for the various radionuclides were obtained from an RWMIS download for the soil vault rows.

* Sr-90 was not taken into consideration for curie calculations. Curie totals based on meter readings.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Report WM-FI-82-015, ANL-W Low Level Waste Source and Forms, Sept. 1982, L.S. Kee. RWMIS download for shipments > 1000 Ci from building ANL 765.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
It is not known how the radionuclides were identified nor how the total curies were determined for each shipment.

8. Key assumptions used to deal with the unknowns:
With the variety of materials and different sizes and shapes of the pieces, it was assumed that an analysis of the material had been made at sometime to identify the isotopes. It was also assumed that the total curies were calculated from a radiation reading and that the conversion from radiation values to curies was reasonably accurate.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 137

1. Preparer: Wallace, Morley T.

2. Date prepared: 07/28/93

3. Generator: ANL
(area or contractor - use code from attached list)

4. Particular facility: 767
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
"Dry active waste" routinely generated in facility monitoring, operation and maintenance.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1962 Ending year 1971

9. Waste stream volume:
Amount 650.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. This building is known as EBR-II.
6. This waste stream may have been listed in RWMIS as "General Plant Waste". There was a variety of solids included in this stream which was a "catch-all" for disposal of routine radioactive waste materials. This waste stream includes waste totals from TREAT (Bldg. 720) and SCMS (Bldg. 793). Estimated Ci directly disposed through other buildings. ANL-79-14 lists EBR II Ci at <1 for years 1968-1978. Estimated Ci directly disposed through other buildings.
8. The RWMIS and waste disposal records indicate that after 1971, the volume of waste and the curie values having a building 767 designation were very minor. The waste from building 767 during this period may have been shipped under a different building designation. If this occurred, the data would likely be in forms prepared for waste from the other buildings.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)
A mix of different types of solids.

3. Chemical form:
Mainly combustibles (60%) with other solids such as plastics (20%), metals (15%) and paper filters (5%).

4. Inner packaging: [X] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
PL. See 7 below.

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:
Some of the waste matrix would be considered "compactible" waste today.

7. Comments (specify number of pertinent question):
5. BXW and BLM. Most of this waste stream (50%) was disposed in BXC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Removable and fixed contamination on waste solids.	Elemental.	T 213.00000000000	CI	1962	1970	N			See comment below.
Sr-90	Removable and fixed contamination on waste solids.	Elemental.	T 635.00000000000	CI	1962	1970	N			See comment below.
Cs-137	Removable and fixed contamination on waste solids.	Elemental.	T 635.00000000000	CI	1962	1970	N			See comment below.
Ce-144	Removable and fixed contamination on waste solids.	Elemental.	T 1585.0000000000	CI	1962	1970	N			See comment below.
Mn-54	Removable and fixed contamination on waste solids.	Elemental.	T 356.00000000000	CI	1962	1970	N			See comment below.
Co-58	Removable and fixed contamination on waste solids.	Elemental.	T 338.00000000000	CI	1962	1970	N			See comment below.
Co-60	Removable and fixed contamination on waste solids.	Elemental.	T 24.000000000000	CI	1971	1971	N	-25%	+25%	See comment below.
Sr-90	Removable and fixed contamination on waste solids.	Elemental.	T 70.000000000000	CI	1971	1971	N	-25%	+25%	See comment below.
Cs-137	Removable and fixed contamination on waste solids.	Elemental.	T 70.000000000000	CI	1971	1971	N	-25%	+25%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

* Standard GM-counter method for analysis was used, even though the correction is not needed for 1971 data, because the curie amounts are relatively small, U-238 entry was not broken into other U nuclides (e.g., U-234), again because curie amount is small. Pu-239, U-235, and U-238 exists as contamination in the waste stream in minute quantities.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ce-144	Removable and fixed contamination on waste solids.	Elemental.	T 176.00000000000	CI	1971	1971	N	-25%	+25%	See comment below.
Mn-54	Removable and fixed contamination on waste solids.	Elemental.	T 40.000000000000	CI	1971	1971	N	-25%	+25%	See comment below.
Co-58	Removable and fixed contamination on waste solids.	Elemental.	T 37.000000000000	CI	1971	1971	N	-25%	+25%	See comment below.
Cr-51	Removable and fixed contamination on waste solids.	Elemental.	T 375.00000000000	CI	1962	1970	N			See comment below.
Cs-134	Removable and fixed contamination on waste solids.	Elemental.	T 317.80000000000	CI	1962	1970	N			See comment below.
Cs-134	Removable and fixed contamination on waste solids.	Elemental.	T 35.300000000000	CI	1971	1971	N	-25%+	+25%	See comment below.
Cr-51	Removable and fixed contamination on waste solids.	Elemental.	T 42.000000000000	CI	1971	1971	N	-25%+	+25%	See comment below.
Sb-125	Source.		T 100.00000000000	CI	1969	1969	N	-25%+	+25%	See comment below.
Pu-239	Trace particulate.	Oxide.	T .65000000000000	CI	1962	1971	N	-25%	+25%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

* Standard GM-counter method for analysis was used, even though the correction is not needed for 1971 data, because the curie amounts are relatively small, U-238 entry was not broken into other U nuclides (e.g., U-234), again because curie amount is small. Pu-239, U-235, and U-238 exists as contamination in the waste stream in minute quantities.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Trace particulate.	Oxide.	T .02330000000000	CI	1962	1971	N	-25%	+25%	See comment below.
U-238	Trace particulate.	Oxide.	T .20000000000000	CI	1962	1971	N	-25%	+25%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
* Standard GM-counter method for analysis was used, even though the correction is not needed for 1971 data, because the curie amounts are relatively small. U-238 entry was not broken into other U nuclides (e.g., U-234), again because curie amount is small. Pu-239, U-235, and U-238 exists as contamination in the waste stream in minute quantities.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping records.

2. Details concerning source (names, report no., dates, etc.)
Reports include:
EGG-WM-9857, Analysis of the LLW Radionuclide Inventory for RWMC Performance Assessment. ANL-79-14, Waste Production and Management at EBR-II. Draft Document, Facility Waste Descriptions Argonne-West, 12/14/93 (This is a draft and does not have a number).

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
There were no known chemical hazards. There is uncertainty in total curie content due to the generalized method of calculating curies from radiation readings from various types of containers.

8. Key assumptions used to deal with the unknowns:
"Minor" isotopes (those of lesser concentration or short half-lives) that probably existed in this waste stream were rolled up into amounts of the major isotopes reported. MFP were assumed to constitute 80% of the radiological content. MAP was assumed to be entirely Co-60.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 142

1. Preparer: Roy Grant

2. Date prepared: 05/05/94

3. Generator: ANL
(area or contractor - use code from attached list)

4. Particular facility: 785
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Sub-assembly hardware (from nuclear fuel & material experiments), rags, plastic sheeting, and equipment.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1977 Ending year 1983

9. Waste stream volume:
Amount 77.7900 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. This facility is known as the Hot Fuel Examination Facility-North (HFEF-N). It is the largest inert atmosphere, alpha-gamma-containing hot cell facility in the United States. It is used for destructive and non-destructive examination of irradiated fuels and materials experiments from EBR-II. The highly radioactive waste in this waste stream consists of sub-assembly hardware from the destructive examination of irradiated fuels and materials from EBR-11. Other waste includes discarded equipment, rags, plastic sheeting, etc.

1. General physical form (see attached list)
Other scrap metals.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
The sub-assembly hardware is packaged in 5 ft3, seal-welded cans.

3. Chemical form:
Elemental metals.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Insert.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. This waste stream also includes contact-handled DAW disposed in plywood boxes and metal drums (BXW and BLM).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7439-92-1 Lead			Unknown.	GM	1977	1983				

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ce-144	Radionuclides incorporated in metals.	Elemental.	T 26385.000000000	CI	1977	1983	N	-25%	+25%	See comment below.
Co-58	Radionuclides incorporated in metals.	Elemental.	T 18218.000000000	CI	1977	1983	N	-25%	+25%	See comment below.
Co-60	Radionuclides incorporated in metals.	Elemental.	T 100199.00000000	CI	1977	1983	N	-25%	+25%	See comment below.
Sr-90	Radionuclides incorporated in metals.	Elemental.	T 66018.000000000	CI	1977	1983	N	-25%	+25%	See comment below.
Cs-137	Radionuclides incorporated in metals.	Elemental.	T 39576.000000000	CI	1977	1983	N	-25%	+25%	See comment below.
Mn-54	Radionuclides incorporated in metals.	Elemental.	T 27327.000000000	CI	1977	1983	N	-25%	+25%	See comment below.
Cr-51	Radionuclides incorporated in metals.	Elemental.	T 36435.000000000	CI	1977	1983	N	-25%	+25%	See comment below.
Ta-182	Radionuclides incorporated in metals.	Elemental.	T 8.0000000000000	CI	1977	1983	N	-25%	+25%	See comment below.
Pu-239	Particulate.	Oxide.	T .22330000000000	CI	1977	1983	N	-25%	+25%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The curie values were obtained from an RWMIS download for the soil vault rows.
* Sr-90 not taken into consideration for curie calculations. Curie totals based on meter reading.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-240	Particulate.	Oxide.	T .00400000000000	CI	1977	1983	N	-25%	+25%	See comment below.
U-235	Particulate.	Oxide.	T .02330000000000	CI	1977	1983	N	-25%	+25%	See comment below.
U-238	Particulate.	Oxide.	T .20000000000000	CI	1977	1983	N	-25%	+25%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The curie values were obtained from an RWMIS download for the soil vault rows.

* Sr-90 not taken into consideration for curie calculations. Curie totals based on meter reading.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Report WM-FI-82-015, ANL-W Low Level Waste Source and Forms, Sep. 1982, L.S. Kee. RWMIS download for shipments > 1000 Ci from building ANL-785.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
It is not known how the radionuclides were identified nor how the total curies were identified for each shipment.

8. Key assumptions used to deal with the unknowns:
With the variety of materials and different sizes and shapes of the pieces, it was assumed that an analysis of the material had been made at one time to identify the isotopes. It was also assumed that the conversion from radiation values to curies was reasonably accurate.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 244

1. Preparer: Roy Grant

2. Date prepared: 04/26/94

3. Generator: ANL
(area or contractor - use code from attached list)

4. Particular facility: EBRI
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
For identified isotopes, the listed value on the waste reports was used. MAP was assumed to be 50% Co-58, 50% Mn-54. MFP was assumed to be 20% Cs-137, 50% Ce-144, 20% Sr-90 and 10% Cs-134.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1958 Ending year 1963

9. Waste stream volume:
Amount 5914.0000 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
Methods of curie quantity assessments are unknown, except as discussed in Part D and are assumed to be by GM counter, except as indicated. Approximately 457 curies of MAP and 49 curies of MFP are included in waste reports.

1. General physical form (see attached list)
Other core,reactor vessel,loop component
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)

3. Chemical form:

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Inner packaging for wastes is unknown.

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
1332-21-4 Asbestos	Unknown.	Unknown.	Unknown.	GM	1959	1959	N			Listed on waste report.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sb-124	Source.	Elemental.	T 1800.0000000000	CI	1959	1959	N	-10%	+10%	See comment below.
Co-58	Activated metal.	Elemental.	T 229.00000000000	CI	1959	1962	N			See comment below.
Mn-54	Activated metal.	Elemental.	T 229.00000000000	CI	1959	1962	N			See comment below.
Ce-144	Removable and fixed contamination on waste solids.	Elemental.	T 25.000000000000	CI	1959	1962	N			See comment below.
Fe-59	Activated metal.	Elemental.	T 34.000000000000	CI	1961	1961	N			See comment below.
Cs-137	Removable and fixed contamination on waste solids.	Elemental.	T 10.000000000000	CI	1959	1962	N			See comment below.
Sr-90	Removable and fixed contamination on waste solids.	Elemental.	T 10.000000000000	CI	1959	1962	N			See comment below.
Cs-134	Removable and fixed contamination on waste solids.	Elemental.	T 5.0000000000000	CI	1959	1962	N			See comment below.
U-235	Metal.	Metal.	T .11000000000000	CI	1962	1962	N	-10%	+10%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-234	Metal.	Elemental.	T 3.3600000000000	CI	1962	1962	N	-10%	+10%	See comment below.
U-238	Metal.	Elemental.	T .03000000000000	CI	1962	1962	N	-10%	+10%	See comment below.
Co-60	Removable and fixed contamination on waste solids.	Elemental.	T 2.0000000000000	CI	1961	1961	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
The major portion of the waste, by volume 70% identified as miscellaneous waste, is assumed to be combustible. The remaining 30% primarily consists of stainless steel reactor components and other scrap metals.

8. Key assumptions used to deal with the unknowns:
5. Waste reports refer to cardboard boxes (BXC) for "miscellaneous waste". Packaging for reactor components is not identified, but most likely used wooden boxes and metal drums (BXW and BLM).

Auxiliary Reactor Area

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 121

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/07/93

3. Generator: ARA
(area or contractor - use code from attached list)

4. Particular facility: 601
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
One each, Davis water filter units.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1977 Ending year 1977

9. Waste stream volume:
Amount 1.1890 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. ARA-601 - the wellhouse at the facility.
9. Weight is 1.134 E+05 gms (2,500 lbs.).

1. General physical form (see attached list)
Other scrap metals.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Water filters which may, or may not, contain resin.

3. Chemical form:
N/A.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other" equals direct buried filter body.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Solid.	Unknown.	T .00002510000000	CI	1977	1977	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
Shipping records. EG&G Installation Assessment Report - EGG-WM-6875 - January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Physical make-up of filter unit.

8. Key assumptions used to deal with the unknowns:
The filter unit is metal (stainless steel) and contains all contamination internally.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 87

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/14/93

3. Generator: ARA
(area or contractor - use code from attached list)

4. Particular facility: 602
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
This waste is from the SL-1 clean-up and consists of a 1000 gallon tank, a demineralizer with resin, various building materials, pipes, soil, wire, concrete, insulation, etc.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1965

9. Waste stream volume:
Amount 885.5957 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. This waste stream is for SL-1 clean-up.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
12, 17, 21, 23, 41, 43, 44, 45.

2. Details on physical form(particularly confinement related)
Many loose items were wrapped in poly sheet and buried.

3. Chemical form:
N/A.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other" and BLM. "Other" is polywrapped materials with no containers.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Hazardous chemicals were not reported in shipments. No other information is available.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Solid.	Unknown.	T 667.62000000000	CI	1960	1965	N			
Cs-137	Solid.	Unknown.	T 667.62000000000	CI	1960	1965	N			
Cs-137	Surface contamination.	Surface contamination.	T 713.02600000000	CI	1961	1965	N			
Sr-90	Surface contamination.	Surface contamination.	T 713.02600000000	CI	1961	1965	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MFP = 1/2 Sr-90 and 1/2 Cs-137, based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
EG&G Installation Assessment Report - EGG-WM-6875 - January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Make-up of what is listed as MFP, nature and extent of any hazardous chemicals in inventory that were not reported.

8. Key assumptions used to deal with the unknowns:
Assumed MFP to be equal parts Sr-90 and Cs-137. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP, G-M method was used by generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 88

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/14/93

3. Generator: ARA
(area or contractor - use code from attached list)

4. Particular facility: 602
(building number - use code from attached list)

5. Number of waste stream from this facility:
2H

6. Waste stream:
This waste stream consists of low levels of items listed as "scrap" and "rad waste NOS" which was taken from the ML-1 site during clean-up. There is a small amount of paper and wood.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1965 Ending year 1966

9. Waste stream volume:
Amount 79.9420 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. This waste stream is from the Army Mobile Low Power Plant No. 1 (ML-1) reactor deactivation cleanup.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
21.

2. Details on physical form(particularly confinement related)
All high activity metal, scrap is wrapped in plastic and trucked to burial site. Combustible items are contained in card board boxes.

3. Chemical form:

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:
Most "Others" are no container - direct waste burial.

7. Comments (specify number of pertinent question):
5. BXC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Most, if not all, of ARA hazardous chemical wastes were processed through CPP or sent to TRA.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Solid.	Unknown.	T .29050000000000	CI	1965	1966	N			
Cs-137	Solid.	Unknown.	T .29050000000000	CI	1965	1966	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MFP = 1/2 Sr-90 and 1/2 Cs-137, based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
EG&G Installation & Assessment Report - EGG-WM-6875 - January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Make-up of MFP.

8. Key assumptions used to deal with the unknowns:
Assumed MFP to be equal parts Sr-90 and Cs-137. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP, G-M method was used by generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 211

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/14/93

3. Generator: ARA
(area or contractor - use code from attached list)

4. Particular facility: 602
(building number - use code from attached list)

5. Number of waste stream from this facility:
3H

6. Waste stream:
Hot cell waste consisting of some fuel residue. Some metals (Cu, Cd, SS, and Al), some soil, HEPA filters and clean-up supplies (i.e. rags, paper, mops, etc.).

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1963 Ending year 1977

9. Waste stream volume:
Amount 84.8767 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
2, 10, 22, 43, 44.

2. Details on physical form(particularly confinement related)
The remnants of fuel and some stainless steel are wrapped in plastic and placed in an aluminum canister.

3. Chemical form:

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
4. Except for the items in #2 above, inner packaging is unknown.
5. BLM and "Other".

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Solid.	Unknown.	T .04300000000000	CI	1963	1963	N			
Sr-90	Solid.	Unknown.	T 1600.0000000000	CI	1963	1977	N	-20%	+20%	
Cs-137	Solid.	Unknown.	T 1600.0000000000	CI	1963	1977	N	-20%	+20%	
Co-60	Solid.	Unknown.	T .00015000000000	CI	1977	1977	N	-20%	+20%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Make up of what is listed as MFP and MAP.

8. Key assumptions used to deal with the unknowns:
Assumed MFP to be equal parts Sr-90 and Cs-137. Assumed MAP to be all Co-60. No G-M correction is needed to the best estimate for the uranium radionuclide entries. The uranium entries in the waste stream were identified by analytical methods or weight. The G-M correction is needed to the best estimate for the other radionuclides, because they were estimated by that method. Upper and lower bounds estimated based on waste expert's judgment.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION   HDT - 89

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/08/93

3. Generator: ARA
(area or contractor - use code from attached list)

4. Particular facility: 606
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Contaminated soil and scrap building material.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1977 Ending year 1977

9. Waste stream volume:
Amount 3.6240 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
9. Weight is 500 lbs. or 228 kg total.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
43.

2. Details on physical form(particularly confinement related)
Scrap building material (1 box), loose contaminated soil (1 box).

3. Chemical form:
N/A.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Wooden box.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
2. Assumed that scrap building materials are combustibles.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Most, if not all, of ARA hazardous chemical wastes were processed through CPP or sent to TRA.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Solid.	Unknown.	T .00100000000000	CI	1977	1977	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
Shipping records. EG&G Installation and Assessment Report - EGG-WM-6875 - January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Whether building materials are combustible or not.

8. Key assumptions used to deal with the unknowns:
Assumed building materials to be combustible.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 90

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/08/93

3. Generator: ARA
(area or contractor - use code from attached list)

4. Particular facility: 607
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Depleted uranium and U-238 milling chips.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1977 Ending year 1978

9. Waste stream volume:
Amount 0.0328 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
9. 0.0328 per shipping records and 0.0566 per RWMIS.

1. General physical form (see attached list)
Unirradiated fuel from experiments.
[X] other (specify)
Depleted uranium and U-238 chips.

2. Details on physical form(particularly confinement related)
Unknown.

3. Chemical form:
Solid metals.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:
Waste container type unknown.

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Solid.	N/A.	T .00000056300000	CI	1977	1977	N	-50%	+50%	
U-238	Solid.	N/A.	T .00005570000000	CI	1977	1977	N	-50%	+50%	
U-235	Solid.	N/A.	T .00001000000000	CI	1978	1978	N	-50%	+50%	
U-238	Solid.	N/A.	T .00099000000000	CI	1978	1978	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Assumed 99% activity is U-238. Assumed 1% activity is U-235.

1. Type of source of information: (check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
Shipping records. EG&G Installation and Assessment Report - EGG-WM-6875 - January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS? (Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
Small difference in curie content and waste stream volume.

7. Major unknowns in inventories of contaminants:
None.

8. Key assumptions used to deal with the unknowns:
No G-M correction is needed to the best estimate. The waste stream curie content and specific radionuclides were determined by means of the generator's analytical methods prior to shipping. Upper and lower bounds are estimated based on waste expert's judgment. Assumption of U-238 and U-235 percentages.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 91

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/13/93

3. Generator: ARA
(area or contractor - use code from attached list)

4. Particular facility: 608
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Less than 0.1 Curies UO2. Tank, pump, valves, gauges, wire scrap metal, sludge NOS 1, concrete masonry and asphalt gravel.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1982

9. Waste stream volume:
Amount 78.4000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
2, 11, 41.

2. Details on physical form(particularly confinement related)
< 0.1 curies of UO2 solution has been solidified.

3. Chemical form:
< 0.1 curie (1.82 gm) UO2 (solidified).

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Other*.

6. Other characteristics of interest:
The containers listed as other (O) are poly and tape wrapping.

7. Comments (specify number of pertinent question):
5. BXC and BXW. "Others" are mostly scrap metal wrapped in poly.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Sludge NOS reported. No means to determine chemical constituents of sludge.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Solid.	Oxide.	T .00000361700000	CI	1960	1960	N	.		
U-238	Solid.	Oxide.	T .00000004329000	CI	1960	1960	N			
Co-60	Solid.	Unknown.	T .01120000000000	CI	1960	1972	N	-20%	+20%	
Sr-90	Solid.	Unknown.	T 1.6380000000000	CI	1960	1982	N	-20%	+20%	
Cs-137	Solid.	Unknown.	T .00367000000000	CI	1970	1972	N	-20%	+20%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

MAP = Co-60, MFP = Sr-90; UN-ID-B&G = 1/3 Co-60, 1/3 Sr-90, 1/3 Cs-137; based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
EG&G Installation and Assessment Report - EGG-WM-6875 - January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Composition of MAP, MFP, UN-ID-B&G, and chemical composition of sludge NOS.

8. Key assumptions used to deal with the unknowns:
Called MAP Co-60. Called MFP Sr-90. Called UN-ID-B&G equal parts Co-60, Sr-90, and Cs-137. No G-M correction is needed to the best estimate for the uranium radionuclide entries. The uranium entries in the waste stream were identified by analytical methods or weight. The G-M correction is needed to the best estimate for the other radionuclides, because they were estimated by that method. Upper and lower bounds estimated based on waste expert's judgment.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 92

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/13/93

3. Generator: ARA
(area or contractor - use code from attached list)

4. Particular facility: 616
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
ML-1 and GCRE waste consisting of various scrap metals (SS, Ag, Al, Fe, K and Pb), resin, burnables, sludge and some boric acid crystals.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1961 Ending year 1966

9. Waste stream volume:
Amount 376.7300 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
5.

2. Details on physical form(particularly confinement related)

3. Chemical form:
Some boric acid crystals.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. BLF, BLM, BXW and "Other".

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Most, if not all, of ARA hazardous chemical wastes were processed through CPP or sent to TRA.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ag-110	Solid.	Unknown.	T 1.6600000000000	CI	1965	1965	N			
Sr-90	Solid.	Unknown.	T 2160.0000000000	CI	1961	1966	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MFP = Sr-90, based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
EG&G Installation and Assessment Report - EGG-WM-6875 - January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Breakdown of MFP.

8. Key assumptions used to deal with the unknowns:
MFP made up of Sr-90. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 93

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/15/93

3. Generator: ARA
(area or contractor - use code from attached list)

4. Particular facility: 626
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Some fuel scraps, waste from disassembly of facilities, and Hot Cell waste.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1961 Ending year 1983

9. Waste stream volume:
Amount 424.7000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. ARA-626 - Hot Cell Building.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
2, 5, 6, 7, 11, 12, 21, 22, 41, 42, 43, 44, 45, 46.

2. Details on physical form(particularly confinement related)
Fuel scrap and metal scrap.

3. Chemical form:

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Some plastic wrapping.

5. Waste container type (see attached list)
Other*.

6. Other characteristics of interest:
See comment 5.

7. Comments (specify number of pertinent question):
5. BLX, BXW, BLM, BXC, BIN and I. Most "Others" are plastic wrapped scrap metal.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Hazardous chemicals stored in a holding tank were shipped to CPP for processing and disposal.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Solid.	Unknown.	T .00001000000000	CI	1972	1972	N	-50%	+50%	
Ce-141	Solid.	Unknown.	T .21100000000000	CI	1971	1971	N	-50%	+50%	
Ce-144	Solid.	Unknown.	T .13000000000000	CI	1982	1982	N	-50%	+50%	
Co-60	Solid.	Unknown.	T 271.58300000000	CI	1964	1983	N	-50%	+50%	
Cr-51	Solid.	Unknown.	T 163.80000000000	CI	1972	1973	N	-50%	+50%	
Cs-134	Solid.	Unknown.	T .19000000000000	CI	1982	1982	N	-50%	+50%	
Cs-137	Solid.	Unknown.	T 100.53500000000	CI	1970	1983	N	-50%	+50%	
Eu-152	Solid.	Unknown.	T .20000000000000	CI	1970	1970	N	-50%	+50%	
Eu-154	Solid.	Unknown.	T .20000000000000	CI	1970	1970	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Fe-59	Solid.	Unknown.	T 80.220000000000	CI	1972	1973	N	-50%	+50%	
Nb-95	Solid.	Unknown.	T .18000000000000	CI	1982	1982	N	-50%	+50%	
Ni-59	Solid.	Unknown.	T 115.00000000000	CI	1972	1972	N	-50%	+50%	
Pu-239	Solid.	Unknown.	T .00676000000000	CI	1972	1982	N	-50%	+50%	
Sr-90	Solid.	Unknown.	T 84.735000000000	CI	1961	1983	N	-50%	+50%	
U-233	Solid.	Unknown.	T .60000000000000	CI	1970	1970	N	-50%	+50%	
U-235	Solid.	Unknown.	T .00108000000000	CI	1975	1983	N	-50%	+50%	
U-238	Solid.	Unknown.	T .00208900000000	CI	1972	1983	N	-50%	+50%	
Zr-95	Solid.	Unknown.	T .08000000000000	CI	1982	1982	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Nb-95	Solid.	Unknown.	T .53150000000000	CI	1971	1971	N	-50%	+50%	
Zr-95	Solid.	Unknown.	T .53150000000000	CI	1971	1971	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
EG&G Initial Assessment Report - EGG-WM-6875 - January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS? (Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Make-up of MAP, MFP, UN-ID-B&G and UD-alpha.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60; MFP to be 50/50 Cs-137 and Sr-90; UN-ID-B&G to be 1/3 Co-60, 1/3 Sr-90 and 1/3 Cs-137; UN-ID-alpha is U-238. No G-M correction is needed to the best estimate. The waste stream curie content and specific radionuclides were determined by means of the generator's analytical methods prior to shipping. Upper and lower bounds are estimated based on waste expert's judgment.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 94

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/08/93

3. Generator: ARA
(area or contractor - use code from attached list)

4. Particular facility: 627
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Plastic bags, brick, HEPA filters, scrap, glove boxes, and fuel (U-235 and U-238).

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1976 Ending year 1979

9. Waste stream volume:
Amount 15.2900 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. ARA-027 - Print Shop (1955-1971), Materials testing (1971-1980), Radiochemistry Lab (1980-1983).

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
2, 22, 41, 44.

2. Details on physical form(particularly confinement related)
Wooden and cardboard boxes of U-235 and U-238 contaminated waste.

3. Chemical form:
N/A.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Wooden box*.

6. Other characteristics of interest:
One BXW contains plastic glovebox contaminated with fuel.

7. Comments (specify number of pertinent question):
5. BXC and "Other".

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Hazardous chemical sent to TRA or CPP for disposal.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Solid.	Unknown.	T .00018800000000	CI	1976	1979	N	-50%	+50%	
U-238	Solid.	Unknown.	T 1.6400000000000	CI	1976	1979	N	-50%	+50%	
Sr-90	Solid.	Unknown.	T .00037500000000	CI	1978	1978	N	-20%	+20%	
Co-60	Solid.	Unknown.	T .00212500000000	CI	1978	1978	N	-20%	+20%	
U-234	Solid.	Unknown.	T .63800000000000	CI	1976	1979	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

MAP = Co-60, MFP = Sr-90, based on best guess estimate. Based on the present ratio (measured) of U-235 to U-238 (less than 1%) as compared to enrichment curves, the uranium is depleted and 28% of uranium by activity is U-234.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
EG&G Installation Assessment Report - EGG-WM-6875-January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Concentrations which make up MAP and MFP.

8. Key assumptions used to deal with the unknowns:
MAP was Co-60 and MFP was Sr-90. No G-M correction is needed to the best estimate for the uranium radionuclide entries. The uranium entries in the waste stream were identified by analytical methods or weight. The G-M correction is needed to the best estimate for the other radionuclides, because they were estimated by that method. Upper and lower bounds estimated based on waste expert's judgment.

Battelle Northwest Laboratories

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 30

1. Preparer: Jorgensen, Doug

2. Date prepared: 06/24/93

3. Generator: BNL
(area or contractor - use code from attached list)

4. Particular facility: BNL
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Primary operations at BNL involved producing Pu from U-238 - no other information available.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1983 Ending year 1983

9. Waste stream volume:
Amount 4.6550 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
BNL - Battelle Northwest Lab.

1. General physical form (see attached list)

[X] other (specify)
Unknown.

2. Details on physical form(particularly confinement related)
Unknown.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Bin*.

6. Other characteristics of interest:
5. One BIN and four drums.

7. Comments (specify number of pertinent question):
1, 2, 3 and 4. No information from reports, shipping records or interviews. Based on the low activity and minor volume of this shipment, this material will be inconsequential to the overall waste volume of the SDA.
5. BLM.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
According to interviews with Bob Berry and Don Rhodes, hazardous chemicals were restricted from shipments in the 1980s. It is unlikely that any hazardous chemicals were included in this shipment from BNL.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Unknown.	Unknown.	T .00000120000000	CI	1983	1983	N	-50%	+50%	
C-14	Unknown.	Unknown.	T .00000500000000	CI	1983	1983	N	-50%	+50%	
Co-60	Unknown.	Unknown.	T .01230000000000	CI	1983	1983	N	-50%	+50%	
H-3	Unknown.	Unknown.	T .17740000000000	CI	1983	1983	N	-50%	+50%	
U-238	Unknown.	Unknown.	T .00000000200000	CI	1983	1983	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
No other information is available concerning BNL, interviews do not add to the understanding of the process and duplicate records cannot be located. Quantity disposed is negligible and will not impact overall SDA evaluation.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Talked with Bob Berry concerning nature of shipment. No recollection of hazardous chemicals and shipping records probably identified waste simply as plant waste.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
No information other than one RWMIS entry.

8. Key assumptions used to deal with the unknowns:
Assume no hazardous chemicals disposed in 1983 and rad. content of shipment is negligible. No G-M correction is needed to the best estimate. The waste stream curie content and specific radionuclides were determined by means of the generator's analytical methods prior to shipping. Upper and lower bounds are estimated based on waste expert's judgment.

Central Facilities Area

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 95

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/27/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 601
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
1. Also 14 (evaporated salts).
2. Miscellaneous waste solids, such as HEPA filters, paper wipes, graphite molds and crucibles, small tools and casting residues, sometimes contaminated with beryllium and beryllium oxide, were placed in plastic bags and sometimes added to the boxes or drums containing the salt waste.
5. Also BXW. Prior to September, 1975, the salts were packaged in 55-gallon drums. After this date 4x4x7 ft. wooden boxes were used.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1966 Ending year 1974

9. Waste stream volume:
Amount 34.4380 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
7, 8, 21, 42, 43, 44, 45.

2. Details on physical form(particularly confinement related)

3. Chemical form:

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Cardboard box.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Measurements of the concentrations of plutonium and uranium that were made in that time period were probably not highly reliable.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Surface contamination.	Unknown.	T .62075000000000	CI	1966	1974	N			
Sr-90	Surface contamination.	Unknown.	T 10.624000000000	CI	1966	1974	N			
Cs-137	Surface contamination.	Unknown.	T .00150000000000	CI	1974	1974	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Assumed MAP to be Co-60, MFP to be Sr-90.

8. Key assumptions used to deal with the unknowns:
Isotope make-up of MAP and MFP.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 117

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/20/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 605
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Lead slag/floor sweepings. One metal hood, some stainless steel and some plastic vials containing graphite. There is some normal and some depleted uranium alloyed with aluminum and zirconium.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1967 Ending year 1970

9. Waste stream volume:
Amount 15.2888 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. This RWMIS listing is a "mixed bag" of records from three areas: Metallurgy and Material Science Building, the Lead Shop and the Chem. Lab. An attempt should be made to place these records under the appropriate building listing in RWMIS.

1. General physical form (see attached list)
Unirradiated fuel from experiments.
[X] other (specify)
7, 9, 10, 16, 44.

2. Details on physical form(particularly confinement related)
Normal and depleted uranium alloyed with Al and Zr.

3. Chemical form:
Metal.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Graphite is contained in vials.

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. The depleted uranium was buried in a wooden container. Type of container is not specified.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7439-92-1 Lead	Slag.	Lead.	T 180.00000000000	LB	1967	1967	N	-10%	+10%	See comment below.
7440-67-7 Zirconium	Slag.	Lead.	T 1142.0000000000	LB	1970	1970	N	571	1142	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Lead slag estimated to be 90% of shipment weight +/-10%, based on only additional item in shipment was floor sweepings. Zirconium alloy assumed approximately 1/3 of shipment weight as best guess. No basis of uncertainty could be applied as this is probably worst case.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T .26050000000000	CI	1967	1970	N	-20%	+20%	
Sr-90	Solid.	Unknown.	T .26050000000000	CI	1967	1970	N	-20%	+20%	
Cs-137	Solid.	Unknown.	T .01000000000000	CI	1970	1970	N	-20%	+20%	
U-235	Solid.	Unknown.	T .01400000000000	CI	1968	1968	N	-50%	+50%	
U-238	Solid.	Unknown.	T .28200000000000	CI	1968	1968	N	-50%	+50%	
U-234	Solid.	Unknown.	T .17400000000000	CI	1968	1968	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Records indicate some depleted and some normal (natural) uranium in the shipment. The calculation of U-234 is based on enrichment curve for 0.4% of U-235 by mass (mid-way between depleted and natural U). Used 60% U-238, 37% U-234, and 3% U-235 by activity.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:
Radionuclide and lead quantity estimates are based on best guess. Worst case applies to Zr alloy disposed (only).

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP, MFP and UN-ID-B&G.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60. Assumed MFP to be Sr-90. Assumed UN-ID-B&G to be 1/3 Co-60, 1/3 Sr-90 and 1/3 Cs-137. Assumptions of volumes of Pb based on best guess and probable worst case for Zr. No G-M correction is needed to the best estimate for the uranium radionuclide entries. The uranium entries in the waste stream were identified by analytical methods or weight. The G-M correction is needed to the best estimate for the other radionuclides, because they were estimated by that method. Upper and lower bounds estimated based on waste expert's judgment.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 96

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/26/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 606
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
One safe from AEC security and some metal samples, which were found on the shuttle bus.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1962 Ending year 1966

9. Waste stream volume:
Amount 0.1423 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
9. RWMIS shows 0.1416 m3. According to shipping record for 1962 shipment, volume is 48 in3 (0.027778 ft. or 0.000786 m3), yet RWMIS shows this as 0.0283 m3.

1. General physical form (see attached list)
Other scrap metals.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
The safe is in a cardboard box and the samples are in a "box".

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner [ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
5. "Other" is a "box", but type of box is unknown.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T .00055000000000	CI	1962	1966	N			
Sr-90	Solid.	Unknown.	T .00055000000000	CI	1962	1966	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
Small volume difference (See A.10).

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP and MFP.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60. Assumed MFP to be Sr-90. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP, G-M method was used by generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 128

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/29/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 609
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Forty cubic feet of contaminated lumber and one camera.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1972 Ending year 1972

9. Waste stream volume:
Amount 1.1353 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. Two "Others" (no details known).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T .00033830000000	CI	1972	1972	N			
Sr-90	Solid.	Unknown.	T .00033830000000	CI	1972	1972	N			
Cs-137	Solid.	Unknown.	T .00033330000000	CI	1972	1972	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP, MFP and UN-ID&BG.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60, MFP to be Sr-90 and UN-ID-B&G to be 1/3 Co-60, 1/3 Sr-90 and 1/3 Cs-137. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP, G-M method was used by generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 106

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/19/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 610
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Undershirt, 2 pair pants, hat, shirt and lunchbox.
Also, mercury batteries and contaminated mud.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1962 Ending year 1962

9. Waste stream volume:
Amount 0.9900 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
Two shipments in 1962, whose origin is not known, are included in this waste stream. They were shipped by the Health and Safety Division. They may have been shipped from CFA-610. One shipment was 2 cubic feet of mercury batteries in a cardboard box. The other shipment was metal drums with 30 cubic feet of mud contamination by mercury and radionuclides.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
43.

2. Details on physical form(particularly confinement related)

3. Chemical form:

4. Inner packaging: [X] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other" is a plastic bag, cardboard boxes containing mercury batteries, and metal barrels for contaminated soil shipment.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7439-97-6 Mercury	Sorbed liquid.	Unknown.	Unknown.	GM	1962	1962				

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Solid.	Unknown.	T .00000100000000	CI	1962	1962	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Unknown activity of Cs-137, Sr-89, Sr-90, and Ce-141.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Isotope make-up of MFP.

8. Key assumptions used to deal with the unknowns:
Assumed MFP to be Sr-90. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP, G-M method was used by generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 108

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/20/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 611
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Miscellaneous items: radios and other items confiscated as a result of a security investigation.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1961 Ending year 1966

9. Waste stream volume:
Amount 0.0566 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Other scrap metals.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Solid material in a BXC.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Cardboard box.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T .00050000000000	CI	1966	1966	N			
Sr-90	Solid.	Unknown.	T .00050000000000	CI	1966	1966	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60 and MFP equals Sr-90; based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP and MFP.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60 and MFP to be Sr-90. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP and G-M method was used by generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 109

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/19/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 613
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Soil and paper.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1962 Ending year 1962

9. Waste stream volume:
Amount 0.0563 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
43.

2. Details on physical form(particularly confinement related)
Unknown.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T .00050000000000	CI	1962	1962	N			
Sr-90	Solid.	Unknown.	T .00050000000000	CI	1962	1962	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60 and MFP equals Sr-90; based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP and MFP.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60 and MFP to be Sr-90.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION   HDT - 110

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/20/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 616
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Soil from auger sampling.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1963 Ending year 1963

9. Waste stream volume:
Amount 1.0190 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. CFA-616 - Old USGS building.

1. General physical form (see attached list)
Soil.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Three BXCs of soil.

3. Chemical form:
Soil.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Cardboard box.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Unknown origin of soil in disposal from USGS. Very probable that the soil was never analyzed for chemical hazardous substances.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T .00050000000000	CI	1963	1963	N			
Sr-90	Solid.	Unknown.	T .00050000000000	CI	1963	1963	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60 and MFP equals Sr-90; based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP and MFP.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60 and MFP to be Sr-90. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP, and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION   HDT - 127

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/29/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 617
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Plastic, paper and rags.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1982 Ending year 1983

9. Waste stream volume:
Amount 11.8120 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
9. Could only find 15 shipping records which account for 11.812 m3 and 0.005738 curies. RWMIS shows 22 records, 121.46 m3 and 0.01294 curies.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[ ] other (specify)

2. Details on physical form(particularly confinement related)
All waste is solid combustibles in BLXs.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Bale.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T .00283200000000	CI	1982	1983	N			
Sr-90	Solid.	Unknown.	T .00290700000000	CI	1982	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Could only account for 0.005738 Ci, but RWMIS shows 0.01294 curies. (See note A.10.)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
See note A.10.

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP and MFP.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60, and MFP to be Sr-90. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP, and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 129

1. Preparer: Jorgensen, Doug

2. Date prepared: 08/02/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 626
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Unknown - MFP.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1960

9. Waste stream volume:
Amount 0.0283 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
6. No description of waste other than MFP in a plastic bag.

1. General physical form (see attached list)
Unknown.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Waste is contained in a plastic bag.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other" equals plastic bag (1 cubic foot).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Solid.	Unknown.	T .00200000000000	CI	1960	1960	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
RWMIS lists MAP and MFP. The shipping record only shows MFP.

7. Major unknowns in inventories of contaminants:
Isotope make-up of MFP.

8. Key assumptions used to deal with the unknowns:
Assumed MFP to be Sr-90. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP, and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 97

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/28/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 633
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Basic trash - metal, wood, gravel, sand, etc.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1963 Ending year 1974

9. Waste stream volume:
Amount 14.0200 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. This building number has several references as to the type of operations conducted within. References as to the building operation include: Metallurgy and Material Science Building, Chemical Engineering Lab, and Reactor Engineering Building. The Installation Assessment Report states that, through the years, the CFA-633 building has housed various laboratory facilities.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
43.

2. Details on physical form(particularly confinement related)
Combustibles, cloth, paper, and wood.

3. Chemical form:
Metal, soil, lead, and combustibles.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other*.

6. Other characteristics of interest:
Other = dirt, gravel, contaminated asphalt, etc. that had no container.

7. Comments (specify number of pertinent question):
5. BLM, BXC, and BXW.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7440-41-7 Beryllium	Liquid (solidified in vermiculite).	Oxide (BeO).	T 15.407000000000	LB	1966	1966	N	7.703	30.813	See comment (a) below.
7439-92-1 Lead	Metal.	Lead.	Unknown.	GM	1963	1970	N			See comment (b) below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

a. Beryllium oxide is reported in 10 gallons of water. Reported only as small amount in water. Assume small amount is anywhere from 5% to 20% of volume of water.

b. Lead is reported in various shipping manifests. Based on entries, it appears that the volume is negligible.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid (metal, combustibles and gravel).	Unknown.	T .03725000000000	CI	1963	1974	N			
Fe-59	Solid (metal, combustibles and gravel).	Unknown.	T .00050000000000	CI	1963	1974	N			
Cs-137	Solid (metal, combustibles and gravel).	Unknown.	T .11770005000000	CI	1963	1974	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

MAP equals Co-60, MFP and UN-ID-B&G equals Cs-137. RWMIS reports 3000 Ci of unidentified beta/gamma. There are no records to verify this number and RWMIS reports a 0% match for any of this data. This number is highly suspect and should be dropped from the record.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
Interview with John Orullian. "EG&G Installation Assessment Report", EGG-WM-6875, January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:
None.

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
RWMIS reports 3000 Ci of unidentified beta/gamma with 0% matching data. No record could be found for this entry and this large number is highly suspect. It is recommended for exclusion from the database.

7. Major unknowns in inventories of contaminants:
Unknowns in reported curies without verification. Based on interviews, several attempts have been made to quantify hazardous chemicals produced and disposed. All attempts to determine extent and volume have been unsuccessful.

8. Key assumptions used to deal with the unknowns:
MAP/MFP determination. BeO determination.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 111

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/19/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 638
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Two shielded casks with a Co-60 source in each.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1980 Ending year 1980

9. Waste stream volume:
Amount 0.2265 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Radiation sources.
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)
Each of two casks contains a sealed Co-60 source.

3. Chemical form:

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other" equals two shielded casks.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7439-92-1 Lead	Shield.	Lead.	Unknown.	GM	1980	1980				

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Shipping records indicate two shielded casks. Assume casks are lead, no method to determine volume.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T 164.00000000000	CI	1980	1980	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information: (check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS? (Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Unknown volume of lead.

8. Key assumptions used to deal with the unknowns:
None.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 112

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/19/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 639
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Wood and metal scrap with beryllium contamination.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1967 Ending year 1967

9. Waste stream volume:
Amount 7.0500 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
8.

2. Details on physical form(particularly confinement related)
Solid.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Wooden box.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7440-41-7 Beryllium	Metal.	Unknown.	Unknown.	GM	1967	1967				

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Shipping records indicate "beryllium contaminants if uncovered". No means to determine volume.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	A .00100000000000	CI	1967	1967	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60, based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Isotopes which make up MAP.

8. Key assumptions used to deal with the unknowns:
MAP is made up of Co-60.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 119

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/21/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 640
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Machine shop waste (various types of metal chips and cleanup materials). Batteries and a cabinet from SL-1. Some stainless steel and some lead. (The batteries from SL-1 contained acid.)

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1964 Ending year 1964

9. Waste stream volume:
Amount 4.3040 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
6. RWMIS lists asbestos for one record. No mention of asbestos is made in the shipping manifest from which this record was derived.
9. RWMIS shows 4.304 cubic meters but calculations from shipping records show 3.624 cubic meters.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
7, 21, 45.

2. Details on physical form(particularly confinement related)
All items are solid except for the sulfuric acid in eight lead acid batteries. These batteries are not contained according to shipping record dated 09/01/64. Lead.

3. Chemical form:
Liquid H2SO4 in eight batteries.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other".

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7664-93-9 Sulfuric Acid	Liquid.	H2SO4.	T 32.300000000000	LB	1964	1964	N	-10%	+10%	See comment (a) below.
7439-92-1 Lead	Metal.	Lead.	T 70000.000000000	LB	1964	1964	N	35000	105000	See comment (b) below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
a. Sulfuric acid typically is one liter per battery, eight batteries equals eight liters of acid, which equals 32.32 lbs, plus/minus 10%.
b. Lead mentioned as constituent of each shipment. No means of determining volume of lead for each shipment. Assume average of all records/volumes that 65% is lead.
Minimum is based on 50% of overall volume, maximum is based on 50% of overall volume.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T .16000000000000	CI	1964	1964	N			
Sr-90	Solid.	Unknown.	T .15920000000000	CI	1964	1964	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60 and MFP equals Sr-90; based on best guess estimate.

1. Type of source of information: (check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping records.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS? (Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP and MFP. Volume of acid and lead.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60. Assumed MFP to be Sr-90. Assumed one liter per battery and assumptions used for lead. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP, and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 99

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/28/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 646
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Rad. contaminated combustibles (paper, cloth, wood, etc.).

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1961 Ending year 1963

9. Waste stream volume:
Amount 5.8900 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
6. Based on types of RWMIS entries and shipping records; assume all entries for rad. waste are combustibles.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Combustibles.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
None.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
None reported in this waste stream.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solids with surface contamination.	Unknown.	T .00250000000000	CI	1961	1963	N			
Cs-137	Solids with surface contamination.	Unknown.	T .00250000000000	CI	1961	1963	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60 and MFP equals Cs-137; based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
None.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Types of rad. waste are probable unknowns since shipping records are not clear.

8. Key assumptions used to deal with the unknowns:
MAP/MFP determination.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 98

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/28/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 646
(building number - use code from attached list)

5. Number of waste stream from this facility:
2H

6. Waste stream:
HF and HNO3 liquid waste.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[ ] LLW
[X] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1954 Ending year 1960

9. Waste stream volume:
Amount 0.3600 Units Cubic meters.
Check box: [ ] annual or [ ] total over all years
Check box: [ ] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
9. Not included in RWMIS - 95 gallons of liquid acid waste.

1. General physical form (see attached list)
Liquids.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Liquid acids.

3. Chemical form:
HF acid and HNO3 acid.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:
Liquids disposed from transport vehicle directly into acid pit as a liquid.

7. Comments (specify number of pertinent question):
6. Some liquid neutralized, during disposal, with lime.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7664393 Hydrofluoric Acid	Liquid.	70 % HF.	T 238.93000000000	LB	1954	1960	N			See comment below.
7697-37-2 Nitric Acid	Liquid.	HNO3.	T 2234.1857000000	LB	1954	1960	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Acid disposal (in SDA Acid Pit) based on liquid disposal records. No means to determine if this is a complete listing. Only reporting volume of acid for which records could be located.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

None reported for this liquid waste stream.

1. Type of source of information:
(check box)

[ ] RWMIS [X] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Chemical disposal records.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
Liquid waste not included in RWMIS.

7. Major unknowns in inventories of contaminants:
Extent of liquid waste. Not sure all records are accounted for.

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 113

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/19/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 649
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Waste NOS (not otherwise specified).

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1962 Ending year 1963

9. Waste stream volume:
Amount 0.6795 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Unknown.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Unknown.

3. Chemical form:

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Other*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
1. No information available on contents.
5. BXC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T .05000000000000	CI	1963	1963	N			
Sr-90	Solid.	Unknown.	T .05000000000000	CI	1963	1963	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

MAP equals Co-60 and MFP equals Sr-90; based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP and MFP.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60 and MFP to be Sr-90. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 130

1. Preparer: Jorgensen, Doug

2. Date prepared: 08/03/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 654
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Scrap metals, steel, beryllium, lead, zirconium, depleted uranium, sewer sludge, machine coolant, two radium sources, weeds and combustibles (paper, rags, etc.).

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1962 Ending year 1970

9. Waste stream volume:
Amount 50.3700 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Maintenance shop.
9. Shipping records indicated 49.469 m3 plus what was contained in a missing record. RWMIS shows 50.37 m3.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
3, 6, 7, 8, 9, 11, 15, 21, 31, 44.

2. Details on physical form(particularly confinement related)
All solids except for one 55-gallon drum of machine coolant.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. Twelve BXCs plus a variety of "Others". The "Others" included: none, plastic bags, plastic sheet, two dumpsters, lone empty tank and one tin can.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7439-92-1 Lead	Solid.	Metal.	T 800.00000000000	LB	1965	1965	N			
7440-41-7 Beryllium	Solid.	Oxide.	Unknown.	GM	1970	1970	N			
7440-67-7 Zirconium	Solid.	Metal.	T .40000000000000	LB	1968	1968	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
PA report describes 25 50-gallon drums of waste thinners (from painting operations) generated yearly at this shop, but none was believed to have been disposed of at RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T .85250000000000	CI	1964	1968	N	-20%	+20%	
Sr-90	Solid.	Unknown.	T .86350000000000	CI	1964	1970	N	-20%	+20%	
Ra-226	Solid.	Metal.	T .00000096000000	CI	1969	1969	N	-20%	+20%	
U-235	Solid.	Metal.	T .00010000000000	CI	1969	1969	N			
U-238	Solid.	Metal.	T .00090000000000	CI	1969	1969	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Assumed depleted uranium to be 10% U-235 and 90% U-238.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
PA report - EGG-WM-6875 - January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP, MFP and depleted uranium.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60, MFP to be Sr-90, and depleted uranium to be 10% U-235 and 90% U-238. No G-M correction is needed to the best estimate for the uranium radionuclide entries. The uranium entries in the waste stream were identified by analytical methods or weight. The G-M correction is needed to the best estimate for the other radionuclides, because they were estimated by that method. Upper and lower bounds estimated based on waste expert's judgment.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 114

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/19/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 659
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Plastic and cloth.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1983 Ending year 1983

9. Waste stream volume:
Amount 0.7928 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
44.

2. Details on physical form(particularly confinement related)
Solid.

3. Chemical form:
N/A.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Bale.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. Twenty each BLXs.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T .00039375000000	CI	1983	1983	N			
Sr-90	Solid.	Unknown.	T .00039375000000	CI	1983	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60 and MFP equals Sr-90; based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
None.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP and MFP.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60 and MFP to be Sr-90. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 107

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/15/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 660
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Metal and wood.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1972 Ending year 1976

9. Waste stream volume:
Amount 0.7362 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
8. Two shipments to SDA only. One in 1972 and one in 1976.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
21.

2. Details on physical form(particularly confinement related)
Wood and scrap metal, and waste container (metal).

3. Chemical form:
Metal and wood.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
5. "Other" equals waste in metal waste container cart.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
None reported or suspected.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Surface contamination of metal/wood.	Unknown.	T .00050000000000	CI	1972	1976	N			
Sr-90	Surface contamination of metal/wood.	Unknown.	T .02550000000000	CI	1972	1976	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60 and MFP equals Sr-90; based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
Shipping records.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
No information on chemical hazards.

8. Key assumptions used to deal with the unknowns:
Assume based on date of shipment and area in which the shipment was derived that chemical hazards do not exist or are negligible quantities. MAP/MFP determination. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP, G-M method was used by generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 100

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/28/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 665
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Two truck beds, three trailers, one forklift, one straddle carrier, some tires and wheels, an air compressor, and some wood.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1968 Ending year 1976

9. Waste stream volume:
Amount 83.8900 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. CFA-665 - Equipment Repair Building.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
21.

2. Details on physical form(particularly confinement related)
Scrap metal and metal trailers.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other" includes items listed in A.6 as bulk, unpackaged materials.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T .00467000000000	CI	1968	1975	N			
Sr-90	Solid.	Unknown.	T .00884000000000	CI	1968	1976	N			
Cs-137	Solid.	Unknown.	T .00006700000000	CI	1970	1974	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

RWMIS shows 0.0137 total. Totals above equal 0.013576 Ci.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping record:

2. Details concerning source (names, report no., dates, etc.)
"EG&G Installation Assessment Report", EGG-WM-6875, January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP, MFP and UN-ID-B&G.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60; MFP to be Sr-90; UN-ID-B&G to be 1/3 Co-60, 1/3 Sr-90, and 1/3 Cs-137. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 118

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/20/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 666
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
U-235, contaminated waste from simulated fire.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1965 Ending year 1965

9. Waste stream volume:
Amount 0.7932 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

PART B - WASTE STREAM CHARACTERISTICS CFA-666-1H HDT - 118

1. General physical form (see attached list)
Other scrap metals.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Waste in one 30 gallon drum and two BXCs.

3. Chemical form:
Depleted uranium.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Metal barrel.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. BXC, (1 BLM and 2 BXCs).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Solid.	Unknown.	T .00100000000000	CI	1965	1965	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
None.

8. Key assumptions used to deal with the unknowns:
No G-M correction is needed to the best estimate. The waste stream curie content and specific radionuclides were determined by means of the generator's analytical methods prior to shipping. Upper and lower bounds are estimated based on waste expert's judgment.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 210

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/20/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 666
(building number - use code from attached list)

5. Number of waste stream from this facility:
2H

6. Waste stream:
Depleted uranium turnings in mineral oil.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1967 Ending year 1967

9. Waste stream volume:
Amount 0.4248 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

PART B - WASTE STREAM CHARACTERISTICS CFA-666-2H HDT - 210

1. General physical form (see attached list)
Unirradiated fuel from experiments.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Two 55-gallon drums, each contain a smaller drum packed in sawdust, which contains depleted uranium turnings in mineral oil.

3. Chemical form:

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
See 2 above.

5. Waste container type (see attached list)
Metal barrel.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. Two each BLMs.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Solid in oil.	Oxide.	T .00006480000000	CI	1967	1967	N	-50%	+50%	
U-238	Solid in oil.	Oxide.	T .00466500000000	CI	1967	1967	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
None.

8. Key assumptions used to deal with the unknowns:
No G-M correction is needed to the best estimate. The waste stream curie content and specific radionuclides were determined by means of the generator's analytical methods prior to shipping. Upper and lower bounds are estimated based on waste expert's judgment.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 115

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/20/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 667
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Clothing, plastic bags and sweepings.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1964 Ending year 1964

9. Waste stream volume:
Amount 1.0190 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. This should be included with CFA-669 (CFA laundry) according to shipping records (attached). Probable error in coding at the top of the shipping record and in RWMIS.

PART B - WASTE STREAM CHARACTERISTICS CFA-667-1H HDT - 115

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Three BXCs of waste.

3. Chemical form:

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Cardboard box.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Surface contamination.	Unknown.	T .05000000000000	CI	1964	1964	N			
Sr-90	Surface contamination.	Unknown.	T .05000000000000	CI	1964	1964	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

RWMIS lists zero curies. Based on 10 MR/L contact reading, assume some curies are present although not shown on shipping records. A total of 0.10 Ci estimated for shipment based on a review of shipments similar to this. MAP/MFP was also best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
RWMIS reports zero curies but, based on a contact radiological reading, rad contamination of the package was assumed.

7. Major unknowns in inventories of contaminants:
Unknown curie content of shipment.

8. Key assumptions used to deal with the unknowns:
MAP/MFP determination and curie content estimate. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 212

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/20/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 667
(building number - use code from attached list)

5. Number of waste stream from this facility:
2H

6. Waste stream:
Contaminated lead.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1963 Ending year 1963

9. Waste stream volume:
Amount 0.1699 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

PART B - WASTE STREAM CHARACTERISTICS CFA-667-2H HDT - 212

1. General physical form (see attached list)
Lead.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Probably metal.

3. Chemical form:
Meal.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other" container type is a "GI can".

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7439-92-1 Lead	Metal.	Lead.	T 4322.0000000000	LB	1963	1963	N	4106	4538	+/- 5%. See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty: +/-5% based on estimate that most, if not all, of the shipment weight/volume is lead.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T .00500000000000	CI	1963	1963	N			
Sr-90	Solid.	Unknown.	T .00500000000000	CI	1963	1963	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60 and MFP equals Sr-90; based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Isotope makeup of MAP and MFP.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60. Assumed MFP to be Sr-90. Percentage of lead in shipment. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 132

1. Preparer: Jorgensen, Doug

2. Date prepared: 08/02/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 669
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Combustibles and dirt.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1982

9. Waste stream volume:
Amount 722.5520 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. CFA-669 is the Central Facilities Laundry.
9. Original RWMIS records report 720.4 m3 waste stream volume. An additional RWMIS listing labeled CFA-699, should have been CFA 669 and contains two records that have been added here. The CFA-699 records have a total volume of 2.152 m3.

PART B - WASTE STREAM CHARACTERISTICS CFA-669-1H HDT - 132

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Rags, paper, and wood.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
5. BLM, BLX, BXW and "Other". "Other" includes disposed dirt and a large metal item, such as a laundry washer.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Based on interviews with Dixie Lainhart and Judy Lish, no information is available on CFA laundry hazardous chemical wastes disposed of.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Contaminated clothing, paper, dirt and metal.	Unknown.	T 10.200000000000	CI	1960	1982	N			
Cs-137	Contaminated clothing, paper, dirt and metal.	Unknown.	T 10.394000000000	CI	1960	1982	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60, MFP and UN-ID-B&G equals Cs-137; both based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
Interviews concerning hazardous chemicals with Judy Lish and Dixie Lainhart. "EG&G Installation and Assessment Report", EGG-WM-6875, January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
No data available on hazardous chemicals.

8. Key assumptions used to deal with the unknowns:
MAP/MFP determination.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 101

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/27/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 674
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Laboratory waste contaminated with P-32, U-235 and U-238. Excess property (furniture, machinery, valves, boxes, wire, noses, and filters) and combustible waste.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1961 Ending year 1975

9. Waste stream volume:
Amount 26.1900 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
9. RWMIS shows 26.48 m3.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
2, 21, 22, 42, 44, 45.

2. Details on physical form(particularly confinement related)
A 07/06/67 shipment of aluminum particles coated with UO3 is contained in a glass bottle (1 ft3) and 5E-4 curies.

3. Chemical form:
Some UO3 (0.1699 m3 and 6E-3 curies).

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Other*.

6. Other characteristics of interest:
Other equals bulky scrap metal not in containers.

7. Comments (specify number of pertinent question):
5. BXC and BLM.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Liquid chemical waste included with CPP waste.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
P-32	Solid.	Unknown.	T .00100000000000	CI	1961	1961	N	-20%	+20%	
Co-60	Solid.	Unknown.	T .00400000000000	CI	1966	1975	N	-20%	+20%	
Sr-90	Solid.	Unknown.	T .00860000000000	CI	1963	1975	N	-20%	+20%	
I-131	Solid.	Unknown.	T .00001000000000	CI	1965	1965	N	-20%	+20%	
Cs-137	Solid.	Unknown.	T .00040000000000	CI	1971	1974	N	-20%	+20%	
U-235	Solid.	Unknown.	T .00900000000000	CI	1965	1965	N			
U-238	Solid.	Unknown.	T .10050000000000	CI	1967	1969	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Pu oxide shown on RWMIS for 09/29/67 shipment, but shipping records do not show any. There were a number of places where RWMIS data did not reflect shipping record data. This tabulation reflects shipping record data. RWMIS isotopic breakdown and totals differ somewhat from shipping records. Total curies per RWMIS is 0.1225. Unknown uranium isotope of (0.008Ci) is assumed to be U-235.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
Numerous discrepancies in isotope reported from shipping records versus RWMIS.

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP, MFP and UN-ID-B&G.

8. Key assumptions used to deal with the unknowns:
Assumed Map to be Co-60; MFP to be Sr-90; UN-ID-B&G to be 1/3 Co-60, 1/3 Sr-90, and 1/3 Cs-137. No G-M correction is needed to the best estimate for the uranium radionuclide entries. The uranium entries in the waste stream were identified by analytical methods or weight. The G-M correction is needed to the best estimate for the other radionuclides, because they were estimated by that method. Upper and lower bounds estimated based on waste expert's judgment.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 126

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/27/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 683
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Contaminated crane, two pickups, tanker, trailer, traveler wheels, scrap metal and some wood.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1971 Ending year 1973

9. Waste stream volume:
Amount 74.8000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
7. RWMIS shows 73.5 m3 over seven records. Could only find six shipping records.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
21.

2. Details on physical form(particularly confinement related)
Appears to be solid direct burial with no confinement.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:
Direct burial.

7. Comments (specify number of pertinent question):
5. Does not appear to be any packaging, only direct burial.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for • Uncertainty
Co-60	Solid.	Unknown.	T .02140000000000	CI	1972	1973	N			
Sr-90	Solid.	Unknown.	T .02998000000000	CI	1973	1973	N			
Cs-137	Solid.	Unknown.	T .01100000000000	CI	1973	1973	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

MAP equals Co-60, MFP equals Sr-90, UN-ID-B&G equals 1/3 Co-60, 1/3 Sr-90, and 1/3 Cs-137; based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
"EG&G Installation and Assessment Report", EGG-WM-6875, January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
Could only find six shipping records. Remaining records agree closely.

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP, MFP and UN-ID-B&G.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60; MFP to be Sr-90; and UN-ID-B&G to be 1/3 Co-60, 1/3 Sr-90 and 1/3 Cs-137. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 186

1. Preparer: Jorgensen, Doug

2. Date prepared: 09/20/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 684
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Irradiated steel specimens, rags, paper, plastic bags and some graphite.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1967 Ending year 1969

9. Waste stream volume:
Amount 0.5578 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. RWMIS records for CFA-635 are in error and belong to CFA-684 (Reactor Eng.). Those records were added to this form.
9. RWMIS shows 0.396 m3. Only two of 13 "volumes" taken from the shipping papers were entered correctly.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
16, 21.

2. Details on physical form(particularly confinement related)
Most metal specimens were transported using a lead pig, but were removed from the pig before burial in poly rag.

3. Chemical form:
Unknown.

4. Inner packaging: [X] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Other*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. BXC and "Other", equals packaged materials unloaded from lead pig in poly bags. Also, tin can for one shipment and a 5-gallon poly carboy for another shipment.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
143-33-9 Sodium Cyanide	Liquid.	Sodium cyanide.	T 936.00000000000	GM	1967	1967	N			
1310-73-2 Sodium Hydroxide	Liquid.	Sodium hydroxide.	T 148.00000000000	GM	1967	1967	N			
None-CN. Cyanide	Liquid sorbed onto vermiculite.	Unknown.	Unknown.	GM	1969	1969	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Also, 6 oz. of an additional compound designated CD, which is not readable, were disposed of in 1967. The 1969 shipment was in a 5-gallon carboy.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Fe-59	Solid.		T .70000000000000	CI	1968	1968	N			
Co-60	Solid.		T 46.250000000000	CI	1968	1969	N			
Sr-90	Solid.		T 51.250000000000	CI	1968	1969	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60 and MFP equals Sr-90; based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping records.

2. Details concerning source (names, report no., dates, etc.)
"EG&G Installation and Assessment Report", EGG-WM-6875, January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
Most volumes were entered incorrectly. Seven and 1/2 curies was missed on RWMIS. The 04/15/68 shipment was Fe-59, but RWMIS shows MAP and MFP.

7. Major unknowns in inventories of contaminants:
Isotope make up of MAP and MFP.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60, MFP to be Sr-90. Assumed shipping papers to be correct. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 185

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/15/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 685
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Metal, paper and cloth (oil soaked).

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1972 Ending year 1974

9. Waste stream volume:
Amount 31.1500 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. CFA-685 is currently the bus depot.
8. Two records of disposal. One in 1972 and one in 1974.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)
Contaminated SL-1 dump-truck, oil soaked rags and paper.

3. Chemical form:
Combustibles and metal.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:
Bulky items, such as a dump-truck, with no packaging.

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Five gallons of petroleum reported to have been disposed.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Surface contamination of metal and combustibles.	Unknown.	T .00250000000000	CI	1972	1974	N			
Cs-137	Surface contamination of metal and combustibles.	Unknown.	T .04760000000000	CI	1972	1974	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60 and MFP equals Cs-137; based on best guess estimate and the fact that the truck was involved in SL-1 cleanup.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Unknown volume of oil.

8. Key assumptions used to deal with the unknowns:
MAP and MFP determination.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 102

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/28/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 687
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Scrap metal and lead.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1964 Ending year 1980

9. Waste stream volume:
Amount 22.7400 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. CFA-687 is the CFA Lead Shop.

1. General physical form (see attached list)
Lead.
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)
Lead scrap.

3. Chemical form:
Metal.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other*.

6. Other characteristics of interest:
Other in #5 is lead cask and bulky items not packaged.
Probably some bulk soil.

7. Comments (specify number of pertinent question):
5. BXW. One-half are BXW.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7439-92-1 Lead	Metal.	Lead.	T 333879.40000000	LB	1964	1980	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Lead reported in shipping manifests with other items such as metal, soil, dirt, etc. Considered as an estimate, when lead was included with other items, that 1/2 of the volume was lead. This is the best estimate that can be made and is within +/-20%, based on the level of errors in this type of assumption.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Metal with surface contamination.	Unknown.	T .02270000000000	CI	1964	1980	N			
Cs-137	Metal with surface contamination.	Unknown.	T .02270000000000	CI	1964	1980	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60 and MFP equals Cs-137; based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
None.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
No information could be obtained other than records. Two records could not be located for verification.

8. Key assumptions used to deal with the unknowns:
Percentage lead and MFP/MAP determination.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 131

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/28/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 690
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Combustibles, animal carcasses and feces, scrap metal, sources, sand and gravel.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1981

9. Waste stream volume:
Amount 451.5000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
CFA-690 is the RESL building.

1. General physical form (see attached list)
Biological waste.
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)
Animal carcasses and feces.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
5. BLM, BXW and "Other". BXC is predominant container type and "Other" equals bulky unpackaged items. Types are listed in descending order of appearance in RWMIS.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7440-67-7 Zirconium	Metal and alloy.	Zirconium.	T 2100.0000000000	LB	1969	1969	N	-10%	+10%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
1. Zirconium metal and alloy shipped in 27 metal tote boxes and volume of zirconium in boxes is an approximation +/-10%.
2. Could not locate disposal records for sulfuric acid, however, RWMIS tech. notes for this generator identifies these wastes as entries on shipping records. Because shipping records cannot be located for verification, quantities disposed of will not be estimated.
3. P-terphenyl (Santo wax) with a CAS # of 92-94-4 was disposed of as a liquid with a quantity estimated of 90,754 gallons, +/-10%. Santo Wax is not on the CERCLA list.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Sources - surface contimination.	Unknown.	T 61.526000000000	CI	1960	1981	N	-50%	+50%	
Cs-134	Surface contamination.	Unknown.	T .00003300000000	CI	1960	1981	N	-50%	+50%	
Cs-137	Surface contamination.	Unknown.	T 31.901000000000	CI	1960	1981	N	-50%	+50%	
I-131	Lab and animal waste.	Unknown.	T .00013300000000	CI	1960	1981	N	-50%	+50%	
Mn-54	Lab and animal waste.	Unknown.	T .00293000000000	CI	1960	1981	N	-50%	+50%	
Pu-240	Solid.	Unknown.	T .00100000000000	CI	1960	1981	N	-50%	+50%	
Ra-226	Sources.	Unknown.	T .03770000000000	CI	1960	1981	N	-50%	+50%	
Ru-103	Unknown.	Unknown.	T .00125000000000	CI	1960	1981	N	-50%	+50%	
Sr-85	Unknown.	Unknown.	T .00010000000000	CI	1960	1981	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60, MFP equals 1/2 Cs-137 and 1/2 Sr-90 and UN-B&G equals Sr-90; based on best guess estimate.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Surface contamination.	Unknown.	T 34.959000000000	CI	1960	1981	N	-50%	+50%	
U-235	Unknown.	Unknown.	T .00003234000000	CI	1960	1981	N	-50%	+50%	
U-238	Unknown.	Unknown.	T .00310000000000	CI	1960	1981	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

MAP equals Co-60, MFP equals 1/2 Cs-137 and 1/2 Sr-90 and UN-B&G equals Sr-90; based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
Interview with Darlene Blomstrom and John Marthis.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Hazardous substances total volume and/or additions. Unknowns of some of the processes. Appears this building shipped waste from a variety of sources.

8. Key assumptions used to deal with the unknowns:
MAP, MFP and unidentified beta/gamma determination. Did not pull out all 203 shipping records. Assume the 2/3 of the total that were looked at are representative of entire record set. No G-M correction is needed to the best estimate. The waste stream curie content and specific radionuclides were determined by means of the generator's analytical methods prior to shipping. Upper and lower bounds are estimated based on waste expert's judgment.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 125

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/19/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 691
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Sewage plant sludge, plant waste, wood and metal.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1975 Ending year 1980

9. Waste stream volume:
Amount 53.3900 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Sludge.
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)
Primarily sewer sludge.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Wooden box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. BLM, primarily BXW (9), but also includes 4 BLM containers.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Based on interviews, no information is available on hazardous chemicals from this generator.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T .08270000000000	CI	1975	1980	N			
Sr-90	Solid.	Unknown.	T .09025000000000	CI	1975	1979	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

MAP equals Co-60 and MFP equals Sr-90; based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
Interviews with Dixie Lainhart.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP and MFP.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60 and MFP to be Sr-90. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 116

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/20/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 698
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Beryllium samples which were contaminated by ATR, primary coolant.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1970 Ending year 1970

9. Waste stream volume:
Amount 0.0283 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Beryllium.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Beryllium samples are contained in a plastic bag.

3. Chemical form:
Metal.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other" equals plastic bags.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7440-41-7 Beryllium	Metal.	Beryllium.	T 115.20000000000	LB	1970	1970	N	-100%	+100%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty: based on shipping record - beryllium is in plastic bags and entire volume can be assumed to be beryllium.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Solid.	Metal.	T .00100000000000	CI	1970	1970	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MFP equals Sr-90, based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Isotope make-up of MFP and volume of beryllium.

8. Key assumptions used to deal with the unknowns:
Assumed MFP to be Sr-90. Assumptions in Be calculation. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP, G-M method was used by generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 124

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/22/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: 766
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Sludge tank sludge, soil, piping, cans and wood.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1973 Ending year 1981

9. Waste stream volume:
Amount 82.5300 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
9. Could not find shipping records for 19 BXW (volume 68.87 m3 and 0.135 Ci). RWMIS lists 151.40 m3, but because shipping records could not be verified, assume these 19 BXWs were not shipped.

1. General physical form (see attached list)
Sludge.
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)
Sewer sludge from CFA sewage treatment plant (dried).

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Wooden box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. Primarily BXW, but some "Others" listings. No information available on the "Others".

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Based on interviews, no information is known concerning hazardous chemicals in this waste stream.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Sludge, wood and metal.	Unknown.	T .06490000000000	CI	1964	1983	N			
Cs-137	Sludge, wood and metal.	Unknown.	T .07390000000000	CI	1964	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60; MFP equals Cs-137; based on best guess estimate.

1. Type of source of information: (check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
Interviews with Dixie Lainhart.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS? (Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
RWMIS reports a 1983 record with 68.87 m3 and 0.135 curies. There are no verifying records and RWMIS shows no matching information. This data was dropped from the record.

7. Major unknowns in inventories of contaminants:
No information on chemical hazardous material.

8. Key assumptions used to deal with the unknowns:
MAP/MFP determination and deletion of 1983 record.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 104

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/21/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: CFA
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Laundry waste general plant waste graphite, stainless steel tubes and samples, Mark 'B7 specimens, rubber fabric hose and some steel backhoe parts.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1971 Ending year 1971

9. Waste stream volume:
Amount 18.7900 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
3. This generic RWMIS listing (CFA) includes primarily three generators, including: CFA Health Physics, Metallurgy and Materials Science, and CFA Maintenance.

PART B - WASTE STREAM CHARACTERISTICS CFA-CFA-1H HDT - 104

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)
Solid.

3. Chemical form:

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other" equals plastic bags, two lead casks, which were not buried, and some backhoe parts wrapped in plastic.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Although hazardous chemicals are not reported, it would seem probable that some hazardous chemicals would have been disposed with the waste shipment from the CFA Metallurgy and Materials Science Lab.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Solid.	Unknown.	T 1.0390000000000	CI	1971	1971	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MFP equals Sr-90, based on best guess estimate.

1. Type of source of information: (check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS? (Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
RWMIS shows 4 each "Others" (containers), but one of the shipping records (01/28/71) doesn't have the number of containers. Assuming this 1/2 cubic foot "Other" to be one, gives a total of five "Others". All other data agree.

7. Major unknowns in inventories of contaminants:
Isotope make-up of MFP.

8. Key assumptions used to deal with the unknowns:
Assumed MFP to be Sr-90. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP, G-M method was used by generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 123

1. Preparer: Jorgensen, Doug

2. Date prepared: 08/03/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: EBR
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Contaminated soil, concrete, bricks, piping, components, metal scrap, rags, mops, filters, wooden pallets and plastic wrapping.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1974 Ending year 1981

9. Waste stream volume:
Amount 350.4000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
9. RWMIS shows 350.4 m3. Shipping records available accounted for 325 m3. There were 13 files listed on RWMIS for 1974, which could not be located. There were some disagreements between shipping records and RWMIS as shown.

1. General physical form (see attached list)
Soil.
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)
Much soil was apparently transported loose.

3. Chemical form:

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Other*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. BLM, BXC, BLX, and BXW. Much soil transported in undefined "Other" containers.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
11135-81-2 Sodium Potassium	Solid.	NaOH/KOH.	T 3793.5000000000	LB	1974	1981	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Starting year and ending year are unknown. NaK was reacted with water in a strongly basic solution (NaOH/KOH), the solution solidified by evaporation and cooling and disposed of as solid waste at RWMC in 93 drums.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	NaOH/KOH.	T .00130000000000	CI	1975	1981	N			
Sr-90	Solid.	NaOH/KOH.	T .11110000000000	CI	1974	1981	N			
Cs-137	Solid.	NaOH/KOH.	T 20.280000000000	CI	1975	1975	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
RWMIS shows 21.39 curies. There are 15 instances where the shipping records differ from RWMIS. This amounts to a 15 curie deficit on RWMIS.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
"EG&G Installation and Assessment Report" for NaK shipments, EGG-WM-6875, January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
There is about a 15 curie deficit in RWMIS on just 15 records. (See RWMIS and work sheet.)

7. Major unknowns in inventories of contaminants:
Isotope make-up of MAP and MFP. Chemical form of NaK neutralized solid is correct volume.

8. Key assumptions used to deal with the unknowns:
Assumed MAP to be Co-60, assumed MFP to be Sr-90. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP, G-M method was used by generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 103

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/19/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: EFS
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Contaminated sod, wood and blotting paper.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1981 Ending year 1981

9. Waste stream volume:
Amount 25.3680 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. EFS - Dairy Farm.

1. General physical form (see attached list)
Soil.
[X] other (specify)
21.

2. Details on physical form(particularly confinement related)
All waste in BXW.

3. Chemical form:

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Wooden box.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. Twelve each 64 cubic ft. and 1 each 128 cu ft.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ba-133	Solid.	Unknown.	T .00107000000000	CI	1981	1981	N			
Cs-137	Solid.	Unknown.	T .00036000000000	CI	1981	1981	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
None.

8. Key assumptions used to deal with the unknowns:
None.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 105

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/19/93

3. Generator: CFA
(area or contractor - use code from attached list)

4. Particular facility: ZPR
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Various ripout materials, including contaminated tubing, a uranium film sampler, structural metals, concrete, rags, paper and plastic.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1974 Ending year 1974

9. Waste stream volume:
Amount 104.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. ZPR - Zero Power Reactor III.
9. RWMIS shows 98.33 m3.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
5.

2. Details on physical form(particularly confinement related)
Solids.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Other*.

6. Other characteristics of interest:
Records indicate that most of the "other" were loose loads of ripout structural material.

7. Comments (specify number of pertinent question):
5. BXC and BLX.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Solid.	Unknown.	T .00200000000000	CI	1974	1974	N	-50%	+50%	
U-238	Solid.	Unknown.	T .01210000000000	CI	1974	1974	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping records.

2. Details concerning source (names, report no., dates, etc.)
"EG&G Installation Assessment Report", EGG-WM-6875, January, 1986.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
Curie content matches but volume shown in cubic meters differs some what (see A.10).

7. Major unknowns in inventories of contaminants:
Isotopes which make-up UN-ID-Alpha and MFP.

8. Key assumptions used to deal with the unknowns:
Assumed UN-ID-Alpha to be U-238, MFP to be Cs-137. No G-M correction is needed to the best estimate. The waste stream curie content and specific radionuclides were determined by means of the generator's analytical methods prior to shipping. Upper and lower bounds are estimated based on waste expert's judgment.

Idaho Chemical Processing Plant

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 59

1. Preparer: Rhodes, Donald W.

2. Date prepared: 06/29/93

3. Generator: CPP
(area or contractor - use code from attached list)

4. Particular facility: 601
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Leached vycor glass.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1966 Ending year 1970

9. Waste stream volume:
Amount 1.7380 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
6. EBR-II fabricated fuel elements in a pyrometallurgical process by pouring molten uranium into vycor glass tubing molds. The molds were then crushed to remove the uranium fuel rods. The crushed vycor glass was then transported to the CPP, where it was leached with hot nitric acid in the multicurie cell facility. The leached glass was then packaged and disposed of at the RWMC.

1. General physical form (see attached list)
Glass.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Broken pieces of glass.

3. Chemical form:
Primarily SiO_2.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:
The glass was returned to the metal paint cans in which it was shipped to CPP, the lid crimped shut, and the cans transported in a cask to the RWMC.

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Y-90	Sorbed on particles of glass.	Probably present as the oxide.	T 9848.0000000000	CI	1966	1970	N	-50%	+50%	See comment below.
Ce-144	Sorbed on particles of glass.	Probably present as the oxide.	T 24620.000000000	CI	1966	1970	N	-50%	+50%	See comment below.
Sr-90	Sorbed on particles of glass.	Probably present as the oxide.	T 9848.0000000000	CI	1966	1970	N	-50%	+50%	See comment below.
Cs-137	Sorbed on particles of glass.	Probably present as the oxide.	T 4924.0000000000	CI	1966	1970	N	-50%	+50%	See comment below.
Pr-144	Sorbed on particles of glass.	Probably present as the oxide.	T 24620.000000000	CI	1966	1970	N	-50%	+50%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The shipment records all listed MFP for the radionuclides; accordingly, it was necessary to break the MFP down into individual radionuclides as described in Section E.
Also, the total curies for a shipment was probably determined from radiation readings that were applied a conversion factor.

1. Type of source of information:
(check box)

[X] RWMIS [X] other database
[ ] sample analysis data
[ ] operating records [X] interview
[X] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
The "qualifier flag" database, which lists items that were on the shipment record but not in RWMIS, provided a means for identifying the vycor glass shipments, even though they were listed on the records in at least 6 different ways. M.E. Jacobson, who worked on the process, was interviewed for additional information. Report used was EGG-WM-9857, June 1992.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Method of determining total Ci per shipment was probably conversion of a radiation reading. Curies were reported as MFP, so it was necessary to convert these values to specific radionuclides.

8. Key assumptions used to deal with the unknowns:
Assumed that a +/-50% variance would account for any errors associated with converting radiation readings to curies. Assumed that the breakdown of MFP into specific radionuclides by using information supplied by ANL-W personnel and reported by EGG-WM-9857, June 1992 was reasonably accurate or at least within the +/-50% variance used.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 60

1. Preparer: Rhodes, Donald W.

2. Date prepared: 07/06/93

3. Generator: CPP
(area or contractor - use code from attached list)

4. Particular facility: 601
(building number - use code from attached list)

5. Number of waste stream from this facility:
2H

6. Waste stream:
Insulation, pipe, wire, wood, plastic, rags and concrete.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[ ] LLW
[X] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1970

9. Waste stream volume:
Amount 0.9140 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Asbestos.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Primarily in the form of insulation covering pipe in the Waste Calciner Facility oil fired burner.

3. Chemical form:
Asbestos.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:
All shipments were mixed with other waste, including metal pipe, wire, wood, plastic, rags and concrete.

7. Comments (specify number of pertinent question):
5. BXC, BLM. The waste calcining facility used an oil fired NaK heating system to provide heat for the calcination process. Circulating the heated NaK through the piping system produced corrosion on the piping, which occasionally resulted in a NaK fire when the corrosion resulted in a break in the piping. When this occurred, the system was shut down and the faulty pipe section was replaced with new pipe. The piping that was removed along with the asbestos that insulated the pipe, were disposed to the RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
1332-21-4 Asbestos	Formed as a blanket around steel pipe.	Unknown.	T 240.00000000000	LB	1960	1970	N	-50%	+50%	Insulation was only 1 of the items in ea. shipment

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Estimated that asbestos was about 10% of the total container volume within +/-50%. This is believed to be a conservative value based on the fact that much of the material in the shipment was piping, which packs very loosely.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The oil fired furnace that used the NaK for a heat exchange medium was in a non-radioactive area. Components other than insulation in the shipments were contaminated, but even that contamination amounted to less than 1 Ci for all shipments.

1. Type of source of information:
(check box)

[X] RWMIS [X] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[X] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Some shipments that were listed in RWMIS as "paper, metal, and wood" were shown in the qualifier database to contain insulation.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
The amount of insulation was not specified. It was usually mixed with other waste in the shipment.

8. Key assumptions used to deal with the unknowns:
Assumed that the volume of insulation was 10% of the volume of the container, and that the variance was +/-50%. This is believed to be a conservative value.

Continuation of Part B Column or Question Number or Title 6.

Since the insulation came from the NaK heating system in the WCF, traces of NaK could have been in the piping that was shipped to the RWMC. This would have been a very small amount, and probably would not have been associated with the asbestos itself.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 74

1. Preparer: Rhodes, Donald W.

2. Date prepared: 07/13/93

3. Generator: CPP
(area or contractor - use code from attached list)

4. Particular facility: 601
(building number - use code from attached list)

5. Number of waste stream from this facility:
3H

6. Waste stream:
Dissolved fuel specimens.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1969 Ending year 1969

9. Waste stream volume:
Amount 0.0568 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
6. This waste stream represents one waste shipment. Fuel specimens dissolved in HF-HN03, then reacted with plaster of paris.

1. General physical form (see attached list)
Vermiculite and other sorbents.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
The liquid dissolver solution was reacted with plaster of paris, and the resulting solid was contained in three 5-gallon polyethylene bottles.

3. Chemical form:
Calcium sulfate, containing uranium, zirconium and radionuclides.

4. Inner packaging: [ ] plastic bag [ ] plastic liner [ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:
The waste containers were three 5-gallon polyethylene bottles.

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Ions in sol. sorbed on & reacted w/calcium sulfate	Sulfate salts.	T 4000.0000000000	CI	1969	1969	N	-25%	+25%	No actual sample results available. See next page.
Y-90	Ions in sol. sorbed on & reacted w/calcium sulfate	Sulfate salts.	T 4000.0000000000	CI	1969	1969	N	-25%	+25%	No actual sample results available. See next page.
Zr-95	Ions in sol. sorbed on & reacted w/calcium sulfate	Sulfate salts.	T 1240.0000000000	CI	1969	1969	N	-25%	+25%	No actual sample results available. See next page.
Nb-95	Ions in sol. sorbed on & reacted w/calcium sulfate	Sulfate salts.	T 1240.0000000000	CI	1969	1969	N	-25%	+25%	No actual sample results available. See next page.
Cs-137	Ions in sol. sorbed on & reacted w/calcium sulfate	Sulfate salts.	T 4000.0000000000	CI	1969	1969	N	-25%	+25%	No actual sample results available. See next page.
Ce-144	Ions in sol. sorbed on & reacted w/calcium sulfate	Sulfate salts.	T 7880.0000000000	CI	1969	1969	N	-25%	+25%	No actual sample results available. See next page.
Pr-144	Ions in sol. sorbed on & reacted w/calcium sulfate	Sulfate salts.	T 7880.0000000000	CI	1969	1969	N	-25%	+25%	No actual sample results available. See next page.
Sb-125	Ions in sol. sorbed on & reacted w/calcium sulfate	Sulfate salts.	T 1760.0000000000	CI	1969	1969	N	-25%	+25%	No actual sample results available. See next page.
Ru-106	Ions in sol. sorbed on & reacted w/calcium sulfate	Sulfate salts.	T 4000.0000000000	CI	1969	1969	N	-25%	+25%	No actual sample results available. See next page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Physical form: Ions in solution sorbed on and reacted with calcium sulfate. Specimens of Navy fuel were irradiated in the ETR, then dissolved in a nitric acid-hydrofluoric acid mixture. At the completion of the experiment, the acidic dissolver product solution was reacted with Plaster of Paris (calcium sulfate) in 5-gallon plastic bottles and disposed to the RWMC. An interview with the chemist who performed the work indicated that the reactor history of the fuel specimens was well known. That, together with radiation measurements, was used to determine the total curies. On that basis, the variance was estimated to be +/-25%. The fission product distribution used was that given in EGG-WM-9857. The amount of U-235 is believed to be based on a sample analysis.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Rh-106	Ions in sol. sorbed on & reacted w/calcium sulfate	Sulfate salts.	T 4000.0000000000	CI	1969	1969	N	-25%	+25%	No actual sample results available. See next page.
U-235	Ions in sol. sorbed on & reacted w/calcium sulfate	Sulfate salts.	T .15000000000000	CI	1969	1969	N	-25%	+25%	No actual sample results available. See next page.
U-234	Ions in sol. sorbed on & reacted w/calcium sulfate	Sulfate salts.	T 4.7000000000000	CI	1969	1969	N	-25%	+25%	No actual sample results available. See next page
U-238	Ions in sol. sorbed on & reacted w/calcium sulfate	Sulfate salts.	T .05000000000000	CI	1969	1969	N	-25%	+25%	No actual sample results available. See next page

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Physical form: Ions in solution sorbed on and reacted with calcium sulfate. Specimens of Navy fuel were irradiated in the ETR, then dissolved in a nitric acid-hydrofluoric acid mixture. At the completion of the experiment, the acidic dissolver product solution was reacted with Plaster of Paris (calcium sulfate) in 5-gallon plastic bottles and disposed to the RWMC. An interview with the chemist who performed the work indicated that the reactor history of the fuel specimens was well known. That, together with radiation measurements, was used to determine the total curies. On that basis, the variance was estimated to be +/-25%. The fission product distribution used was that given in EGG-WM-9857. The amount of U-235 is believed to be based on a sample analysis.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[X] expert judgment [ ] reports
[X] other
Waste shipping form.

2. Details concerning source (names, report no., dates, etc.)
The shipping form showed that the waste was buried in trench 50 on 07-15-69. The individual who was interviewed and who performed the experimental work was L.A. Decker, currently employed by WINCO at CPP. The report used was EGG-WM-9857.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
No analytical results to give the breakdown for radionuclides were available.

8. Key assumptions used to deal with the unknowns:
Assumed that the detailed knowledge of the reactor history of the fuel specimens together with the radiation readings taken at the time of disposal permitted the total curies to be estimated within +/-25%. Assumed also, that the radionuclide breakdown reported in EGG-WM-9857, was applicable to this waste stream.

Continuation of Part D Column or Question Number or Title Radionuclide.

The distribution for U-234 and U-238 was added, and the number of curies of U-235 was modified. All this was done per B. L. Rich, et al. "Health Physics Manual of Good Practices for Uranium Facilities", EG&G Idaho, Inc. EGG-2530, June 1988.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 86

1. Preparer: Rhodes, Donald W.

2. Date prepared: 07/28/93

3. Generator: CPP
(area or contractor - use code from attached list)

4. Particular facility: 601
(building number - use code from attached list)

5. Number of waste stream from this facility:
4H

6. Waste stream:
Acidic aqueous liquid.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[ ] LLW
[X] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1954 Ending year 1970

9. Waste stream volume:
Amount 173300.0000 Units Gallons.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
4. Much of this waste actually was produced at CF674A, which was a pilot plant located at CFA, but working on CPP dissolution and extraction experiments and processes.
8. More than 90% of this waste was generated in the years 1954-1957.

1. General physical form (see attached list)
Liquids.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
The waste was disposed as an acidic liquid, but many tons of lime were added to the disposal pit to neutralize the acid.

3. Chemical form:
Chemicals dissolved in acid and in water.

4. Inner packaging: [ ] plastic bag [ ] plastic liner [ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. The liquid waste was usually transported in a dumpster stainless steel tank with a total capacity of 500 gallons. The waste was dumped into the disposal pit, and the dumpster returned to the facility for reuse. Occasionally a 55-gallon drum or a gallon bottle was used. These were disposed of at the pit.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7697-37-2 Nitric Acid	Liquid.	Ions in solution.	T 47960000.000000	GM	1954	1970	N			
7784-27-2 Aluminum Nitrate Nonahydrate	Liquid.	Ions in solution.	T 192400000.00000	GM	1954	1970	N			
7783-34-8 Mercury Nitrate Monohydrate	Liquid.	Ions in solution.	T 810200.00000000	GM	1954	1970	N			
10102064 Uranyl Nitrate	Liquid.	Ions in solution.	T 224100.00000000	GM	1954	1970	N			
7631-99-4 Sodium Nitrate	Liquid.	Ions in solution.	T 2391000.0000000	GM	1954	1970	N			
7664393 Hydrofluoric Acid	Liquid.	Ions in solution.	T 7523000.0000000	GM	1954	1970	N			
7664-93-9 Sulfuric Acid	Liquid.	Ions in solution.	T 108300.00000000	GM	1954	1970	N			
7440-47-3 Chromium	Liquid.	Ions in solution.	T 19.680000000000	GM	1954	1970	N			
7440-41-7 Beryllium	Liquid.	Ions in solution.	T 113.60000000000	GM	1954	1970	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
In 1954, 8280 gallons of waste had no composition listed. It was assumed to have the composition 1.0 M HNO3 and 1.2 M Al(NO3)3 - 9H2O based on the process being developed at that time. In 1955, 22,144 gallons of waste was listed as "chem waste". The same composition, 1.0 M HNO3 and 1.2 M Al(NO3)3-9H2O, was assumed for this waste. In 1956, 13,494 gallons of waste was listed as "STR waste". This was waste from a process being developed for navy fuel and the composition was assumed to be 0.5 M HNO3 and 0.25 M Hf based on the type of fuel and the time period involved. The Cr and Be were probably present as nitrate salts. Since the solutions usually contained HNO3, an oxidizer, it is likely that the Cr could have been in the +6 state. No concentration was given for the Cu(NO3)2, but it was assumed that it was being used as a catalyst and that the concentration was 0.01 M. This value was used to calculate a value for the quantity. More than 90% of the liquid waste was disposed of in the period 1954-1957.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
3251-23-8 Copper Nitrate	Liquid.	Ions in solution.	T 327.90000000000	GM	1954	1970	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
In 1954, 8280 gallons of waste had no composition listed. It was assumed to have the composition 1.0 M HNO3 and 1.2 M Al(NO3)3 - 9H2O based on the process being developed at that time. In 1955, 22,144 gallons of waste was listed as "chem waste". The same composition, 1.0 M HNO3 and 1.2 M Al(NO3)3-9H2O, was assumed for this waste. In 1956, 13,494 gallons of waste was listed as "STR waste". This was waste from a process being developed for navy fuel and the composition was assumed to be 0.5 M HNO3 and 0.25 M Hf based on the type of fuel and the time period involved. The Cr and Be were probably present as nitrate salts. Since the solutions usually contained HNO3, an oxidizer, it is likely that the Cr could have been in the +6 state. No concentration was given for the Cu(NO3)2, but it was assumed that it was being used as a catalyst and that the concentration was 0.01 M. This value was used to calculate a value for the quantity. More than 90% of the liquid waste was disposed of in the period 1954-1957.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[X] expert judgment [ ] reports
[X] other
HP disposal records.

2. Details concerning source (names, report no., dates, etc.)
The HP records consisted of special work permits, notegrams, IHP-36 forms, ID-110 forms and ID-124 forms.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[ ] yes

6. If yes, explain why:
N/A.

7. Major unknowns in inventories of contaminants:
In many cases, no concentrations or compositions were listed on the records.

8. Key assumptions used to deal with the unknowns:
Assumed that the compositions and concentrations not listed on the records were similar to those listed for other wastes in the same time period.

Continuation of Part ________ Column or Question Number or Title General.

This stream included waste disposed of to locations listed as acid pit, chem pit, fluoride pit, acid disposal pit, slit trench, chem waste pit and burial trench 34. Actually, the liquid was probably disposed of at the acid pit and the container in the indicated trench. Some of the disposal location names are probably referring to the same pit, however, it is known that there was more than one pit used during the time period indicated.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 120

1. Preparer: Rhodes, Donald W.

2. Date prepared: 07/28/93

3. Generator: CPP
(area or contractor - use code from attached list)

4. Particular facility: 601
(building number - use code from attached list)

5. Number of waste stream from this facility:
5H

6. Waste stream:
Organic solvents.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[ ] LLW
[X] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1954 Ending year 1970

9. Waste stream volume:
Amount 4763.0000 Units Gallons.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
4. Much of the waste actually came from CF674A, which was a pilot plant located at CFA, but used to develop processes for dissolution and extraction for the ICPP.
8. More than 90% of the waste was produced in the period 1954-1957.

1. General physical form (see attached list)
Liquids.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Waste solutions were released to the disposal pit as a free flowing liquid.

3. Chemical form:
Hydrocarbons with small amounts of other solvents.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
2. The liquid was transported in a dumpster tank (500 gallons) and occasionally in a 55-gallon drum or gallon bottles. The dumpster was returned to the waste generator, but drums or bottles were disposed at the pit.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
108-10-1 Methyl Isobutyl Ketone	Liquid.	Hydrocarbon.	T 8928000.0000000	GM	1954	1970	N			
64175 Ethyl Alcohol	Liquid.	Hydrocarbon.	T 22550.000000000	GM	1954	1970	N			
67-64-1 Acetone	Liquid.	Hydrocarbon.	T 22550.000000000	GM	1954	1970	N			
56-23-5 Carbon Tetrachloride	Liquid.	Hydrocarbon.	T 25550.000000000	GM	1954	1970	N			
126-73-8 Tributyl Phosphate	Liquid.	Hydrocarbon.	T 1002000.0000000	GM	1954	1970	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The volume of the total organic was used, together with an assumed density of 0.85, to calculate the grams of the other organics. The other organic was assumed to be 10% tri-butyl phosphate in hexone (methyl isobutyl ketone). One percent of the balance (hexone) was then equally divided among the alcohol, CCl4, thiocyanate and acetone. No actual values were given for any of these components so the values were arbitrarily calculated based on probable process considerations. Some 5.308E+06 grams of waste oil (non-hazardous chemical) was disposed in the period 1954-1970.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide *	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[X] expert judgment [ ] reports
[X] other
HP disposal records.

2. Details concerning source (names, report no., dates, etc.)
The HP disposal records consisted of Special Work Permits, Notegrams, IHP-36 forms, ID-110 forms, and ID-124 forms.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[ ] yes

6. If yes, explain why:
Not entered in RWMIS.

7. Major unknowns in inventories of contaminants:
In many cases, concentrations and compositions were not recorded in the records.

8. Key assumptions used to deal with the unknowns:
Assumed that the compositions and concentrations not recorded on the records were similar to other waste produced in the same time period. Assumed 10% TBP with Hexone. It could vary from 5-25%. Assumed other solvents, alcohol, etc. were very small compared to the other organics, because they apparently came from laboratory sources, as indicated by the signature of the person who authorized the disposal.

Continuation of Part ________ Column or Question Number or Title General.

This stream included waste disposed to locations listed as acid pit, chem pit, fluoride pit, acid disposal pit, slit trench, chem waste pit, and buried trench. Two instances listed Trench 11 and Trench 34. The liquid was probably disposed to the pit and the container to the trench. In some cases, the organic was listed to be burned. Whether or not this was done is not recorded, but in later years a burner was installed at CPP to burn waste organics and eventually, in even later years, it was mixed with the kerosene that was used to heat the Waste Calcining Facility in the in-bed-combustion process. It is not clear which waste went to which pit. It is known that there was more than one pit, but often waste forms with different pits listed probably mean one single pit.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION   HDT - 122

1. Preparer: Rhodes, Donald W.

2. Date prepared: 08/02/93

3. Generator: CPP
(area or contractor - use code from attached list)

4. Particular facility: 601
(building number - use code from attached list)

5. Number of waste stream from this facility:
6H

6. Waste stream:
Pipe, glass, gloves, cans, vessels, wire, valves, paper, metal, wood, clothing, filters, plastic bottles and rubber.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1983

9. Waste stream volume:
Amount 21710.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. CPP-601 was listed as the source for this waste stream because it is the main process building. However, this waste stream is intended to include all of the miscellaneous type waste, which has not been included in the other waste streams that were reported on previously. For this reason, all of the buildings at CPP contributed waste to this stream. The volume of this waste stream was not obtained by summing up individual records, but rather by subtracting the volume already reported on for previous streams from the total volume given in the RWMIS. Summary sheet provided by Cathy Barnard.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Includes boxes, pipe, glass, gloves, cans, vessels, wire, valves, paper, metal, wood, vermiculite, anti-C clothing, filters, plastic bottles, rubber and various other discarded items.

3. Chemical form:
Cellulose, metal, polymers, silicates, etc.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
1. The physical form was listed as combustibles, primarily because this was a prominent component of the waste, however, many other forms were also present as indicated in #2.
5. The most common type of container for this waste was cardboard boxes; however, metal barrels, wooden boxes and polyethylene sheets were also used.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
None identified.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Particulate and sorbed ions.	Probably oxide, sulfate and nitrate.	T 472.00000000000	CI	1960	1983	N	-50%	+50%	
Y-90	Particulate and sorbed ions.	Probably oxide, sulfate and nitrate.	T 472.00000000000	CI	1960	1983	N	-50%	+50%	
Zr-95	Particulate and sorbed ions.	Probably oxide, sulfate and nitrate.	T 146.00000000000	CI	1960	1983	N	-50%	+50%	
Nb-95	Particulate and sorbed ions.	Probably oxide, sulfate and nitrate.	T 146.00000000000	CI	1960	1983	N	-50%	+50%	
Cs-137	Particulate and sorbed ions.	Probably oxide, sulfate and nitrate.	T 472.00000000000	CI	1960	1983	N	-50%	+50%	
Ce-144	Particulate and sorbed ions.	Probably oxide, sulfate and nitrate.	T 930.00000000000	CI	1960	1983	N	-50%	+50%	
Pr-144	Particulate and sorbed ions.	Probably oxide, sulfate and nitrate.	T 930.00000000000	CI	1960	1983	N	-50%	+50%	
Sb-125	Particulate and sorbed ions.	Probably oxide, sulfate and nitrate.	T 208.00000000000	CI	1960	1983	N	-50%	+50%	
Ru-106	Particulate and sorbed ions.	Probably oxide, sulfate and nitrate.	T 472.00000000000	CI	1960	1983	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
This waste stream is intended to include all of the radionuclides not included in the other waste streams reported on previously. The total curie value was assumed to be 1% of the total Ci for CPP. The radionuclide breakdown was made according to the distribution suggested by CPP personnel as reported in EGG-WM-9857.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Rh-106	Particulate and sorbed ions.	Probably oxide, sulfate and nitrate.	T 472.00000000000	CI	1960	1983	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
This waste stream is intended to include all of the radionuclides not included in the other waste streams reported on previously. The total curie value was assumed to be 1% of the total Ci for CPP. The radionuclide breakdown was made according to the distribution suggested by CPP personnel as reported in EGG-WM-9857.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[X] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
The distribution suggested for CPP, as reported in EGG-WM-9857 for radionuclides, was used.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
The volume and radionuclide content of the waste was not known.

8. Key assumptions used to deal with the unknowns:
Assumed that the waste volume was equal to the total volume for CPP as reported in RWMIS minus the volume already accounted for in waste streams reported previously. Also assumed that the radionuclide quantity was 1% of the total curies for CPP waste. This is a reasonable assumption, because the total curies for the CPP waste streams reported on previously is equal to 101%. Therefore, the curies for the remaining waste must be a low value. No G-M correction is needed to the best estimate. The preparer used 1% of total ICPP activity for the activity of this stream. The largest ICPP stream in activity in CPP-603-1 (70% of the total), the activity of which was estimated by analysis of the dissolver solution and for which the uncertainty is listed. Another major stream (8% of total) is CPP-601-1, which is a similar situation. The bounds used here are the same as those used on the predominant streams.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 230

1. Preparer: Rhodes, Donald W.

2. Date prepared: 11/16/93

3. Generator: CPP
(area or contractor - use code from attached list)

4. Particular facility: 601
(building number - use code from attached list)

5. Number of waste stream from this facility:
7H

6. Waste stream:
Zirconium and zirconium-uranium alloy.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1967 Ending year 1967

9. Waste stream volume:
Amount 11.7500 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
The waste stream was listed as CPP-601 because the metal scrap was intended to be used for a "cold" dissolution and solvent extraction runs in the CPP-601 process building. Some of it was used for that purpose, and the rest was buried at the RWMC.

1. General physical form (see attached list)
Zirconium.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Miscellaneous shapes and sizes ranging from large pieces to long thin strips. The smallest pieces were about 1/64" x 1/16" x 12".

3. Chemical form:
Metallic zirconium with some zirconium-uranium alloy in metallic form.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. BXW and some metal cans were also used. The containers were reported to be in various stages of deterioration at the time of disposal.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7440-67-7 Zirconium	Scrap pieces of various shapes.	Zirconium metal and zirconium-uranium alloy.	T 18000000.000000	GM	1967	1967	N	-20%	+20%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Approximately 90% of the zirconium was reported on one waste shipment record and the other 10% on a second record. The weight on the first record was reported as 30,000-40,000 lbs. The mean value of 35,000 lbs. was used as the weight of this shipment. This together with the weight of 3400 lbs. on the second record and a reported weight of 182kg of U-238 brought the total weight to 1.8E+7 gm. The minimum and maximum values are reported as +/-20%. Although the reported weights for the first shipment only varied from the mean value of 3500 lbs. by 14%, it was assumed that these weights were estimated, so the additional 6% was added to account for possible errors in estimating the weights.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-238	Incorporated into zirconium metal.	Alloyed with zirconium.	T .61000000000000	CI	1967	1967	N	-20%	+20%	No basis for estimating the uncertainty.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Two waste shipment records.

2. Details concerning source (names, report no., dates, etc.)
Two waste shipment records were the source of the values for the Zirconium and Uranium-238.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Only a range was reported on the waste shipment records for the zirconium.

8. Key assumptions used to deal with the unknowns:
The mean value of the range was used as the weight for the Zirconium. No G-M correction is needed to the best estimate. The U-238 was originally estimated by weight. The weight for Zr was +/-20%. The same method and uncertainty are assumed for the U-238.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 1

1. Preparer: Rhodes, Donald W.

2. Date prepared: 06/15/93

3. Generator: CPP
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Fuel end pieces.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1973 Ending year 1982

9. Waste stream volume:
Amount 1.7840 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
6. Fuel elements from the EBR-II reactor were stored in the CPP-603 fuel storage basin for a time period varying from a few months to a few years. Prior to processing the fuel, the end pieces were sawed off and loaded into steel inserts on the floor of the basin. The inserts were then loaded into a cask and transported to the RWMC for burial in a trench.

1. General physical form (see attached list)
Irradiated end boxes.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
The end boxes were approximately 3 inch hexagonal shaped pieces and 3 to 4 ft. in length.

3. Chemical form:
Metal alloy, 304 stainless steel. Chemical Composition was 18-20% chromium metal, 8-12% nickel, 1% silicon, and the balance, iron.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Insert.

6. Other characteristics of interest:
The insert that contained the fuel end boxes was intended to serve only as a container for transporting the metal and was not intended to be a containment barrier.

7. Comments (specify number of pertinent question):
6. The activation radionuclides are an integral part of the metal alloy and would thus be resistant to leaching by water. Corrosion of the stainless steel would have to occur to release the radionuclides.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-58	Metal.	Elemental.	T 86240.000000000	CI	1981	1982	N	43120	129360	See comment below.
Co-60	Metal.	Elemental.	T 1540.0000000000	CI	1981	1982	N	770	2310	
Cr-51	Metal.	Elemental.	T 4620.0000000000	CI	1981	1982	N	2310	6930	
Fe-59	Metal.	Elemental.	T 1540.0000000000	CI	1981	1982	N	770	2310	
Mn-54	Metal.	Elemental.	T 60060.000000000	CI	1981	1982	N	30030	90090	
Ni-63	Metal.	Elemental.	T 190.00000000000	CI	1981	1982	N	-50%	+50%	
Zr-93	Metal.	Elemental.	T .03400000000000	CI	1981	1982	N	-50%	+50%	
Ni-59	Metal.	Elemental.	T 1.3000000000000	CI	1981	1982	N	-50%	+50%	
C-14	Metal.	Elemental.	T .33000000000000	CI	1981	1982	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

It is believed that the radionuclide breakdown may have come from an analysis of dissolver product solution during fuel processing, in which case, the analysis probably would have been within +/-10% accuracy. The major uncertainty was due to the fact that the weight of the boxes was estimated. It is likely that the accuracy for the weights could have been +/-50%. This was the value used to calculate the minimum and maximum values. Also, 23075 Ci of MAP were distributed equally between Co-58 and Mn-54. This is the suggested distribution obtained from NRF personnel and reported in Plansky and Hoiland (1992) for EBR-II fuel. These values were calculated based on the ratio of Co-60 to Ni-63, then the ratio of Ni-63 to these isotopes. The calculated ratios were based on information from the references DOE (1992).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Nb-94	Metal.	Elemental.	T .37000000000000	CI	1981	1982	N	-50%	+50%	
Co-58	Metal.	Elemental.	T 3900.0000000000	CI	1973	1973	N	1950	5850	
Co-60	Metal.	Elemental.	T 198250.00000000	CI	1973	1973	N	99125	297375	
Cr-51	Metal.	Elemental.	T 78975.000000000	CI	1973	1973	N	39488	118463	
Fe-59	Metal.	Elemental.	T 23075.000000000	CI	1973	1973	N	11538	34613	
Mn-54	Metal.	Elemental.	T 20800.000000000	CI	1973	1973	N	10400	31200	
Ni-63	Metal.	Elemental.	T 24415.000000000	CI	1973	1973	N	-50%	+50%	
Zr-93	Metal.	Elemental.	T 4.0000000000000	CI	1973	1973	N	-50%	+50%	
Ni-59	Metal.	Elemental.	T 161.00000000000	CI	1973	1973	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

It is believed that the radionuclide breakdown may have come from an analysis of dissolver product solution during fuel processing, in which case, the analysis probably would have been within +/-10% accuracy. The major uncertainty was due to the fact that the weight of the boxes was estimated. It is likely that the accuracy for the weights could have been +/-50%. This was the value used to calculate the minimum and maximum values. Also, 23075 Ci of MAP were distributed equally between Co-58 and Mn-54. This is the suggested distribution obtained from NRF personnel and reported in Plansky and Hoiland (1992) for EBR-II fuel. These values were calculated based on the ratio of Co-60 to Ni-63, then the ratio of Ni-63 to these isotopes. The calculated ratios were based on information from the references DOE (1992).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
C-14	Metal.	Elemental.	T 43.000000000000	CI	1973	1973	N	-50%	+50%	
Nb-94	Metal.	Elemental.	T 47.000000000000	CI	1973	1973	N	-50%	+50%	
Tc-99	Metal.	Elemental.	T .03000000000000	CI	1973	1973	N	-50%	+50%	
Tc-99	Metal.	Elemental.	T .00027000000000	CI	1981	1982	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
It is believed that the radionuclide breakdown may have come from an analysis of dissolver product solution during fuel processing, in which case, the analysis probably would have been within +/-10% accuracy. The major uncertainty was due to the fact that the weight of the boxes was estimated. It is likely that the accuracy for the weights could have been +/-50%. This was the value used to calculate the minimum and maximum values. Also, 23075 Ci of MAP were distributed equally between Co-58 and Mn-54. This is the suggested distribution obtained from NRF personnel and reported in Plansky and Hoiland (1992) for EBR-II fuel. These values were calculated based on the ratio of Co-60 to Ni-63, then the ratio of Ni-63 to these isotopes. The calculated ratios were based on information from the references DOE (1992).

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[X] other
Shipping records.

2. Details concerning source (names, report no., dates, etc.)
1. RWMIS and associated shipping records.
2. Interview with L.W. Madsen, who participated in the cutting and shipping of the fuel end pieces.
3. EGG-WM-9857, June 1992 - "Analysis of the Low-Level Waste Radionuclide Inventory for the RWMC Complex Performance Assessment". Some of the values were obtained from isotopic ratios calculated by P.R. Leonard using information from DOE (1992).
4. DOE (1992), "Characteristics of Potential Repository Wastes", DOE/RW-0184-R1, July 1992.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
The weight of the end boxes was estimated. Some 23,000 Ci of radionuclides was reported as MAP. It is not known for sure if the radionuclide breakdown was from an actual sample. If it was, there apparently was only one sample taken for each of the two campaigns. The inaccuracy in the weights was the major source of error.

8. Key assumptions used to deal with the unknowns:
1. The weight of the shipments of fuel end pieces was considered to vary from the reported value by +/-50% based on a conversation with the operator.
2. The MAP was converted to specific radionuclides according to the suggested distribution given in the above referenced document. The MAP was only approximately 5% of the total Ci. Assumed that the other uncertainties were negligible.

Continuation of Part D Column or Question Number or Title Radionuclide.

The total curies from this waste stream constitute approximately 70% of the total curies shipped from CPP to the RWMC. During dissolution of the fuel, a sample would have to be taken to determine the U-235 content. It seems logical that they may have analyzed for activation products on this same sample; however, this could not be confirmed. This waste was disposed to Trench 57 (1973) and Soil Vault Rows 12 (1982) and 10 (1981).

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 2

1. Preparer: Rhodes, Donald W.

2. Date prepared: 06/08/93

3. Generator: CPP
(area or contractor - use code from attached list)

4. Particular facility: 603*
(building number - use code from attached list)

5. Number of waste stream from this facility:
2H

6. Waste stream:
Lead.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1978

9. Waste stream volume:
Amount 2.3870 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
Facilities include 601 and 603. Disposal was intermittent over the time period indicated.

1. General physical form (see attached list)
Lead.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Nearly half of the total waste consisted of contaminated lead bricks. There were several lead sheets, a shielding door, a lead pig and some miscellaneous lead.

3. Chemical form:
Metallic lead.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel.

6. Other characteristics of interest:
These shipments were considered to be radioactive only because the lead surfaces had become contaminated with radionuclides while being used for shielding.

7. Comments (specify number of pertinent question):
2. The waste was considered to be stable (resistant to leaching) due to the physical (metallic) form of the waste. The container was not considered to be a barrier, but rather a means of transporting the waste.
5. Waste container type includes BLM, BXW, and BXC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7439-92-1 Lead	Bricks.	Elemental metal.	T 24000.000000000	LB	1978	1978	N	21600	26400	See comment (a) below.
7439-92-1 Lead	Sheets, door, pig and miscellaneous.	Elemental metal.	T 34150.000000000	LB	1960	1977	N	25562	42688	See comment (b) below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
a. The lead bricks were uniform in size and weight, so it was assumed that the total number of bricks multiplied by the known weight would be within +/-10%.
b. The lead sheets and other forms were more difficult to assign a weight, but it was assumed that the assigned weight would be within +/-25%.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Surface contamination.	Nitrate and oxide.	T 3.8000000000000	CI	1960	1978	N	1.9	5.7	See comment below.
Sr-90	Surface contamination.	Nitrate and oxide.	T 3.8000000000000	CI	1960	1978	N	1.9	5.7	See comment below.
Ce-144	Surface contamination.	Nitrate and oxide.	T 6.3000000000000	CI	1960	1978	N	3.2	9.5	See comment below.
Ru-106	Surface contamination.	Nitrate and oxide.	T 3.2000000000000	CI	1960	1978	N	1.6	4.8	See comment below.
Sb-125	Surface contamination.	Nitrate and oxide.	T 1.5000000000000	CI	1960	1978	N	.8	2.3	See comment below.
Zr-95	Surface contamination.	Nitrate and oxide.	T 2.1000000000000	CI	1960	1978	N	1.1	3.2	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Only one shipment (1971), out of 26 listed the radionuclides. It was assumed that the other shipments had a similar radionuclide distribution, and that the values were accurate within +/-50%. An UN-ID-B&G value of 1.3 curies was distributed evenly between Cs-137 and Sr-90. Other than Cs-137 and Sr-90, the Sb-125 has a half-life of 2.76 years, and the other radionuclides listed have a half-life of 1 year or less.

1. Type of source of information:
(check box)

[X] RWMIS [X] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Associated shipping records.

2. Details concerning source (names, report no., dates, etc.)
The "qualifier flag" database (a database that lists waste descriptions that are on the shipping records but not listed on RWMIS) was used to identify shipments that did not list lead on the RWMIS database, but did list lead on the shipping records. This information was then verified by examining a copy of the actual shipping record.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
The volume on the shipping record was usually the total volume of the shipment. The volume of lead was calculated from the shipping weight and lead density values.

8. Key assumptions used to deal with the unknowns:
1. Where there was more than one item in the shipment, assumed that lead was the major contributor to the weight.
2. Assumed that the weights were reasonably accurate and could be used with the density value to calculate the volume.
3. Assumed that the one reported radionuclide distribution was applicable to the other shipments.

Continuation of Part ________ Column or Question Number or Title General.

These wastes were disposed to Pits 4, 10, 15 and Trenches 16, 26, 43, 45, 52 and 55.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 3

1. Preparer: Rhodes, Donald W.

2. Date prepared: 06/15/93

3. Generator: CPP
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
3H

6. Waste stream:
Fuel storage pools and sludge.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1977 Ending year 1980

9. Waste stream volume:
Amount 48.1500 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
4. The fuel storage basin consisted of three pools for fuel storage. They were all interconnected by a transfer canal. The fuel was stored under approximately 20 feet of water. The building itself was not airtight and the large rollup doors were open frequently so that wind blown dust could easily be deposited in the pools. Originally, there was a lot of carbon steel in and over the basin. This corroded and became part of the sludge.

1. General physical form (see attached list)
Sludge.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
A slurry of finely divided solids solidified with the urea-formaldehyde process.

3. Chemical form:
Principally: SiO2 (20%), Al (10%), Fe (5%), and Mg (3%) present as oxides, carbonates, sulfates, oxalates, silicates and hydroxides.

4. Inner packaging: [ ] plastic bag [ ] plastic liner [X] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Concrete cask.

6. Other characteristics of interest:
Sludge was dewatered, then solidified using a urea-formaldehyde process.

7. Comments (specify number of pertinent question):
2. The waste stream was produced as follows: sludge, consisting of corrosion products and wind-blown silt had accumulated on the walls and floor of the pools over 20+ years. This sludge sorbed radionuclides that had leaked from stored fuel elements. The sludge was vacuumed into a 25,000 gallon underground tank. The contents of the tank were sparged, then sampled and analyzed. The sludge was then transferred into concrete casks, with a steel liner, and solidified with urea-formaldehyde. A concrete plug was then poured into the top opening, and the casks were transferred to the RWMC for burial.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Nb-95	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 72.000000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Pr-144	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 4324.0000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Pu-238	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T .80900000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Pu-239	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T .37700000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Pu-240	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T .01000000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Pu-241	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 1.5030000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Pu-242	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T .10000000000000	CI	1977	1980	N	-20%	+20%	Quantity is listed as <.1 curies. See below.
Rh-106	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 86.000000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Ce-141	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 31.000000000000	CI	1977	1980	N	-20%	+20%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

In actual practice, the sludge was sampled either from the 25,000 gallon holding tank or possibly from the sludge cask itself on occasion, but the only results available are the values shown in RWMIS, which came directly from the shipping records. Some 10 different analyses for the 42 sludge casks are given in RWMIS ranging from <1 Ci to 1450 Ci per cask. A given radionuclide breakdown and curie content was repeated for anywhere from 1 cask to 17 casks. Based on professional judgment, as a technical advisor on the project, it is assumed that the analyses were correct within +/-20% because the sludge was thoroughly mixed; however, no actual sample results are available.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ce-144	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 4324.0000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Co-60	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 74.000000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Cs-134	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 429.00000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Cs-137	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 11503.000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Eu-152	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 236.00000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Eu-154	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 232.00000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Eu-155	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 79.000000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Zr-95	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 47.000000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Ru-106	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 86.000000000000	CI	1977	1980	N	-20%	+20%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
In actual practice, the sludge was sampled either from the 25,000 gallon holding tank or possibly from the sludge cask itself on occasion, but the only results available are the values shown in RWMIS, which came directly from the shipping records. Some 10 different analyses for the 42 sludge casks are given in RWMIS ranging from <1 Ci to 1450 Ci per cask. A given radionuclide breakdown and curie content was repeated for anywhere from 1 cask to 17 casks. Based on professional judgment, as a technical advisor on the project, it is assumed that the analyses were correct within +/-20% because the sludge was thoroughly mixed; however, no actual sample results are available.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sb-125	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 11.000000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Sr-90	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 1490.0000000000	CI	1977	1980	N	-20%	+20%	See comment below.
U-234	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T .13300000000000	CI	1977	1980	N	-20%	+20%	See comment below.
U-235	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T .00600000000000	CI	1977	1980	N	-20%	+20%	See comment below.
U-236	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T .00400000000000	CI	1977	1980	N	-20%	+20%	See comment below.
U-238	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T .00100000000000	CI	1977	1980	N	-20%	+20%	See comment below.
Y-90	Sorbed on finely divided sludge particles.	Oxides, silicates, carbonates, and hydroxides.	T 1490.0000000000	CI	1977	1980	N	-20%	+20%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
In actual practice, the sludge was sampled either from the 25,000 gallon holding tank or possibly from the sludge cask itself on occasion, but the only results available are the values shown in RWMIS, which came directly from the shipping records. Some 10 different analyses for the 42 sludge casks are given in RWMIS ranging from <1 Ci to 1450 Ci per cask. A given radionuclide breakdown and curie content was repeated for anywhere from 1 cask to 17 casks. Based on professional judgment, as a technical advisor on the project, it is assumed that the analyses were correct within +/-20% because the sludge was thoroughly mixed; however, no actual sample results are available.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[X] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
RWMIS run 09/24/92 - this was the source for the radionuclide breakdown values. Report: ICP-1195, "Removal and Disposal of Radioactive Sludge from the Fuel Storage Basin at the ICPP", June 1979. Report: EGG-WM-9857, "Analysis of Low-Level Waste Radionuclide Inventory for the RWMC Performance Assessment".

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
There were no chemical hazards. The number of curies in a cask were highly variable. The low values were for startup when the process was being tested. One hundred six curies of MFP were distributed among the various radionuclides as described in (8).

8. Key assumptions used to deal with the unknowns:
The total curies for each radionuclide were summed for the 42 casks and reported here as totals. Distribution of the MFP among the various radionuclides was made according to the distribution provided by CPP personnel as reported in EGG-WM-9857.

Continuation of Part ________ Column or Question Number or Title General.

The 42 sludge casks were all buried in Pit 16. Sketch of sludge cask attached. The solidified sludge is surrounded on all sides by an 18 inch thick concrete barrier, so the contained radionuclides would be essentially non-mobile until the concrete disintegrated. Well over 50% (2.771 E+00 Ci) of the total plutonium shipped from the ICPP to the RWMC was contained in these sludge casks.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 61

1. Preparer: Rhodes, Donald W.

2. Date prepared: 06/23/93

3. Generator: CPP
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
4H

6. Waste stream:
Decontamination chemicals.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1978

9. Waste stream volume:
Amount 18.0000 Units Gallons.
Check box: [X] annual or [ ] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
The decon chemical was used to saturate a rag and then the rag was used to wipe down the outside of the cask. The rag was then discarded to a waste box (cardboard), containing other miscellaneous items, and eventually shipped to the RWMC. Methachlor and Oakite Swift decontamination chemicals were used to decontaminate fuel shipping casks.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[ ] other (specify)

2. Details on physical form(particularly confinement related)

3. Chemical form:
Methyl chloroform.

4. Inner packaging: [X] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box.

6. Other characteristics of interest:
The rags containing the methachlor often remained in the open cardboard box for several days, so some of the chemical would vaporize.

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
71-55-6 1,1,1-Trichloroethane	Liquid absorbed on a cloth rag.	Unknown.	A 200.00000000000	LB	1960	1978	N	200	400	No records. See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The amount used is based on an interview with L.W. Madsen, who was an operator at the 603 fuel storage basin at the time this chemical was used. After 1978, a non-hazardous chemical was substituted for the methyl chloroform. It is believed that the operators estimate should be considered as the minimum value, but that the maximum amount used could have been 100% greater. This is a conservative, but reasonable, approach.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Absorbed in a cloth rag.	Nitrate salt.	T 1.0000000000000	CI	1960	1978	N	-50%	+50%	
Sr-90	Absorbed in a cloth rag.	Nitrate salt.	T 1.0000000000000	CI	1960	1978	N	-50%	+50%	
Y-90	Absorbed in a cloth rag.	Nitrate salt.	T 1.0000000000000	CI	1960	1978	N	-50%	+50%	
Ce-144	Absorbed in a cloth rag.	Nitrate salt.	T 1.0000000000000	CI	1960	1978	N	-50%	+50%	
Pr-144	Absorbed in a cloth rag.	Nitrate salt.	T 1.0000000000000	CI	1960	1978	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
There was never a measurement of the radionuclides on the wipe down rags, but there was always a small amount of contamination. The isotopes listed are those that were predominant in the basin water. A value of one curie per isotope was listed just to show that some contaminants were present.

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[X] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report.no., dates, etc.)
L.W. Madsen was the operator interviewed. He was considered to be the most knowledgeable person available to provide information for this waste stream.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:
No RWMIS data available for this waste stream.

7. Major unknowns in inventories of contaminants:
No records available.

8. Key assumptions used to deal with the unknowns:
Assumed that the operators estimate of the amount used would be a minimum and that the maximum would be 100% greater. No G-M correction is needed to the best estimate. The activity and bounds were estimated strictly by the judgment of the waste expert.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 63

1. Preparer: Rhodes, Donald W.

2. Date prepared: 06/27/93

3. Generator: CPP
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
5H

6. Waste stream:
Zeolite.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1964 Ending year 1973

9. Waste stream volume:
Amount 25.3600 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
6. When the ion exchange material was loaded with radionuclides, the drum containing the ion exchanger was removed, capped, and disposed of at the RWMC. The inorganic ion exchange material, clinoptilolite, was placed in 55-gallon drums, and water from the fuel storage basin was passed through the ion exchanger to remove the radionuclides.

1. General physical form (see attached list)
Resin.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
The ion exchange material was in particulate form, mostly in the size range 0.25 to 2.0 mm diameter.

3. Chemical form:
The zeolite is essentially an aluminosilicate mineral.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
1. The waste material functioned like an organic ion exchange resin, but it was actually a natural occurring mineral, zeolite.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Ions sorbed on ion exchange solids.	Indiv. ions in water & on ion exchanger. See below	T 500.00000000000	CI	1964	1973	N	500	750	See comment below.
Sr-90	Ions sorbed on ion exchange solids.	Indiv. ions in water & on ion exchanger. See below	T 500.00000000000	CI	1964	1973	N	500	750	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Chemical form: The radionuclides were present as individual ions in the water and on the ion exchanger. The associated anion in the water was nitrate. The curies were calculated from the measured concentration of total radionuclides in the basin water at the mid-point of each year, and the known flow rate of the water through the ion exchange columns. The calculated amount was considered to be the minimum and the maximum was estimated to be 50% higher. This is believed to be a conservative estimate. In addition, the total activity was considered to be all Cs-137 and Sr-90. This was true for the early years, but some shorter lived radionuclides (half-life is less than 5 years) were also present in the water after an EBR-II can, that was stored in the basin, ruptured in 1969. This would make the above numbers additionally conservative.

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[X] expert judgment [X] reports
[X] other
Individual shipping records.

2. Details concerning source (names, report no., dates, etc.)
Reports used were: ENICO-1082, IDO-14657, IN-1201, and Drawing CPP-B-6216. Persons interviewed were V. H. Barnes and L.W. Madsen, both of whom were involved in the operation of the system.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
The shipments could not be identified clearly in RWMIS, because the individual making out the shipping records used 10 different names to identify the ion exchange material.

7. Major unknowns in inventories of contaminants:
Number of drums of material shipped was uncertain and a breakdown of radionuclides was not given on the shipping records or in reports.

8. Key assumptions used to deal with the unknowns:
Obtained information that was available from individual shipping records and supplemented this with calculations based on the concentrations of radionuclides in the water at mid-year and the flow rates through the columns. This information was obtained from reports and was used to calculate curies. Assumed that all of the curies were due to Cs-137 and Sr-90; this may not have been true after 1969, but is a conservative approach.

Continuation of Part B Column or Question Number or Title 2.

The Cs-137 and Sr-90 were held very tightly by the clinoptilolite ion exchange material as evidenced by the fact that several attempts to regenerate the columns with concentrated solutions of salts, such as ammonium nitrate, were not successful i.e., the radionuclides were not replaced by the salt. For this reason, the Cs-137 and Sr-90 would be essentially non-mobile in the RWMC and would not be transported by water passing through the waste material.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION   HDT - 64

1. Preparer: Rhodes, Donald W.

2. Date prepared: 07/07/93

3. Generator: CPP
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
6H

6. Waste stream:
Contaminated roof materials and top soil.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1959 Ending year 1959

9. Waste stream volume:
Amount 181.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
9. Individual records show 60 truckloads of dirt were hauled from CPP to the RWMC in 1959. No volumes were given, but records in later years for similar loads show that a truck would normally haul 5 tons or 10,000 lbs. Accordingly, the volume was calculated using the total weight (600,000 lbs.) and a density of 1.5. The volume of the roof materials would have been small compared to the volume of dirt.

1. General physical form (see attached list)
Soil.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
The dirt was typical sand, silt and gravel surface soil.
The roof material was sheets of transite.

3. Chemical form:
The soil was essentially aluminosilicates.
The roof material was solid sheets of transite (asbestos in a resin-type matrix).

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:
The dirt was normally loaded into a dump truck without any container.

7. Comments (specify number of pertinent question):
In October, 1958, a HEPA filter on the Fuel Element Cutting Facility (FECF) was breached allowing particulate from the fuel chopping process to vent to the air. The roof of CPP-603 building and the ground surface in the surrounding area were contaminated with radioactive particulate matter. An estimate of the number of curies released was made from a radiation survey of the roof and soil surfaces. In 1959, pieces of the roof were removed as well as about 60 truckloads of contaminated soil, and were disposed at the RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Particulate.	Al-U alloy.	T 120.00000000000	CI	1959	1959	N	-50%	+100%	See comment below.
Y-90	Particulate.	Al-U alloy.	T 120.00000000000	CI	1959	1959	N	-50%	+100%	See comment below.
Zr-95	Particulate.	Al-U alloy.	T 37.200000000000	CI	1959	1959	N	-50%	+100%	See comment below.
Nb-95	Particulate.	Al-U alloy.	T 37.200000000000	CI	1959	1959	N	-50%	+100%	See comment below.
Cs-137	Particulate.	Al-U alloy.	T 120.00000000000	CI	1959	1959	N	-50%	+100%	See comment below.
Ce-144	Particulate.	Al-U alloy.	T 236.40000000000	CI	1959	1959	N	-50%	+100%	See comment below.
Pr-144	Particulate.	Al-U alloy.	T 236.40000000000	CI	1959	1959	N	-50%	+100%	See comment below.
Sb-125	Particulate.	Al-U alloy.	T 52.800000000000	CI	1959	1959	N	-50%	+100%	See comment below.
Ru-106	Particulate.	Al-U alloy.	T 120.00000000000	CI	1959	1959	N	-50%	+100%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

No radionuclide values were given. An estimate of 1200 curies released in the incident was the only value available. The value of 1200 curies of MFP was broken down into individual radionuclides using the distribution suggested by CPP personnel and reported in EGG-WM-9857, June 1992. The uncertainty value of -50% was used to indicate that there was at least a possibility that the values were overestimated. The value of +100% was used because there was a large area contaminated, and areas could have been missed that contained radioactive particulate.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Rh-106	Particulate.	Al-U alloy.	T 120.00000000000	CI	1959	1959	N	-50%	+100%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

No radionuclide values were given. An estimate of 1200 curies released in the incident was the only value available. The value of 1200 curies of MFP was broken down into individual radionuclides using the distribution suggested by CPP personnel and reported in EGG-WM-9857, June 1992. The uncertainty value of -50% was used to indicate that there was at least a possibility that the values were overestimated. The value of +100% was used because there was a large area contaminated, and areas could have been missed that contained radioactive particulate.

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[X] operating records [ ] interview
[X] expert judgment [ ] reports
[X] other
Letter BLR-6-59A.

2. Details concerning source (names, report no., dates, etc.)
The operating (shipment) records show only the number of truckloads sent to the RWMC. The letter gives an estimated distribution for the radionuclides on the roof and on the ground. Other letters pertaining to the incident are, LY-16-59A, HA-210-58A and a communication from J.R. Horan to J.W. McCaslin, Dec. 24, 1958.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[ ] yes

6. If yes, explain why:
This information has not been included in RWMIS because of the early date.

7. Major unknowns in inventories of contaminants:
The "total curies" was obtained by taking radiation readings within the contaminated areas. No radionuclide identification was made.

8. Key assumptions used to deal with the unknowns:
Assumed a variance of -50% to +100% to be conservative. Made radionuclide breakdown according to information in EGG-WM-9857. Assumed that volume of roof material was negligible compared to the total volume. Assumed that a truck load of dirt weighed 10,000 lbs.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 62

1. Preparer: Rhodes, Donald W.

2. Date prepared: 07/02/93

3. Generator: CPP
(area or contractor - use code from attached list)

4. Particular facility: 604*
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Surface soil.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1974 Ending year 1981

9. Waste stream volume:
Amount 1428.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
4. The building number is the building from which the contamination originated. Some 58% of the shipments were from 604, another 16% were from 603.
4. (*)This includes waste from buildings 601, 603, 627, 628, 630, and 633.

1. General physical form (see attached list)
Soil.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
A mixture of sand, silt, gravel and clay that made up the surface soil at the ICPP.

3. Chemical form:
The soil is primarily aluminosilicate. The radionuclides are probably nitrates, oxides, or carbonates.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Wooden box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. BXC and "Other".
5. Some shipments were made using cardboard boxes, some used wood boxes, and some used dempster dumpsters. In all cases, the container was lined with plastic, which was lapped over at the top and sealed with duct tape.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ce-144	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T 441.40000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Co-60	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T 20.200000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Cs-134	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T 58.300000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Cs-137	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T 1204.7000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Eu-152	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T .10000000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Eu-154	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T 55.100000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Eu-155	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T 32.000000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Mn-54	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T 8.0000000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Pr-144	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T 441.40000000000	CI	1974	1981	N	-50%	+50%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty: Radionuclides came from several sources, at different times, and were probably analyzed by different techniques. The major source of the radionuclides in this waste stream was a leak in a waste line that carried first cycle extraction waste from the processing plant to the waste tanks. This incident was extensively documented, and about 3000 curies of radionuclides (65% of the total) came from this one source. The other sources that produced this waste stream are not so well documented, hence, the +/- variance. About 58 curies of MFP were distributed among the listed radionuclides according to the distribution given in EGG-WM-9857. Where a curie value was given (combined) for a parent/daughter pair, the curies were divided equally between the two radionuclides. Where the parent/daughter curies were different, the value of the lower one was increased to equal the higher one, because they would be in equilibrium.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-238	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T .20000000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Pu-239	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T .10000000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Ru-106	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T 126.00000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Rh-106	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T 126.00000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Sb-125	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T .70000000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Sr-90	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T 1412.0000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Y-90	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T 1412.0000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Zr-95	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T 1.8000000000000	CI	1974	1981	N	-50%	+50%	See comment below.
Nb-95	Sorbed on very fine particles of soil.	Nitrates, oxides, or carbonates.	T 1.8000000000000	CI	1974	1981	N	-50%	+50%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty: Radionuclides came from several sources, at different times, and were probably analyzed by different techniques. The major source of the radionuclides in this waste stream was a leak in a waste line that carried first cycle extraction waste from the processing plant to the waste tanks. This incident was extensively documented, and about 3000 curies of radionuclides (65% of the total) came from this one source. The other sources that produced this waste stream are not so well documented, hence, the +/- variance. About 58 curies of MFP were distributed among the listed radionuclides according to the distribution given in EGG-WM-9857. Where a curie value was given (combined) for a parent/daughter pair, the curies were divided equally between the two radionuclides. Where the parent/daughter curies were different, the value of the lower one was increased to equal the higher one, because they would be in equilibrium.

1. Type of source of information:
(check box)

[X] RWMIS [X] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[X] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
The "other data base" used was the Qualifier Flag database. The report is titled "ICPP Tank Farm Contaminated Soil Incident", Oct. 1, 1974. It does not have a number, but was attached to a letter FHA-118-75 from F.H. Anderson to R. Glenn Bradley. The report EGG-WM-9857 was used to distribute the MFP among the listed radionuclides.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Some of the incidents that produced the contaminated soil are not well documented.

8. Key assumptions used to deal with the unknowns:
Assumed that essentially all of the contaminated soil was transported to the RWMC, or that the fraction transported was known. Assumed that radionuclide content of the soil could be reasonably estimated by measuring the amount of liquid spilled and knowing the composition of the liquid, which was often the method used to obtain the composition.

Continuation of Part ________ Column or Question Number or Title ________

Nearly 300 loads of about 5 tons each made up this waste stream. These different sources that made up the nearly 300 loads all occurred within about a 7 year period, so it was believed that they could be consolidated into one stream, without producing any significant problems with the half-life calculations. An earlier pre-1960 soil contamination incident will be reported separately.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 65

1. Preparer: Rhodes, Donald W.

2. Date prepared: 06/22/93

3. Generator: CPP
(area or contractor - use code from attached list)

4. Particular facility: 633
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
HEPA Filters.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1975 Ending year 1983

9. Waste stream volume:
Amount 176.1000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
6. The off-gas from the WCF fluidized bed calciner was passed through scrubbers, cyclones, etc. to remove particulate matter, and the final clean-up unit was a bank of HEPA filters. When the pressure drop exceeded a certain value, the filters were replaced with new filters, and the contaminated filters were disposed of to the RWMC.

1. General physical form (see attached list)
HEPA filters.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
The filters were placed in stainless steel (1/4" plate) boxes with lids for disposal.

3. Chemical form:
Glass fibers.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Metal box.

6. Other characteristics of interest:
The bulk of the waste solids were made up of aluminum oxide and calcium fluorozirconate particles (0.006 to 0.26 micron diameter).

7. Comments (specify number of pertinent question):
The stainless steel boxes were placed in a shielding cask (WCF cask) for transport to the RWMC. The filters were disposed to the pits and trenches until 1978. From 1978 to 1983 they were disposed to the soil vaults.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ce-144	Very finely divided solids.	Oxide - fluorozirconates.	T 4017.0000000000	CI	1975	1983	N	-20%	+20%	See comment below.
Cs-137	Very finely divided solids.	Oxide - fluorozirconates.	T 19661.000000000	CI	1975	1983	N	-20%	+20%	See comment below.
Nb-95	Very finely divided solids.	Oxide - fluorozirconates.	T 613.00000000000	CI	1975	1983	N	-20%	+20%	See comment below.
Pr-144	Very finely divided solids.	Oxide - fluorozirconates.	T 4017.0000000000	CI	1975	1983	N	-20%	+20%	See comment below.
Rh-106	Very finely divided solids.	Oxide - fluorozirconates.	T 1962.0000000000	CI	1975	1983	N	-20%	+20%	See comment below.
Ru-106	Very finely divided solids.	Oxide - fluorozirconates.	T 1962.0000000000	CI	1975	1983	N	-20%	+20%	See comment below.
Sb-125	Very finely divided solids.	Oxide - fluorozirconates.	T 880.00000000000	CI	1975	1983	N	-20%	+20%	See comment below.
Sr-90	Very finely divided solids.	Oxide - fluorozirconates.	T 1924.0000000000	CI	1975	1983	N	-20%	+20%	See comment below.
Y-90	Very finely divided solids.	Oxide - fluorozirconates.	T 1924.0000000000	CI	1975	1983	N	-20%	+20%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

A representative sample was obtained by pulling a small side stream of the off-gas through a millipore HA filter. This filter was then analyzed in the laboratory. The 20% variance is based on the premise that the laboratory determinations were accurate within +/-10%, but that handling the samples (filters) and possible downtime for equipment repair would add another +/-10%. No sample results were available.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Zr-95	Very finely divided solids.	Oxide - fluorozirconates.	T 613.00000000000	CI	1975	1983	N	-20%	+20%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
A representative sample was obtained by pulling a small side stream of the off-gas through a millipore HA filter. This filter was then analyzed in the laboratory. The 20% variance is based on the premise that the laboratory determinations were accurate within +/-10%, but that handling the samples (filters) and possible downtime for equipment repair would add another +/-10%. No sample results were available.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[X] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
RWMIS values for pit and trench disposal and soil vault disposal were combined to give the values reported. Additional information was obtained from the report IDO-14607, "Removal of Particulates from WCF Off-Gas", June, 1965. Also, Barry O'Brian at the ICPP was contacted for information.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
No actual sample results were found.

8. Key assumptions used to deal with the unknowns:
Based on a knowledge of the process, the sampling techniques used, and good measurements of the off-gas flow rate, the accuracy of the results reported in Part D were considered to be reasonably good.

Decontamination and Decommissioning

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 6

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/06/93

3. Generator: D+D
(area or contractor - use code from attached list)

4. Particular facility: ARV
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Wood and scrap metal.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1980 Ending year 1980

9. Waste stream volume:
Amount 1.8200 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. ARV (Army Re-Entry Vehicle Facility Site).
6. Not actual D+D of ARVFS bunker, but it is junk above and around bunker including an old table, scrap metal from a tank used only as a radiation shield, and combustibles.

PART B - WASTE STREAM CHARACTERISTICS D+D-ARV-1H HDT - 6

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)
Scrap metal and combustibles.

3. Chemical form:
Wood, plastic, and cast iron.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Wooden box.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
None.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Surface contamination - contaminated dirt.	Unknown.	T .00050000000000	CI	1980	1980	N			
Sr-90	Surface contamination - contaminated dirt.	Unknown.	T .00050000000000	CI	1980	1980	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60; MFP equals Sr-90; best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Interviews with Dick Messervey and Fred Stoll.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
None.

8. Key assumptions used to deal with the unknowns:
MAP/MFP best estimate. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 29

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/01/93

3. Generator: D+D
(area or contractor - use code from attached list)

4. Particular facility: BOR
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Soil.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1980 Ending year 1981

9. Waste stream volume:
Amount 15.4000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
4. BOR - Borax V.
6. Based on interview, contaminated soil was removed from the Borax facility between the reactor building and the turbine building. Contamination reported as minimal. No other waste included in this shipment(s).

1. General physical form (see attached list)
Soil.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Soil and contaminated dirt.

3. Chemical form:
Soil.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Wooden box.

6. Other characteristics of interest:
Soil in wooden boxes.

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
None reported or suspected.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Soil/surface contamination.	Unknown.	T .00060000000000	CI	1980	1981	N			
Sr-90	Soil/surface contamination.	Unknown.	T .00255000000000	CI	1980	1981	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60, MFP equals Sr-90, based on process knowledge best estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Interview with Dick Messervey, no reports available.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
None.

8. Key assumptions used to deal with the unknowns:
MAP/MFP determination. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 28

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/01/93

3. Generator: D+D
(area or contractor - use code from attached list)

4. Particular facility: IET
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Heat exchangers, pump cases, pump diffuser and impeller.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1979 Ending year 1979

9. Waste stream volume:
Amount 67.9500 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
4. IET - Initial Engine Test Facility
6. Sodium was removed as a processing operation in a liquid solution and disposed of at the TAN acid pit.

1. General physical form (see attached list)
Other scrap metals.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Pump casing, heat exchanger, and diffusers.

3. Chemical form:
Metal alloys.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:
"Other" equals bulk vessels - metal.

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7440-23-5 Sodium	Unknown.	Unknown.	Unknown.	GM	1979	1979				

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Nearly all of the sodium was removed, but ten's of grams are believed to remain in the components that went to the RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Metal/surface contamination.	Unknown.	T 3.3200000000000	CI	1979	1979	N			
Cs-137	Metal/surface contamination.	Unknown.	T .66000000000000	CI	1979	1979	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
TREE-1368, "Sodium Removal from Hallam Reactor Components".
Interview with Dick Messervey.
Discussions with H.K. Peterson.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
None.

8. Key assumptions used to deal with the unknowns:
All but negligible quantity of Na removed from materials prior to shipment at RWMC.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 69

1. Preparer: Jorgensen, Doug

2. Date prepared: 06/30/93

3. Generator: D+D
(area or contractor - use code from attached list)

4. Particular facility: LOF
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Cloth, paper compactibles, and LOF-0185.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1983 Ending year 1983

9. Waste stream volume:
Amount 0.7929 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. This waste is from the D+D of LOF-620.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Solid waste generated from cleanup of facility.

3. Chemical form:
Solid.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Bale.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
Twenty each 1.4 cu ft. BLXs.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-58	Solid.	N/A.	T .00150000000000	CI	1983	1983	N			
Co-60	Solid.	N/A.	T .00600000000000	CI	1983	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals 1/2 Co-58 and 1/2 Co-60, based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
None.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
No physical form description - MAP breakdown.

8. Key assumptions used to deal with the unknowns:
No hazardous material present, form is solid. MAP determination.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 70

1. Preparer: Jorgensen, Doug

2. Date prepared: 06/30/93

3. Generator: D+D
(area or contractor - use code from attached list)

4. Particular facility: LOF
(building number - use code from attached list)

5. Number of waste stream from this facility:
2H

6. Waste stream:
Paper, poly, and rags D-151.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1982 Ending year 1982

9. Waste stream volume:
Amount 8.0430 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. This waste is from the D+D of LOF-629.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
44.

2. Details on physical form(particularly confinement related)
Solid waste generated from cleanup of the facility.

3. Chemical form:
Solid.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
BLX*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. BXW. Twenty each 1.4 cu ft. BLXs, and 2 each 128 cu ft. BXWs.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-58	Solid.	N/A.	A .03150000000000	CI	1982	1982	N			
Co-60	Solid.	N/A.	A .10000000000000	CI	1982	1982	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
No information available indicating nature and extent of hazardous chemical waste inventories.

8. Key assumptions used to deal with the unknowns:
RWMIS is accurate.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 71

1. Preparer: Jorgensen, Doug

2. Date prepared: 06/30/93

3. Generator: D+D
(area or contractor - use code from attached list)

4. Particular facility: LOF
(building number - use code from attached list)

5. Number of waste stream from this facility:
3H

6. Waste stream:
Paper, cloth, compactible LOF-02.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1981 Ending year 1983

9. Waste stream volume:
Amount 4.3600 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. This waste is from the D+D of LOF-630.

PART B - WASTE STREAM CHARACTERISTICS D+D-LOF-3H HDT - 71

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[ ] other (specify)

2. Details on physical form (particularly confinement related)
Solid waste generated from cleanup of facility.

3. Chemical form:
Solid.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Bale.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-58	Solid.	Unknown.	T .01004000000000	CI	1981	1981	N			
Co-60	Solid.	Unknown.	T .01004000000000	CI	1981	1981	N			
Co-58	Solid.	Unknown.	T .00100000000000	CI	1983	1983	N			
Co-60	Solid.	Unknown.	T .00100000000000	CI	1983	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals 1/2 Co-58 and 1/2 Co-60, based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
None.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Percentage of Co-58 and Co-60 in MAP. No other data available on inventories.

8. Key assumptions used to deal with the unknowns:
Co-58 and Co-60 are equal.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 7

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/07/93

3. Generator: D+D
(area or contractor - use code from attached list)

4. Particular facility: OMR
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Metal, concrete, and soil.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1978 Ending year 1982

9. Waste stream volume:
Amount 1440.0000 Units Cubic meters.
Check box: [ ] annual or [ ] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. OMR (D+D of the Organic Moderated Reactor Experiment Facility).
9. RWMIS reports 1312 m3 volume, reports indicate 1444 m3 disposed. Discrepancy may be difference between container volume and waste volume. Reporting container volume as discussed in report.

1. General physical form (see attached list)
Concrete, brick, and asphalt.
[X] other (specify)
43.

2. Details on physical form(particularly confinement related)
Concrete, soil, scrap metal, reactor components, and piping.

3. Chemical form:
Metal, soil, and concrete.

4. Inner packaging: [X] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
See 7 below.

5. Waste container type (see attached list)
Wooden box*.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
5. "Other".
4, and 6. If articles could not be put into boxes they were sealed in plastic and shipped to RWMC.
"Other" (for waste container type) denotes wrapped in plastic.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
1332-21-4 Asbestos	Pipe sleeve.	Unknown.	Unknown.	GM	1978	1982	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Asbestos shown covering much of the piping shipped. No means of determining volume of asbestos or asbestos type in the waste stream.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Solid.	Contaminated soil, concrete and scrap metal.	T .00000057600000	CI	1978	1982	N	-50%	+50%	
Co-60	Solid.	Contaminated soil, concrete and scrap metal.	T 30.201024000000	CI	1978	1982	N	-50%	+50%	
Cs-137	Solid.	Contaminated soil, concrete and scrap metal.	T 4.9796000000000	CI	1978	1982	N	-50%	+50%	
Eu-152	Solid.	Contaminated soil, concrete and scrap metal.	T .00001760000000	CI	1978	1982	N	-50%	+50%	
Eu-155	Solid.	Contaminated soil, concrete and scrap metal.	T .00000733200000	CI	1978	1982	N	-50%	+50%	
Pu-238	Solid.	Contaminated soil, concrete and scrap metal.	T .00132240000000	CI	1978	1982	N	-50%	+50%	
Sr-90	Solid.	Contaminated soil, concrete and scrap metal.	T 4.9740600000000	CI	1978	1982	N	-50%	+50%	
U-235	Solid.	Contaminated soil, concrete and scrap metal.	T .00001472000000	CI	1978	1982	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

MAP equals Co-60, MFP equals 1/2 Cs-137 based on process information. Unidentified alpha included with Pu-238 reported curies.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Report - "D+D of the Organic Moderated Reactor Experiment Facility", (OMRE) EGG-2059. Interview with Dick Messervey.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
Differences in volumes from RWMIS versus reports.

7. Major unknowns in inventories of contaminants:
Asbestos percentage included in shipments.

8. Key assumptions used to deal with the unknowns:
MAP, MFP and UN-ID-ALPHA determination. No G-M correction is needed to the best estimate. The waste stream curie content and specific radionuclides were determined by means of the generator's analytical methods prior to shipping. Upper and lower bounds are estimated based on waste expert's judgment.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 27

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/02/93

3. Generator: D+D
(area or contractor - use code from attached list)

4. Particular facility: S1G
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Deconned reactor vessel and processing equipment, components and piping.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1983 Ending year 1983

9. Waste stream volume:
Amount 65.2400 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
4. S1G - Reactor Vessel Decomm.
6. Deconned reactor vessel (primarily) with Na removed from the vessel. No Na included in shipment.

1. General physical form (see attached list)
Other core, reactor vessel, loop component
[ ] other (specify)

2. Details on physical form (particularly confinement related)
Reactor vessel and components.

3. Chemical form:
Metal.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. Other equals reactor vessel, not packaged.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Decontamination and decommissioning involved removal of Na from vessel. No other hazardous material suspected. Any remaining Na considered negligible.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Activated metal.	Unknown.	T 1539.4000000000	CI	1983	1983	N	-50%	+50%	
Fe-55	Activated metal.	Unknown.	T 61.000000000000	CI	1983	1983	N	-50%	+50%	
H-3	Activated metal.	Unknown.	T 3300.0000000000	CI	1983	1983	N	-50%	+50%	
Nb-94	Activated metal.	Unknown.	T 2.0000000000000	CI	1983	1983	N	-50%	+50%	
Ni-59	Activated metal.	Unknown.	T 4.0000000000000	CI	1983	1983	N	-50%	+50%	
Ni-63	Activated metal.	Unknown.	T 673.00000000000	CI	1983	1983	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The chemical form for these radionuclides is reported to be "unknown - assumed predominantly as surface contamination and oxides". MAP considered as Co-60 and rolled into Co-60 curies based on information that it is a typical activation product.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
EGG-2298, Reactor Vessel Decommissioning Project.
Interview with Dick Messervey.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
None.

8. Key assumptions used to deal with the unknowns:
MAP determination. No G-M correction is needed to the best estimate. The waste stream curie content and specific radionuclides were determined by means of the generator's analytical methods prior to shipping. Upper and lower bounds are estimated based on waste expert's judgment.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 5

1. Preparer: Jorgensen, Doug

2. Date prepared: 06/22/93

3. Generator: D+D
(area or contractor - use code from attached list)

4. Particular facility: SPT
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Piping, tanks, and valves.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1979 Ending year 1979

9. Waste stream volume:
Amount 66.2000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
4. Includes Decon. and Decom. of SPERT-IV.

1. General physical form (see attached list)
Other scrap metals.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Plate stainless steel, cast iron and aluminum.

3. Chemical form:
Steel, iron and aluminum.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Wooden box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other" is heat exchanger wrapped with Herculite and taped.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
1332-21-4 Asbestos	Pipe covering.	Unknown.	Unknown.	GM	1979	1979	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Total quantity is unknown. Photos of piping systems show probable asbestos covering. This cannot be confirmed nor can a volume be determined.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Metal.	Surface contamination.	T .00137500000000	CI	1979	1979	N			
Cs-137	Metal.	Surface contamination.	T .00069000000000	CI	1979	1979	N			
Sr-90	Metal.	Surface contamination.	T .00068000000000	CI	1979	1979	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals Co-60; MFP equals 1/2 Cs-137; 1/2 Sr-90 based on isotopes detected/analyzed for in D+D report.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
TREE-1373, "Final Report SPERT-IV Decontamination and Decommissioning". Interview with Dick Messervey.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
None.

8. Key assumptions used to deal with the unknowns:
MAP/MFP actual isotopes. G-M correction is needed to the best estimate. The waste stream inventory was identified by the generator as MFP and the G-M method was used by the generator to estimate total curie content.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 4

1. Preparer: Jorgensen, Doug

2. Date prepared: 07/01/93

3. Generator: D+D
(area or contractor - use code from attached list)

4. Particular facility: TAN*
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
PM-2A Underground Tanks PM-2A Liquid waste evaporator system and TSF-3 concrete pad.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1981 Ending year 1982

9. Waste stream volume:
Amount 494.3800 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. This form includes three RWMIS D+D listings plus D and D of TSF-3 concrete pad at TAN. All included on one form because of similarity in process and suggest RWMIS listing be changed just for TAN.
4.* Includes D+DTAN, D+DTAN and D+D616 in RWMIS and includes TSF-3 concrete pad.
9. The 494.38 m3 volume is the total volume from the RWMIS listing (D+D616, D+DPM2 and D+DTAN). Three reports of D and D operations at TAN list a total container volume of 427.07 m3, which is 95.5% of the RWMIS volume reported. Facilities included in TAN are D+DTAN, D+DPM2, D+D616 in RWMIS.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
13, 21, 41, 43, 44, 45, 15, 47 and other.

2. Details on physical form(particularly confinement related)
Steel, stainless steel, galvanized steel tanks and pipe, solidified liquid NOS (in concrete) and soil and concrete.

3. Chemical form:
Asbestos, steel, copper, diatomaceous earth, plastic, rubber, concrete, wood and soil.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [X] other (specify)
See 7 below.

5. Waste container type (see attached list)
Wooden box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
1. 10, 13, 21, 41, 43, 44, 45, 15, 47, and O equals dried paint.
4. Three large tanks were wrapped in plastic sheeting prior to disposal.
5. BLM and "Other".

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
1332-21-4 Asbestos	Pipe sleeves.	Unknown.	Unknown.	GM	1981	1982	N			
7440-50-8 Copper	Copper tubing.	Cu metal.	Unknown.	GM	1981	1982	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Asbestos insulation is present on evaporator tank from PM-2A D+D. No tank dimensions were given in order to estimate the volume of asbestos. Copper piping mentioned in waste stream, however, there are no means of determining a volume.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Metal.	Unknown.	T .08448000000000	CI	1981	1982	N	-50%	+50%	
Cs-134	Metal.	Unknown.	T .08106000000000	CI	1981	1982	N	-50%	+50%	
Cs-137	Metal.	Unknown.	T 56.927000000000	CI	1981	1982	N	-50%	+50%	
Sr-90	Metal.	Unknown.	T 8.5001000000000	CI	1981	1982	N	-50%	+50%	
U-235	Metal.	N/A.	T .00017500000000	CI	1981	1982	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Unidentified alpha included with U-235, MFP equals 1/2 Sr-90, 1/2 Cs-137 based on process information.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
1. EG&G-2236, "Final Report Decon. & Decomm. of TAN Radioactive Liquid Waste Evaporator System" (PM-2A).
2. EG&G-2292, "Final Report Decon. & Decomm. of the TAN/TSF-3 Concrete Pads".
3. PR-W-80-018, "PM-2A Radiological Characterization".

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:
Volume in reports is within 95.5 % of RWMIS volume.

7. Major unknowns in inventories of contaminants:
Asbestos and copper volumes can not be accurately estimated.

8. Key assumptions used to deal with the unknowns:
MAP/MFP determination. No G-M correction is needed to the best estimate. The waste stream curie content and specific radionuclides were determined by means of the generator's analytical methods prior to shipping. Upper and lower bounds are estimated based on waste expert's judgment.

Loss-of-Fluid Test Reactor

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 73

1. Preparer: Jorgensen, Doug

2. Date prepared: 06/30/93

3. Generator: LOF
(area or contractor - use code from attached list)

4. Particular facility: 650
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Combustibles (paper, cloth, wood, etc.).

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1982 Ending year 1982

9. Waste stream volume:
Amount 0.7929 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
Compactible.

2. Details on physical form(particularly confinement related)
Waste generated from cleanup of the facility.

3. Chemical form:
Solid.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Bale.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. Twenty each 1.4 cu ft. BLXs.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-58	Solid.	N/A.	A .00319000000000	CI	1982	1982	N			
Co-60	Solid.	N/A.	A .00319000000000	CI	1982	1982	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MAP equals 1/2 Co-58 and 1/2 Co-60, based on best guess estimate.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
None.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Physical/chemical form of waste stream and other details of waste stream.

8. Key assumptions used to deal with the unknowns:
Assumed physical form to be solid and probably combustible materials with rad. contamination.

Naval Reactors Facility

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 75

1. Preparer: Leonard, Patrick

2. Date prepared: 03/18/94

3. Generator: NRF
(area or contractor - use code from attached list)

4. Particular facility: 601*
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Low level compactible and noncompactible waste from operation of the S1W reactor and related activities.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1983

9. Waste stream volume:
Amount 2942.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. * also includes NRF-613.
8. Material was sent from S1W to the RWMC prior to 1960, but few records have been found for that time period. S1W was built about 1951.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
5.

2. Details on physical form(particularly confinement related)
Most of the activity was probably particulate with the occasional large metal valve or other reactor system component. The majority of this activity is mobile.

3. Chemical form:
Activated corrosion and wear products.

4. Inner packaging: [X] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. BXW, BLM, "Other", and I.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that•contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Particulate.	Oxide.	T 2129.4000000000	CI	1961	1961	N			
Fe-55	Particulate.	Oxide.	T 546.00000000000	CI	1961	1961	N			
Ni-63	Particulate.	Oxide.	T 43.700000000000	CI	1961	1961	N			
Co-60	Particulate.	Oxide.	T 124.80000000000	CI	1962	1983	N			
Fe-55	Particulate.	Oxide.	T 32.000000000000	CI	1962	1983	N			
Ni-63	Particulate.	Oxide.	T 2.5600000000000	CI	1962	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
NRFEM-RR-1122.

2. Details concerning source (names, report no., dates, etc.)
Letter NRFEM-RR-1122 "NRF Comments to the Radioactive Waste Management Complex (RWMC) Waste Inventory Report", R.W. Nieslanik, NRF, to T.H. Smith, EG&G, dated March 29,1994.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
Radionuclide distribution has been re-evaluated by NRF.

7. Major unknowns in inventories of contaminants:
See continuation.

8. Key assumptions used to deal with the unknowns:
An assumption was that quantities prior to 1960 were small. The 2730 curies in 1961 can be attributed to a single event, not repeated.

Continuation of Part E Column or Question Number or Title 7.

Curie content of these shipments was estimated based on radiation readings with a Geiger-Mueller detector, a method known to have a consistent bias toward higher estimates than really present.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 76

1. Preparer: Leonard, Patrick

2. Date prepared: 03/18/94

3. Generator: NRF
(area or contractor - use code from attached list)

4. Particular facility: 617*
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Low level compactible and non-compactible waste resulting from operation of the A1W reactors and related activities.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1983

9. Waste stream volume:
Amount 3092.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. * Also includes NRF-616, NRF-636, NRF-619, NRF-630, and NRF-631.
8. A1W was built about 1957, but few records have been found that detail shipments of waste from A1W to the RWMC prior to 1960.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
5.

2. Details on physical form(particularly confinement related)
Most of the activity was probably particulate, with the occasional large metal valve or other reactor system component. The majority of this activity is mobile.

3. Chemical form:
Activated corrosion and wear products.

4. Inner packaging: [X] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. BXW, BLM, and "Other".

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Particulate.	Oxide.	T 3641.3000000000	CI	1960	1983	N			
Fe-55	Particulate.	Oxide.	T 1790.0000000000	CI	1960	1983	N			
Ni-63	Particulate.	Oxide.	T 145.00000000000	CI	1960	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Approximately 2E+04 curies of the short-lived Zr-95 (half-life 2 months) were omitted from this list. From the year of record (1965) until 1995, there would be a decrease to E-23 curies.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
NRFEM-RR-1122.

2. Details concerning source (names, report no., dates, etc.)
Letter NRFEM-RR-1122 from R.W. Nieslanik, NRF, to T.H. Smith, EG&G, "NRF Comments to the Radioactive Waste Management Complex (RWMC) Waste Inventory Report," March 29, 1994.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
Radionuclide distribution has been re-evaluated by NRF.

7. Major unknowns in inventories of contaminants:
See continuation.

8. Key assumptions used to deal with the unknowns:
Quantities prior to 1960 were small. A1W was built in 1957 and would not have generated much radioactive waste for a couple of years after that.

Continuation of Part E Column or Question Number or Title 7.

Curie content of these shipments was estimated, based on radiation readings with a Geiger-Mueller detector, a method known to have a consistent bias toward higher estimates than really present.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 243

1. Preparer: Leonard, Patrick

2. Date prepared: 03/10/94

3. Generator: NRF
(area or contractor - use code from attached list)

4. Particular facility: 617*
(building number - use code from attached list)

5. Number of waste stream from this facility:
2H

6. Waste stream:
Lead and asbestos.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1955 Ending year 1983

9. Waste stream volume:
Amount ______ Units ______
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
(*) Also includes NRF-616, NRF-636, NRF-619, NRF-630, NRF-631, and NRF-618.

1. General physical form (see attached list)
Lead.
[X] other (specify)
47.

2. Details on physical form(particularly confinement related)
The lead was radioactively contaminated shielding material in bricks and sheets. The asbestos was loose, friable thermal insulation removed from piping.

3. Chemical form:
Lead, metal, asbestos and unknown.

4. Inner packaging: [X] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
1332-21-4 Asbestos	Fibers.	Unknown.	Unknown.	GM	1955	1983	N			
7439-92-1 Lead	Solid metal.	Unknown.	Unknown.	GM	1955	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[X] operating records [ ] interview
[X] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[ ] best estimate
[ ] worst case
[X] other
No estimate.

4. If other than best estimate, explain why:
No information has been discovered to allow an estimate of the quantities of either of these two contaminants sent from NRF to the RWMC.

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
No records have been discovered which would allow an estimate of the inventories.

8. Key assumptions used to deal with the unknowns:

Continuation of Part E Column or Question Number or Title 7.

It is known that both lead shielding and asbestos insulation was shipped from NRF to the RWMC in the past. Radioactive material transfer records show these items occasionally, and past and present employees of NRF remember sending radioactively contaminated lead and asbestos to the RWMC. What is missing is information on the quantity of these contaminants.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION   HDT - 78

1. Preparer: Leonard, Patrick

2. Date prepared: 07/09/93

3. Generator: NRF
(area or contractor - use code from attached list)

4. Particular facility: 618
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Dissolved PWR fuel rods absorbed in vermiculite.

7. Type of radioactive waste (check box):
[X] TRU or suspect TRU
[ ] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1964

9. Waste stream volume:
Amount 5.5000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Irradiated fuel rods from experiments.
[X] other (specify)
2.

2. Details on physical form(particularly confinement related)
Fuel rods were dissolved and absorbed in vermiculite in polybottles. Nature of solution is unknown, but probably highly reactive acids. The majority of this activity is mobile.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Poly bottles. See 7 below.

5. Waste container type (see attached list)
Insert*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
4. "Other" equals poly bottles used to contain the solutions, absorbed in vermiculite.
5. "Other".

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7664393 Hydrofluoric Acid	Liquid absorbed in vermiculite.	Unknown.	Unknown.	GM	1960	1964	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

An assumption has been made that the PWR fuel rods were probably dissolved in HF. The resulting solution may have been made safer for handling by the addition of some complexing agent, but no information is available on this matter.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Solution.		T 762.00000000000	CI	1960	1964	N			
Cs-137	Solution.		T 762.00000000000	CI	1960	1964	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

No specific mix of radionuclides was given consistently in the records. The majority of the activity would have been due to fission products. The assumption was made for the purpose of this study that the responsible radionuclides were 50% Sr-90 and 50% Cs-137. Based on NRF data, the scaling factor uncertainty for Sr-90 in this stream was taken to be the same as that for Cs-137.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[X] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
No quantities for the chemicals, nor even their identification, are listed in the records. Gram quantities were sometimes given for Pu and U. Most of the activity would have been due to fission products.

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 79

1. Preparer: Leonard, Patrick

2. Date prepared: 07/13/93

3. Generator: NRF
(area or contractor - use code from attached list)

4. Particular facility: 618
(building number - use code from attached list)

5. Number of waste stream from this facility:
2H

6. Waste stream:
Structural components from Navy core fuel bundles.
End boxes and other components (1955-1975).

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1955 Ending year 1975

9. Waste stream volume:
Amount 427.3000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Irradiated end boxes.
[X] other (specify)
5.

2. Details on physical form(particularly confinement related)
Solid metal parts activated by neutrons in the core environment. The majority of the activity would be immobile.

3. Chemical form:
Metal alloys.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[X] metal liner [ ] none [X] other (specify)
See 7 below.

5. Waste container type (see attached list)
Insert.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
4. This material, scrap metal cut from Navy fuel bundles, was loaded into a shipping cask insert in the ECF water pits. The insert was then loaded into the shipping cask for transport to the RWMC where the insert was removed from the shipping cask and buried.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid metal.	Unknown.	T 907500.00000000	CI	1955	1975	N	-30%	+10%	
Ni-63	Solid metal.	Unknown.	T 166600.00000000	CI	1955	1975	N	-30%	+10%	
Fe-55	Solid metal.	Unknown.	T 872700.00000000	CI	1955	1975	N	-30%	+10%	
Sb-125	Solid metal.	Unknown.	T 48000.000000000	CI	1955	1975	N	-30%	+10%	
Sn-119m	Solid metal.	Unknown.	T 7200.0000000000	CI	1955	1975	N	-30%	+10%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Radionuclide distributions were based on an evaluation of the various cores being processed during this time period. The evaluation considered the metal composition of the structural material, its location in the core, neutron flux, and power history.

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
NRFEM-RR-1122.

2. Details concerning source (names, report no., dates, etc.)
Letter NRFEM-RR-1122 from R.W. Nieslanik, NRF, to T.H. Smith, EG&G, "NRF Comments to the Radioactive Waste Management Complex (RWMC) Waste Inventory Report", March 29, 1994.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
Radionuclide distribution and curie total have been re-evaluated by NRF.

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 80

1. Preparer: Leonard, Patrick

2. Date prepared: 03/09/94

3. Generator: NRF
(area or contractor - use code from attached list)

4. Particular facility: 618
(building number - use code from attached list)

5. Number of waste stream from this facility:
3H

6. Waste stream:
Structural components from Navy core fuel bundles. End boxes and other components (1976-1980).

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1976 Ending year 1980

9. Waste stream volume:
Amount 98.7700 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Irradiated end boxes.
[X] other (specify)
5.

2. Details on physical form(particularly confinement related)
Solid metal activated by exposure to neutrons in the core environment. The majority of the activity would be immobile.

3. Chemical form:
Metal alloys.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[X] metal liner [ ] none [X] other (specify)
See 7 below.

5. Waste container type (see attached list)
Insert.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
4. This material, scrap metal cut from Navy fuel bundles, was loaded into a shipping cask insert in the ECF water pits. The insert was then loaded into a shielded shipping cask for transport to the RWMC where the liner was removed from the shipping cask and buried.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Fe-55	Solid metal.	Unknown.	T 140500.00000000	CI	1976	1980	N	-30%	+10%	
Co-60	Solid metal.	Unknown.	T 116400.00000000	CI	1976	1980	N	-30%	+10%	
Sb-125	Solid metal.	Unknown.	T 76290.000000000	CI	1976	1980	N	-30%	+10%	
Sn-119m	Solid metal.	Unknown.	T 20080.000000000	CI	1976	1980	N	-30%	+10%	
Ni-63	Solid metal.	Unknown.	T 8031.0000000000	CI	1976	1980	N	-30%	+10%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Radionuclide distribution in accordance with Bartolomucci letter (see E-2).

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Bartolomucci letter (see E-2).

2. Details concerning source (names, report no., dates, etc.)
Letter NRFE-E-1448, from J.A. Bartolomucci to J.N. Davis, "Curie Content Estimates for ECF Scrap Casks", dated February 27, 1989.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 81

1. Preparer: Leonard, Patrick

2. Date prepared: 03/10/94

3. Generator: NRF
(area or contractor - use code from attached list)

4. Particular facility: 618
(building number - use code from attached list)

5. Number of waste stream from this facility:
4H

6. Waste stream:
Structural components from Navy core fuel bundles. End boxes and other components (1981-1983).

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1981 Ending year 1983

9. Waste stream volume:
Amount 56.6000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Irradiated end boxes.
[X] other (specify)
5.

2. Details on physical form(particularly confinement related)
Solid metal activated by exposure to neutrons in the core environment. The majority of the activity would be immobile.

3. Chemical form:
Metal alloy.

4. Inner packaging: [ ] plastic bag [ ] plastic liner [X] metal liner [ ] none [X] other (specify)
See 7 below.

5. Waste container type (see attached list)
Insert.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
4. This material, scrap metal cut from Navy fuel bundles, was loaded into a shipping cask insert in the ECF water pits. The insert was then loaded into a shielded shipping cask for transport to the RWMC where the liner was removed from the shipping cask and buried.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-63	Solid metal.	Unknown.	T 32960.000000000	CI	1981	1983	N	-30%	+10%	
Co-60	Solid metal.	Unknown.	T 21520.000000000	CI	1981	1983	N	-30%	+10%	
Fe-55	Solid metal.	Unknown.	T 10760.000000000	CI	1981	1983	N	-30%	+10%	
Co-58	Solid metal.	Unknown.	T 2018.0000000000	CI	1981	1983	N	-30%	+10%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Radionuclide distribution in accordance with Bartolomucci letter (see E-2).

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
See E.2.

2. Details concerning source (names, report no., dates, etc.)
Letter NRFE-E-1448 from J.A. Bartolomucci of NRF to J.N. Davis of EG&G, "Curie Content Estimate for ECF Scrap Casks", dated February 27, 1989.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 82

1. Preparer: Leonard, Patrick

2. Date prepared: 07/13/93

3. Generator: NRF
(area or contractor - use code from attached list)

4. Particular facility: 618
(building number - use code from attached list)

5. Number of waste stream from this facility:
5H

6. Waste stream:
Zirconium alloy (zircaloy) cladding from Navy cores.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1955 Ending year 1975

9. Waste stream volume:
Amount 11.7000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Zirconium.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Solid scrap, chips from machining operations, and saw fines. The majority of this material would be immobile.

3. Chemical form:
Zirconium (zircaloy) alloy.

4. Inner packaging: [ ] plastic bag [ ] plastic liner [X] metal liner [ ] none [X] other (specify)
Metal cans.

5. Waste container type (see attached list)
Insert*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
4. The zirconium alloy scrap resulting from water pit operations on Navy cores would be cleaned from the bottom of the pits, placed in 5-gallon cans (round or square), and the cans loaded into a scrap cask insert. The insert would then be loaded into a shielded shipping cask for transport to the RWMC. At the RWMC, the insert would be removed and buried. Before use of a specially built scrap cask became common, the zirconium would be transported to the RWMC in a shielded 32-gallon galvanized trash can ("trash cask").
5. "Other."

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None-XZA. Zirconium Alloys	Solid, chips and fines.	Metal alloy.	T 13000.000000000	LB	1955	1975	N	-80%	+100%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Zr-95	Solid.	Alloy.	T 72850.000000000	CI	1955	1975	N	-30%	+10%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Given the short half-life (67 days) for Zr-95, the activity buried in the 1960's would have long since decayed.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[X] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Weights of the zirconium alloy shipments were estimated at the time of shipment when any data were given at all. From 1960 through 1964, weights were frequently not given.

8. Key assumptions used to deal with the unknowns:
The assumption was made that shipments for which weights were not given were the same weight as the average weight for later shipments for which weights were listed.

Continuation of Part E Column or Question Number or Title E-8 and E-7.

The preparer estimates that approximately 13,000 pounds of mixed zirconium alloy solid pieces, chips, and saw fines were buried at the RWMC over the period from 1960 through 1967. This represents a significant fire hazard for anyone attempting to recover buried waste at the RWMC, since zirconium and zirconium alloys are pyrophoric.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 83

1. Preparer: Leonard, Patrick

2. Date prepared: 07/14/93

3. Generator: NRF
(area or contractor - use code from attached list)

4. Particular facility: 618*
(building number - use code from attached list)

5. Number of waste stream from this facility:
6H

6. Waste stream:
Solidified sludge, resin, waste liquids in vermiculite.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1955 Ending year 1983

9. Waste stream volume:
Amount 624.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. (*)Also includes NRF-601, NRF-617, and NRF-633.

1. General physical form (see attached list)
Sludge.
[X] other (specify)
12, 13, 14.

2. Details on physical form(particularly confinement related)
Most of these sludges and resins were contained in metal tanks and drums. Also, in many cases, there is specific mention of the liquid being absorbed in some sorbent (mainly vermiculite) or being solidified.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other" and BLF.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Sludge and resin.	Unknown.	T 472.80000000000	CI	1955	1983	N			
Cs-137	Sludge and resin.	Unknown.	T 269500.00000000	CI	1955	1983	N			
Sr-90	Sludge and resin.	Unknown.	T 269500.00000000	CI	1955	1983	N			
Fe-55	Sludge and resin.	Unknown.	T 236.40000000000	CI	1955	1983	N			
Ni-63	Sludge and resin.	Unknown.	T 78.800000000000	CI	1955	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
MFP were treated as being 50% Sr-90 and 50% Cs-137. Based on NRF data, the scaling factor uncertainty for Sr-90 in this stream was taken to be the same as that for Cs-137.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[X] operating records [X] interview
[X] expert judgment [ ] reports
[X] other
NRFEM-RR-1122.

2. Details concerning source (names, report no., dates, etc.)
Letter from R.W. Nieslanik (NRF) to T.H. Smith (EG&G)
NRFEM-RR-1122, "NRF comments to the Radioactive Waste Management Complex (RWMC) Waste Inventory Report", March 29, 1994.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Curie contents in tanks and barrels were estimated using a Geiger-Mueller detector, a method that generally over-estimated the activity in the shipments.

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 84

1. Preparer: Leonard, Patrick

2. Date prepared: 01/25/94

3. Generator: NRF
(area or contractor - use code from attached list)

4. Particular facility: 618
(building number - use code from attached list)

5. Number of waste stream from this facility:
7H

6. Waste stream:
Low level compactible and non-compactible waste resulting from work at the ECF water pits and hot cells.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1983

9. Waste stream volume:
Amount 12460.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)
This material would likely be in the form of particulate.
The majority would be mobile.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. BLM, BXW, and "Other".

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Fe-55	Particulate.	Oxide.	T 57300.000000000	CI	1960	1983	N			
Co-60	Particulate.	Oxide.	T 115000.00000000	CI	1960	1983	N			
Ni-63	Particulate.	Oxide.	T 19100.000000000	CI	1960	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
NRFEM-RR-1122.

2. Details concerning source (names, report no., dates, etc.)
Letter NRFEM-RR-1122 from R.W. Nieslanik, NRF, to T.H. Smith, EG&G, "NRF Comments to the Radioactive Waste Management Complex (RWMC) Waste Inventory Report", March 29, 1994.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Curie content of packages were estimated using a Geiger-Mueller detector, a method that generally over-estimated the activity in the shipments.

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 77

1. Preparer: Leonard, Patrick

2. Date prepared: 03/21/94

3. Generator: NRF
(area or contractor - use code from attached list)

4. Particular facility: 633
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Low level compactible and non-compactible waste, resulting from operation of the S5G reactor.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1965 Ending year 1983

9. Waste stream volume:
Amount 610.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
8. S5G was built in 1965.

1. General physical form (see attached list)
Other core,reactor vessel,loop component
[X] other (specify)
21.

2. Details on physical form(particularly confinement related)
Most of the activity was probably particulate, with the occasional large metal valve or other reactor system component. The majority of this activity is mobile.

3. Chemical form:
Activated corrosion and wear products.
Fission products. Probably oxides.

4. Inner packaging: [X] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. BXW, BLM, and "Other".

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Particulate.	Oxide.	T 9.4840000000000	CI	1965	1983	N			
Fe-55	Particulate.	Oxide.	T .18400000000000	CI	1965	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[X] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
NRFEM-RR-1122.

2. Details concerning source (names, report no., dates, etc.)
Letter NRFEM-RR-1122 from R.W. Nieslanik, NRF to T.H. Smith, EG&G,"NRF Comments to the Radioactive Waste Management Complex (RWMC) Waste Inventory Report", March, 1994.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
Radionuclide distribution has been re-evaluated by NRF.

7. Major unknowns in inventories of contaminants:
Curie contents in packages and boxes were estimated using a Geiger-Mueller detector, a method that generally over-estimated the activity in the shipments.

8. Key assumptions used to deal with the unknowns: