Power Excursion Reactor

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 54

1. Preparer: Gerber, G.

2. Date prepared: 06/28/93

3. Generator: PER
(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:
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 1960 Ending year 1970

9. Waste stream volume:
Amount 278.0000 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):
Please note that in this time period, waste from SPERT I, II, III and IV was collected at PBF-601.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
3, 7, 10, 44, 23, 5, 2, 31.

2. Details on physical form(particularly confinement related)
Most items were probably bagged and then put in cardboard boxes, "other" types were probably plastic covered.

3. Chemical form:

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 and "Other". PBF-601 contained the Fuel Storage Vault. It was also disassembly and assembly area for tests at SPERT I, II, III and IV. Waste consists of mostly combustibles and compactibles.

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, brick, shot and sheet.	Unknown.	T 200.00000000000	LB	1960	1970	N			
7440-43-9 Cadmium	Solid and sheet.	Unknown.	T 10.000000000000	LB	1960	1970	N			
67-64-1 Acetone	Liquid absorbed in rags.	Unknown.	T 39.000000000000	LB	1960	1970	N			
78-93-3 2-Butanone	Liquid absorbed in rags.	Unknown.	T 39.000000000000	LB	1960	1970	N			
79-01-6 Trichloroethylene	Liquid absorbed in rags.	Unknown.	T 390.00000000000	LB	1960	1970	N			
7440-22-4 Silver	Solid solder.	Alloy.	T 1.0000000000000	LB	1960	1970	N			
71-55-6 1,1,1-Trichloroethane	Liquid absorbed in rags.	Unknown.	T 78.000000000000	LB	1960	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)
Hazardous chemicals are estimates from interviews with persons mentioned in part E.

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.	Oxides.	T 2.3800000000000	CI	1960	1970	N	-50%	+50%	
U-235	Pellet, powder, solid and rods.	Unknown.	T .00200000000000	CI	1960	1970	N	-50%	+50%	
U-238	Pellet, powder, solid and rods.	Unknown.	T .00433000000000	CI	1960	1970	N	-50%	+50%	
Cs-137	Solid.	Oxides.	T 17.240000000000	CI	1960	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)

UN-ID-B&G probably Cs-137 due to past analysis on SPERT II and SPERT III Leach Pond (see WM-F1-83-009 and WM-F1-83-010). These fuel rods were fabricated and analyzed at PBF-601. Some disposal also took place of U-235 and U-238. MFP is most probably Cs-137 (see above mentioned reports) and MAP is most probably Co-60 (see above mentioned reports). MFP, UN-ID-B&G were lumped together and renamed Cs-137. MAP and Co-60 were lumped together as Co-60. Also curie content is field estimate only based upon radiation readings.

PART E - SOURCES OF INFORMATION AND UNCERTAINTIES - PER-601-1H

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

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

2. Details concerning source (names, report no., dates, etc.)
Report WM-F1-82-018, SM-F1-83-009, WM-F1-83-010.
Interview: Ron Drake (6-8248), Ron Ooley (6-4253), R.L. Pierce (6-4566), Lavar Palmer (6-6644), Larry O. Miller (6-2710), Deloy Beasley (483-3611), Clyde Toole (6-6316), & Guy J. Wilson (233-3189).

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:
Radionuclides better identified, hazardous materials identified. Also, PER-601 collected waste from SPERT I, II, III, and IV during this time period.

7. Major unknowns in inventories of contaminants:
Acetone, MEK, may have already evaporated away. Radionuclides are per best recollection of personnel involved.

8. Key assumptions used to deal with the unknowns:
Interviews are the best recollections of personnel involved with these operations. Some of hazardous chemical volumes disposed. 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 - 55

1. Preparer: Gerber, G.

2. Date prepared: 06/28/93

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

4. Particular facility: 612
(building number - use code from attached list)

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

6. Waste stream:
Glove box, vacuum pump, air conditioner, capsule and radioactive source.

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 1973

9. Waste stream volume:
Amount 9.9600 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):
This is the SPERT II Facility.

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

2. Details on physical form(particularly confinement related)
Glove box, vacuum pump, air conditioner, and one radioactive source (Ra-226). Possible Capsule Driver Core (CDC) capsule (test device). This waste is primarily metal components.

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. BXC.
5. "Other" is a capsule for testing of fuel, cabinet, milling machine pump, air conditioner, and glove box.

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, brick, shote and sheet.	Unknown.	A 200.00000000000	LB	1973	1973	N			
79-01-6 Trichloroethylene	Liquid absorbed in rags.	Unknown.	A 39.000000000000	LB	1973	1973	N			
78-93-3 2-Butanone	Liquid absorbed in rags.	Unknown.	A 7.8000000000000	LB	1973	1973	N			
7440-22-4 Silver	Solder.	Alloy.	A .10000000000000	LB	1973	1973	N			
71-55-6 1,1,1-Trichloroethane	Liquid absorbed in rags.	Unknown.	A 7.8000000000000	LB	1973	1973	N			
67-64-1 Acetone	Liquid absorbed in rags.	Unknown.	A 7.8000000000000	LB	1973	1973	N			
7440-43-9 Cadmium	Solid sheet.	Unknown.	A 20.000000000000	LB	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)
Solvents used to clean-up. Lead and cadmium were used for shielding. Quantities given are the best recollection of personnel involved with this facility.

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	Solid.	Oxides.	A .00000000500000	CI	1973	1973	N	-50%	+50%	
Cs-137	Solid.	Oxides.	A .70900000000000	CI	1973	1973	N	-50%	+50%	
Ra-226	Solid.	Source.	A .22900000000000	CI	1973	1973	N	-50%	+50%	
Pu-239	Solid.	Oxides.	A .00000000500000	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)

Radionuclides curies are just estimates from radioactive readings. See document WM-F1-83-010, D+D of SPERT II Leach Pond for reference. Cs-137 is probably the UN-ID-B&G, and Pu-238, 239 is probably the UN-ID-alpha. Curies reported are estimated from radiation readings.

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.)
Ron Drake (6-8248), Lavar Palmer (6-6644), R.L. Pierce (6-4566), Larry O. Miller (6-2710), Deloy Beasely (483-3661), Ron Ooley (6-4253), Guy J. Wilson (233-3189) & Clyde Toole (6-6313).
Report document WM-F1-83-010.

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:
Hazardous materials are not listed and the nuclides are not fully identified.

7. Major unknowns in inventories of contaminants:
Curies are just a rough estimate, but usually on the high side.

8. Key assumptions used to deal with the unknowns:
Some of hazardous chemical volumes disposed. 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 - 56

1. Preparer: Gerber, G.

2. Date prepared: 06/30/93

3. Generator: PER
(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:
Core structure components, reactor vessel and loop components.

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 1980

9. Waste stream volume:
Amount 186.7000 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):
3. Generator is listed as PER and PBF.
3. and 4. In RWMIS, PER and PBF-613 are listed as separate facilities, they are in fact the same facility. Data is combined for both facilities. This is the SPERT IV Facility.
9. This is the total for years 1971, 1973, 1976, 1979, and 1980. Prior to D+D there is no documentation found for Reactor Fuel. Also included is PER with no building number. Review of original shipping records reveals that this waste came from the SPERT IV (PER-613).

1. General physical form (see attached list)
Other core,reactor vessel,loop component
[X] other (specify)
13, 10, 44, 21, 7.

2. Details on physical form(particularly confinement related)
Waste primarily is metal components (05).

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:
Silver leftovers and slag from Recovery Process constitutes hazardous waste generated in 1979 to 1982 time frame.

7. Comments (specify number of pertinent question):
1. Lead exists in small quantities, used and disposed of in radioactive waste less than 100 lbs. A UO2 and vermiculite mixture was disposed of in probably 1971. Also, one radioactive shipping cask was sent to the RWMC and it probably contains lead (unknown quantity). One shipment in 1973 and one in 1974 went to PAD A.
5. BXW, BLX and BXC. "Other" equals containers, mostly odd shaped or large metal core components.

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
67-64-1 Acetone	Liquid absorbed in rags.	Unknown.	T 78.000000000000	LB	1971	1982	N			
79-01-6 Trichloroethylene	Liquid absorbed in rags.	Unknown.	T 78.000000000000	LB	1971	1982	N			
7439-92-1 Lead	Solid, brick, shot, and sheet.	Unknown.	T 1000.0000000000	LB	1971	1982	N			
7440-22-4 Silver	Solid (glassified).	Alloy.	T 2.0000000000000	LB	1979	1982	N			
78-93-3 2-Butanone	Liquid absorbed in rags.	Unknown.	T 23.400000000000	LB	1971	1982	N			
7440-43-9 Cadmium	Solid and sheet.	Unknown.	T 4.0000000000000	LB	1971	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)

Acetone has probably volatized off. Waste was generated in 6 years only (1971, 1973, 1976, 1979, 1980, and 1982). Total column represents best estimate of total for all those years. Cadmium and lead were used for shielding. Liquids used in small quantities for cleanup.

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.	Oxides and particulate.	T 4.9340000000000	CI	1971	1982	N	-50%	+50%	
U-235	Absorbed liquid slurry.	Unknown.	T .00002996000000	CI	1971	1971	N	-50%	+50%	
U-238	Absorbed liquid slurry.	Unknown.	T .00004329000000	CI	1971	1971	N	-50%	+50%	
Cs-137	Solid.	Oxides and particulate.	T .29800000000000	CI	1971	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)

Curies reported are from Field Radiation Measurements and then converted. Total column is total for 6 years (1971, 1973, 1976, 1979, 1980, & 1981). UN-ID-B&G and MFP for all years was converted to Cs-137, which is typical for PBF/SPERT. 90-95 % of MFP is Cs-137. Co-60 and MAP were combined totals. Most MAP is Co-60 in PBF/SPERT area.

PART E - SOURCES OF INFORMATION AND UNCERTAINTIES - PER-613-1H

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.)
Lavar Palmer (6-6644), R.L. Pierce (6-4566), Guy J. Wilson (233-3189), Larry O. Miller (6-2710), George Reimos (6-0349), Clyde Toole (6-6316), Deloy Beasley (483-3611), Ron Ooley (6-4253)
Report TREE-1373, page 23.

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:
PER (no building number) needs to be added to PER/PBF-613 totals. PER (no building number) is really PER-613. PER-613 and PBF-613 are the same building but listed separately in RWMIS, this may need to be changed.

7. Major unknowns in inventories of contaminants:
Curies reported are typically a field estimate and not an actual gamma spectrometer.

8. Key assumptions used to deal with the unknowns:
MFP was usually 90-95% Cs-137. UN-ID-B&G was usually Cs-137. MAP was usually Co-60. Looked at sampling report for SPERT IV (Report TREE-1373, page 23). Some of hazardous chemical volumes disposed of. 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 - 57

1. Preparer: Gerber, G.

2. Date prepared: 07/02/93

3. Generator: PER
(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:
Irradiated and unirradiated fuel.

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 1977

9. Waste stream volume:
Amount 0.7070 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):
Unused, and also irradiated fuel discarded to RWMC after shutdown of SPERT I, II, III, and IV reactors. PER-617 and PBF-617 are the same building. Also includes fuel that was sent to Pad A. Irradiated fuel has a low megawatt irradiation time.

1. General physical form (see attached list)
Irradiated fuel from experiments.
[X] other (specify)
3, pellet, powder and rods.

2. Details on physical form(particularly confinement related)
Pellets, powder and rods.

3. Chemical form:

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

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

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
4. Fuel probably wrapped plastic and put in BXC or metal shipping can (1 cu ft.).
5. "Other" is a 1 cubic ft. metal shipping can. This was just a storage building, no cleaning or solvent use was done.

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)
Talked with Guy J. Wilson (he was in charge of this vault) and he said that no hazardous materials were used here.

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, pellet, powder and rods.	Unknown.	T .00020560000000	CI	1972	1977	N	-50%	+50%	
U-238	Solid, pellet, powder and rods.	Unknown.	T .00469600000000	CI	1972	1977	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)

Believe this to be very accurate as fuel accountability was in grams and was dealt with in very known quantities. Irradiated fuel is low-yield burn-up.

PART E - SOURCES OF INFORMATION AND UNCERTAINTIES - PER-617-1H

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

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

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

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:
PER-617 and PBF-617 are the same building, also, PER-617 waste to PAD is included in totals.

7. Major unknowns in inventories of contaminants:

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 - 139

1. Preparer: Gerber, G.

2. Date prepared: 07/06/93

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

4. Particular facility: 620
(building number - use code from attached list)

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

6. Waste stream:
Paper, cloth, wood, resin, insulation, batteries, concrete, asphalt and radioactive 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 1970 Ending year 1983

9. Waste stream volume:
Amount 511.8900 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):
PER-620 and PBF-620 are the same building and totals are combined on this data sheet.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
1, 5, 7, 9, 10, 12, 13, 22, 31, 47, 43.

2. Details on physical form(particularly confinement related)
Plastic bags were used to make up a BLX. Plastic bags were used to contain waste thrown away in BXW.

3. Chemical form:

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

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

6. Other characteristics of interest:
Hazardous substances were used in very small quantities.

7. Comments (specify number of pertinent question):
2. Asbestos in some BXW boxes. Zirconium was less than 1 oz. (in chip form) from a modification to a flow tube. Resin is from clean-up operations of lead and reactor systems. Vermiculite and other sorbents are in BXW (required). Also, one box (2x4x8) contains sludge absorbed in kitty litter (approximately 1980). Small non-registered sources (unknown isotopes and quantities) were also disposed of. Carbon zinc and alkaline batteries were disposed of (approximately 200 lbs.). BLM may be disposed of in BXW and reported. Concrete and asphalt in small quantities (5,200 lbs. total) from modifications and clean-up. Soil is from clean-up in small quantities (550 lbs.).
5. BLM, BXC and "Other". Some 24 BXW (128 ft3) are lead lined to reduce radiation levels. Most BXW boxes were plastic liner lined.

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, brick, shot and sheets.	Metal.	T 2000.0000000000	LB	1970	1983	N			
67-64-1 Acetone	Liquid absorbed in rags.		T 39.000000000000	LB	1981	1983	N			
7440-22-4 Silver	Solid zeolite and solder.	Alloy.	T 10.000000000000	LB	1970	1983	N			
7440-47-3 Chromium	Solid and particles.		T 1.0000000000000	LB	1970	1983	N			
71-55-6 1,1,1-Trichloroethane	Liquid absorbed in rags.		T 15.600000000000	LB	1970	1983	N			
1332-21-4 Asbestos	Solid.	Friable.	T 20.000000000000	LB	1970	1983	N			
302012 Hydrazine	Liquid absorbed in rags.		T 3.9000000000000	LB	1970	1983	N			
108-88-3 Toluene	Liquid absorbed in rags.		T 23.400000000000	LB	1978	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)

Silver is in the form of zeolite and silver solder. Chromium is left over residue absorbed in rags. Trichloroethane is "Tag Magic" mixture. Asbestos is friable and typically in small 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
Cs-137	Solid.	Oxides.	T 6.5690000000000	CI	1970	1983	N	-50%	+50%	
Co-60	Solid.	Oxides.	T .99790000000000	CI	1970	1983	N	-50%	+50%	
U-235	Solid, pellets and powder.	Oxides and solid.	T .00063600000000	CI	1970	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)

UN-ID-B&G converted to Cs-137, MFP converted to Cs-137, MAP converted to Co-60. Conversions were based upon past samples but not on these wastes. The number of curies is based upon radiation reading and a conversion formula.

PART E - SOURCES OF INFORMATION AND UNCERTAINTIES - PER-620-1H

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

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

2. Details concerning source (names, report no., dates, etc.)
G. Gerber 6-8230, D. Munson 6-8230, Gus Wilson 233-3189, Vic Kelsey 6-6360, Lavar Palmer 6-6644.

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:
Doesn't include hazardous materials, MFP and MAP converted to known isotopes.

7. Major unknowns in inventories of contaminants:
Quantities given are to the best recollection of personnel involved.

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 - 58

1. Preparer: Gerber, G.

2. Date prepared: 06/24/93

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

4. Particular facility: 623
(building number - use code from attached list)

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

6. Waste stream:
Irradiated fuel powder and pellets.

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 0.2830 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):
One time fuel shipment from PER-623 (SPERT III area). May wish to change the building number as this building was a small support building to PER-609.

1. General physical form (see attached list)
Irradiated fuel from experiments.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Irradiated fuel powder and pellets in 1 cu ft. shipping cans.

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:
None.

7. Comments (specify number of pertinent question):
One time fuel shipment of excess fuel (irradiated) from SPERT III shipment was probably in small 1 cu ft. metal shipping cans.

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, powder and pellet.	Unknown.	T .00082390000000	CI	1971	1971	N	-50%	+50%	
U-238	Solid, powder and pellet.	Unknown.	T .00299700000000	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)

The number of curies given is probably very accurate due to the accountability of Special Nuclear Materials (usually weighed in grams). Fuel had low irradiation time thus low radiation levels.

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

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

2. Details concerning source (names, report no., dates, etc.)
Vic Kelsey (6-6360).

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. None.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 140

1. Preparer: Gerber, G.

2. Date prepared: 06/30/93

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

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

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

6. Waste stream:
Paper, cloth, wood, barrels of Santo-R wax and empty barrels.

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 1966

9. Waste stream volume:
Amount 914.6000 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):
4. Waste is from OMRE reactor. Waste from this facility is reported as PER AII on RWMIS.

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

2. Details on physical form(particularly confinement related)
Barrels disposed of were sometimes empty and sometimes full of Santo-R wax (especially 1963). Waste is approximately 75% BXC and 65% BLM.

3. Chemical form:

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:
Xylene, methachlor, trichloroethylene, and acetone were used to clean up. Asbestos is probably with piping components.

7. Comments (specify number of pertinent question):
2. Asbestos is in some boxes of waste. Santo-R wax is not hazardous per Ken Gilbert (6-8039).
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
1330-20-7 Xylene	Liquid absorbed in rags.		T 780.00000000000	LB	1960	1966	N			
79-01-6 Trichloroethylene	Liquid absorbed in rags.		T 390.00000000000	LB	1960	1966	N			
67-64-1 Acetone	Liquid absorbed in rags.		T 39.000000000000	LB	1960	1966	N			
71-55-6 1,1,1-Trichloroethane	Liquid absorbed in rags.		T 390.00000000000	LB	1960	1966	N			
1332-21-4 Asbestos	Solid.	Friable.	T 5.0000000000000	LB	1960	1966	N			
7439-92-1 Lead	Solid cask, brick and shot.		T 1200.0000000000	LB	1960	1966	N			
108-88-3 Toluene	Liquid absorbed in rags.		T 390.00000000000	LB	1960	1966	N			
7440-36-0 Antimony	Solid.	Encapsulated in source.	T 1.0000000000000	LB	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)

Xylene and methachlor usage per conversation with R. Tomblinson (6-5552). Xylene has/was probably volatized off then and by now. Santo-Wax R consisted of terphenyl and diphenyl and is not hazardous. Small quantities of xylene methachlor and trichloroethylene were used for clean up. One lead cask was sent (included in total). Also one 55-gallon barrel of xylene was disposed of at RWMC. Antimony is in neutron source on next page.

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
Be-10	Solid.	Solid.	T 37.500000000000	CI	1963	1963	N	-10%	+10%	
Co-60	Solid.	Oxides and flakes.	T 25.070000000000	CI	1960	1966	N			
Cs-137	Solid.	Oxides.	T 143.80000000000	CI	1960	1966	N			
Sr-90	Solid.	Oxides.	T 45.400000000000	CI	1960	1966	N			
Sb-124	Solid.	Solid.	T 37.500000000000	CI	1963	1963	N	-10%	+10%	
U-235	Solid.	Oxides.	T .00000736100000	CI	1963	1963	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)

MFP was converted to 76% Cs-137 and 24% Sr-90. MAP was converted to Co-60. Based upon report PR-W-79-029. The number of curies is based upon radiation reading and a conversion formula (except below). Per conversation with J. Klossner and others, during facility shutdown in 1963, a 75 curie Sb-124/Be-10 neutron source was disposed of. The U-235 was from 2 fission chambers that were disposed of.

PART E - SOURCES OF INFORMATION AND UNCERTAINTIES - PER-ORM-1H

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.)
William L. Scott 6-8189, Grant McCellan 6-7257, Norm Swanson (602)574-4441, John Klossner 6-2524, Rick Tomblison 6-5522.

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:
Sb-124/Be-10 was not identified as a neutron source.

7. Major unknowns in inventories of contaminants:
Quantities given are this best recollection of personnel involved. Many barrels of contaminated (but not hazardous) Santo-R wax was disposed of at RWMC. Some were empty. Most were approximately 75% full.

8. Key assumptions used to deal with the unknowns:
No G-M correction is needed to the best estimate for the U-235, Be-10, and Sb-124 entries. The U-235 entry is assumed to have been identified by analytical methods or weight. The Be-10 and Sb-124 were in a neutron source, whose activity is assumed to have been known by analytical means. 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.