Material Disposal Area G 33 Shafts Waste Data Fact Sheets



The 33 Shafts in MDA-G are augured vertical holes with three distinct configurations containing waste packages. Thirty two of the shafts contain waste packages from irradiated fuel examination and a single shaft contains a small reactor vessel.



33 Shafts Waste Characteristics Summary

Contents

The 33 shafts are comprised of Material Disposal Area G shafts 200–232. Remote handled transuranic (TRU) waste was placed into these shafts from 1979-1987. The waste in the 33 shafts was generated in hot cell operations at the Chemistry and Metallurgy Research (CMR) facility, except for shaft 212 which contains the reactor vessel from a small research reactor called the Los Alamos Molten Plutonium Reactor Experiment (LAMPRE).

CMR waste was generated from examination of irradiated fuels from the Liquid Metal Fast Breeder Reactor and other advancedfuel evaluation efforts, including the ROVER space propulsion program. A single waste package in shaft 232 suggests that materials from Three Mile Island also may have been examined. Generator records indicate the waste includes residual samples, spent equipment and waste materials typical of hot cell operations.

Shaft Data

An extensive review of historical documents in 2005 included waste generator records that described the waste and quantity of Pu-239, U-235, and mixed fission products. Other data sources also were examined. The content and accuracy of the data are typical for legacy waste generated from 1979-1987. The initial isotopic content of each package was estimated from radiological data coupled with material-type data, and an Oak Ridge National Laboratory computer code calculated 2009 decay levels.

RCRA Status

All wastes in the 33 shafts were emplaced before the effective date of RCRA mixed waste regulations. Therefore, the 33 shafts are not regulated as RCRA treatment, storage or disposal units. Any wastes retrieved from the shafts would be subject to the RCRA waste characterization requirements for newly-generated wastes. The 33 shafts were identified by LANL as a solid waste management unit for the purposes of RCRA corrective action. Any releases of RCRA hazardous constituents from the shafts are, therefore, subject to the corrective action requirements of the 2005 Compliance Order on Consent (Consent Order). This Consent Order does not regulate the radionuclides present in the shafts.

40 CFR 191

Waste in Shafts 224, 228, 231, and 232 was emplaced after the November 18, 1985, effective date of 40 CFR 191 Subpart B, *Environmental Standards for Disposal.* Waste in the remainder of the 33 shafts was emplaced before 1985.

Shaft Data		Shafts 200-211 and Shafts 213-223	Shaft 212	Shafts 225-227 & 229-230	Shafts 224, 228, 231, 232 *	All 33 Shafts
Shaft Configuration	A	В	С	C	A, B , and C	
Volume	- Hand	271 gallons (1.02 m ³)	75 ft3 (2.12 m ³)	39 gal (0.15 m³)	27 gal (0.10 m ³)	3.39 m ³
Weight (total pounds)	the second	16,279 **	16,000	1,137	815	34,231
Shaft Fill Dates		1979-1983	1980	1984	1985-1987	1979-1987
Properties at Disposal		NUMP/STAN		and sealing		
Total Curies		3,656	42	114	149	3,847
Reported Contact Dose of	Maximum	1,200,000	1,750	400,000	500,000	1,200,000
Waste Packages (mRem/hr)	Minimum	50,000	1,750	10,000	3,000	3,000
Estimated Properties Deca	yed to 2009			Sec. States	S. Martine	A 14 14 14 19 19 19 19 19 19 19 19 19 19 19 19 19
Total Curies		1,868	13	64	70	2,015
Plutonium-239 Equivalent Cur	ies (PE-Ci)	66	12	7.4	8.5	93.9
Calculated Contact Dose of Maximum		569,000	40	212,000	543,000	569,000
Waste Packages (mRem/hr)	Minimum	0	40	5,300	0	0
Calculated Dose of Waste Pkgs. at 1 meter (mRem/hr)	Maximum	~ 4,000	~0	~ 1,500	~ 3,800	~ 4,000
	Minimum	~0	~0	~ 40	~0	~0

* Waste in these shafts emplaced after effective date of 40 CFR 191 Subpart B

** Reported weights for packages within 3 shafts are questionable because total weights are about ten times higher than similar packages in other shafts

33 Shafts Configurations



Configuration A

Waste packages in the inner pipe of configuration A shafts typically consist of a plastic bag containing one or two 1-gallon or 2-gallon metal paint-type cans filled with waste. Some cans may also be inside a plastic bucket.

Configuration B

Shaft 212, Configuration B, contains a single waste package, a metal pipe with a welded bottom with the LAMPRE reactor vessel encased in concrete.

Configuration C

Configuration C waste packages consist of a steel can, sealed with a welded-on lid, and typically contain a plastic bucket with a one-gallon steel paint –type can inside.

33 Shafts Waste Disposal Timeline



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Material Disposal Area G, 33 Shafts

Waste Data Fact Sheets for Shafts 224, 228, 231, 232

Waste Emplaced After Effective Date of 40 CFR 191

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Material Disposal Area G, 33 Shafts Shaft 224 Waste Data Fact Sheet

Contents

Shaft 224 contains eight packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste in a one-gallon paint-type can that is inside a rigid plastic liner that is inside a 1/8" wall welded steel can. Wastes include hot-cell trash, spent-fuel sample preparation residues, cladding, tissue, and small tools. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remotehandled with the reported radiation dose at the surface of the packages at the time of generation ranging from 20,000 to 300,000 mrem/hour. The eight packages of waste were placed into Shaft 224 in December 1985.

Shaft Configuration

Construction of Shaft 224 was initiated by augering a 36-inch diameter vertical hole into the mesa top. An 1/4 inch wall inner pipe of 9-inch diameter and 9 feet in length was centered in the shaft with crushed tuff used to fill the space between the pipe and the shaft. A large metal funnel was placed in the inner pipe, and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the pipe, a latching lid with a lifting ring was placed onto the top of the pipe, and the shaft was protected by an inverted cut-down 55-gallon drum placed on top of the shaft.



RSWD * Volume **Total Curies Total Curies** Radionuclides PE-Ci (gallons) Decayed to 2009 at Disposal Number S852326 Pu-239, U-235, MFP 4.00 2.19 0.0062 1 S852328 Pu-239, U-235, MFP 1 2.00 1.100.0062 S852332 Pu-239, U-235, MFP 4.00 2.19 0.0062 Pu-239, U-235, MFP S852804 1 3.00 1.73 0.204 S855064 1 Pu-239, U-235, MFP 4.02 2.30 0.223 S855065 Pu-239, U-235, MFP 4.42 2.52 0.223 S855066 Pu-239, U-235, MFP 1.50 0.83 0.0062 1 S855068 1 Pu-239, U-235, MFP 1.50 0.83 0.0062 TOTALS for Pu-239, U-235, MFP 24.47 13.68 0.68 Shaft 224

Waste Package Data Summary

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Location in Shaft Field



Shaft 224 Configuration

Shaft 224 Totals

Total Number of Waste Packages	8			
Total Gross Weight (pounds)	240			
Total Pu-239 (grams)	11			
Total U-235 (grams)	40.5			
Total Mixed Fission Products at disposal (Ci)	23.8			
Dates of Disposal	12/30/1985 to	0 12/30/1985		
Radiation at Surface of Waste Package (mR/hr)	20,000 to 300,000 at disposal	11,000 to 163,000 decayed to 2009		
Radiation at One Meter from Surface of Waste Package (mR/hr)	500 to 4,200 at disposal	80 to 1,150 * decayed to 2009		

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
				A AX	Pu-239	1.00E-01	g	300,000	
S852326	12/30/1985	30	Cell #11 waste plastic	300 R/hr @ cont steel	U-235	4.00E-01	g		4,000
				Can #30	MFP	4.00E+00	Ci		
1.4					Pu-239	1.00E-01	g		1000
S852328	12/30/1985	30	Cell #11 waste plastic	100 R/hr @ cont steel	U-235	4.00E-01	g	100,000	2,000
			call #4037	Call #01	MFP	2.00E+00	Ci		
131	Sure VI			The second	Pu-239	1.00E-01	g		
S852332 12/30/1985	30	Cell #13 waste plastic	300 R/hr @ cont steel	U-235	4.00E-01	g	300,000	4,000	
			cull #4072		MFP	4.00E+00	Ci		
ALV POR	S852804 12/30/1985 30		30 Cell 14 trash can 3660 fuel inside	Steel can 67100 R contact	Pu-239	3.30E+00	g	100,000	2,800
S852804		30			U-235	8.70E+00	g		
					MFP	2.80E+00	Ci		
	ALC: NO			27.00	Pu-239	3.60E+00	g	100,000	3,300
S855064	12/30/1985	/30/1985 30 Cell 14 trash can 366	Cell 14 trash can 3661	Steel can 63100 R/hr contact	U-235	1.49E+01	g		
			ruermside		MFP	3.80E+00	Ci		
	and the state		and the second second		Pu-239	3.60E+00	g		
S855065	12/30/1985	30	Cell 14 trash can 3662	Steel can 66300 R/hr	U-235	1.49E+01	g	300,000	4,200
			laerinsiae	contact	MFP	4.20E+00	Ci		
AN AN	Colorado de Colorado				Pu-239	1.00E-01	g		
S855066	S855066 12/30/1985 30	30	Cell 14 trash can 3663	Steel can 65	U-235	4.00E-01	g	70,000	1,500
			trashoniy		MFP	1.50E+00	Ci		
C. F. J.S.					Pu-239	1.00E-01	g		
S855068	12/30/1985	2/30/1985 30 Cell 14 trash can 3664 fuel inside	Steel can 64	U-235	4.00E-01	g	20,000	500	
COMPANY CONTRACT			ruei inside		MFP	1.50E+00	Ci		

Material Disposal Area G, 33 Shafts Shaft 228 Waste Data Fact Sheet

Contents

Shaft 228 contains eight packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste in a one-gallon paint-type can that is inside a rigid plastic liner that is inside a 1/8" wall welded steel can. Wastes include hot-cell trash, spent-fuel sample preparation residues, cladding, tissue, and small tools. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remotehandled with the reported radiation dose at the surface of the packages at the time of generation ranging from 9,000 to 200,000 mrem/hour. The eight packages of waste were placed into Shaft 228 in December 1987.

Shaft Configuration

Construction of Shaft 228 was initiated by augering a 36-inch diameter vertical hole into the mesa top. An 1/4 inch wall inner pipe of 9-inch diameter and 9 feet in length was centered in the shaft with crushed tuff used to fill the space between the pipe and the shaft. A large metal funnel was placed in the inner pipe, and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the pipe, a latching lid with a lifting ring was placed onto the top of the pipe, and the shaft was protected by an inverted cut-down 55-gallon drum placed on top of the shaft.

Steel Inverted Latching Steel Lid and Drum Lifting Ring Welded Steel Can with Plastic Liner & One-Gallon Can Inside Steel Pipe No Bottom Plate

Shaft 228 Configuration

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S874123	1	Pu-239, U-235, MFP	0.16	0.09	0.0062
S874124	1	Pu-239, U-235, MFP	1.50	0.86	0.0062
S874125	1	Pu-239, U-235, MFP	0.16	0.09	0.0062
S874126	1	Pu-239, U-235, MFP	2.50	1.44	0.0062
S874127	1	Pu-239, U-235, MFP	1.50	0.86	0.0062
S874128	1	Pu-239, U-235, MFP	1.50	0.86	0.0062
S874129	1	Pu-239, U-235, MFP	1.50	0.86	0.0062
S874130	1	Pu-239, U-235, MFP	2.00	1.15	0.0062
TOTALS for Shaft 228	8	Pu-239, U-235, MFP	10.84	6.23	0.05

Waste Package Data Summary

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.





Shaft 228 Totals

Total Number of Waste Packages	8				
Total Gross Weight (pounds)	235				
Total Pu-239 (grams)	0.8				
Total U-235 (grams)	3.2				
Total Mixed Fission Products at disposal (Ci)	10.8				
Dates of Disposal	12/23/1987 to	0 12/23/1987			
Radiation at Surface of Waste Package (mR/hr)	9,000 to 200,000 at disposal	0 to 114,000 decayed to 2009			
Radiation at One Meter from Surface of Waste Package (mR/hr)	120 to 2,500 at disposal	0 to 800 * decayed to 2009			

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
					Pu-239	1.00E-01	g		
S874123	12/23/1987	30	Cell 14 trash can 4032	Steel can 54, was	U-235	4.00E-01	g	9,000	150
		R. C. M	V PARK	13000 032002	MFP	1.50E-01	Ci	-100	
				can 55, 20 R/hr	Pu-239	1.00E-01	g		
S874124	12/23/1987	25	Cell 13 waste plastic	contact, was RSWD	U-235	4.00E-01	g	20,000	
/ 11.	24 31		call #4095 Steel	#852325	MFP	1.50E+00	Ci		
	See weeks		and the second second	1 1 1 24	Pu-239	1.00E-01	g	V HA	
S874125 12/23/1987 3	30	Cell 14 waste can 4164, Steel can 62	10 R/hr contact, was	U-235	4.00E-01	g	10,000	120	
NY 23			Steer can oz	N3WD #032011	MFP	1.50E-01	Ci		MONTH!
		1. S. S. B. B.		852323, Steel Can #57, 200 R/hr @ cont.	Pu-239	1.00E-01	g	200,000	2,500
S874126	12/23/1987	30	Cell #13 waste plastic		U-235	4.00E-01	g		
1915-1		1 all	can #4086, see RSWD #		MFP	2.50E+00	Ci		
					Pu-239	1.00E-01	g		
S874127	12/23/1987	30	Cell #13 waste plastic	852324, Steel Can 56	U-235	4.00E-01	g		
			call #4094, was K3wD#		MFP	1.50E+00	Ci		
					Pu-239	1.00E-01	g		
S874128	12/23/1987	30	Cell #11 waste plastic	Steel can #60 See	U-235	4.00E-01	g		
			Call #4092	N3WD #652550	MFP	1.50E+00	Ci		
					Pu-239	1.00E-01	g		
S874129 12/23/1987 30	30	Cell #11 waste plastic	Steel can #59, see	U-235	4.00E-01	g	60,000	1,500	
		Call #4065	RSWD #852329	MFP	1.50E+00	Ci		773.	
Mar Par					Pu-239	1.00E-01	g		
S874130	12/23/1987	30	Cell #14 trash can	Steel can #53, see	U-235	4.00E-01	g	80,000	2,000
			#4053 RSW	KSWD #852803	MFP	2.00E+00	Ci		

Material Disposal Area G, 33 Shafts Shaft 231 Waste Data Fact Sheet

Contents

Shaft 231 contains eight packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste in a one-gallon paint-type can that is inside a rigid plastic liner that is inside a 1/8" wall welded steel can. Wastes include hot-cell trash, spent-fuel sample preparation residues, cladding, tissue, and small tools. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remotehandled with the reported radiation dose at the surface of the packages at the time of generation ranging from 3,000 to 1,000,000 mrem/hour. The eight packages of waste were placed into Shaft 231 in December 1985.

Shaft Configuration

Construction of Shaft 231 was initiated by augering a 36-inch diameter vertical hole into the mesa top. An 1/4 inch wall inner pipe of 9-inch diameter and 9 feet in length was centered in the shaft with crushed tuff used to fill the space between the pipe and the shaft. A large metal funnel was placed in the inner pipe, and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the pipe, a latching lid with a lifting ring was placed onto the top of the pipe, and the shaft was protected by an inverted cut-down 55-gallon drum placed on top of the shaft.

Shaft 231



RSWD [*] Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S855046	1	Pu-239, U-235, MFP	3.00	1.64	0.0062
S855047	1	Pu-239, U-235, MFP	3.00	1.64	0.0062
S855048	1	Pu-239, U-235, MFP	0.90	0.49	0
S855049	1	Pu-239, U-235, MFP	0.40	0.22	0
S856015	1	Pu-239, U-235, MFP	2.10	1.15	0.0062
S856016	1	Pu-239, U-235, MFP	6.00	3.28	0.0062
S856017	1	Pu-239, U-235, MFP	6.00	3.28	0.0062
S856018	1	Pu-239, U-235, MFP	1.01	0.55	0.0062
TOTALS for Shaft 231	8	Pu-239, U-235, MFP	22.42	12.27	0.04

Waste Package Data Summary

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Location in Shaft Field

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Shaft 231 Totals

Total Number of Waste Packages	8	NR /		
Total Gross Weight (pounds)	235			
Total Pu-239 (grams)	0.6			
Total U-235 (grams)	26.1			
Total Mixed Fission Products at disposal (Ci)	22.4			
Dates of Disposal	12/30/1985 to	12/30/1985		
Radiation at Surface of Waste Package (mR/hr)	3,000 to 1,000,000 at disposal	1,600 to 543,000 decayed to 2009		
Radiation at One Meter from Surface of Waste Package (mR/hr)	40 to 30,000 at disposal	10 to 3,840 decayed to 2009		

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
					Pu-239	1.00E-01	g		N. 25
S855046	12/30/1985	30	Plastic can 3813,	Steel can 72, 1000+	U-235	4.00E-01	g	1,000,000	30,000
	- The		vacuum cicaner motor	iyini at contact	MFP	3.00E+00	Ci	-200	1996
					Pu-239	1.00E-01	g		
S855047	12/30/1985	25	Plastic can 4114, manipulator boot	Steel can 73, 1000+ B/br at contact	U-235	3.00E-01	g	1,000,000	6,500
/ 11.				N/III at contact	MFP	3.00E+00	Ci	1.9570.05	
1					Pu-239			Sec.	
S855048 12/30/1985	30	Cell 10 trash, plastic	Steel can 74, 100 R/hr	U-235	1.50E+01	g	100,000	900	
			cull 5055	N II - IV	MFP	9.00E-01	Ci		
JET I		1. 19 B	Direction core 20051 D.D.		Pu-239				
S855049 12/30/1985	30	Robinson fuel	contact	U-235	9.00E+00	g	3,000	40	
dian's		100	Robinson ruer	Contact	MFP	4.00E-01	Ci	19 2 AL	"With
					Pu-239	1.00E-01	g	1,000,000	22,000
S856015	12/30/1985	30	Plastic can 3649	Steel can 68, 1000+ at contact	U-235	4.00E-01	g		
	and the second				MFP	2.10E+00	Ci		
9 1 8 8					Pu-239	1.00E-01	g	KAT I	
S856016	12/30/1985	30	Cells 2/4 waste plastic	Steel can 69, 20 R/hr at	U-235	3.00E-01	g	20,000	600
Start 1				contact	MFP	6.00E+00	Ci		1000
					Pu-239	1.00E-01	g		
S856017 12/30/1985 30	30	Plastic can 3626, Cell 9	Steel can 71, 500 Rhr at	U-235	3.00E-01	g_	71,500	6,000	
		uasii	contact	MFP	6.00E+00	Ci			
C AND					Pu-239	1.00E-01	g		
S856018	12/30/1985	12/30/1985 30	Plastic # 3625, Cell 9	Steel can No 70, 350	U-235	4.00E-0 <u>1</u>	g	350,000	7,000
			trash	Rhr at contact	MFP	1.00E+00	Ci		7,000

Material Disposal Area G, 33 Shafts Shaft 232 Waste Data Fact Sheet

Contents

Shaft 232 contains three packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste in a one-gallon paint-type can that is inside a rigid plastic liner that is inside a 1/8" wall welded steel can. Wastes include hot-cell trash, spent-fuel sample preparation residues, cladding, tissue, and small tools. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remotehandled with the reported radiation dose at the surface of the packages at the time of generation ranging from 6,500 to 1,000,000 mrem/hour. The three packages of waste were placed into Shaft 232 in December 1987.

Shaft Configuration

Construction of Shaft 232 was initiated by augering a 36-inch diameter vertical hole into the mesa top. An 1/4 inch wall inner pipe of 9-inch diameter and 9 feet in length was centered in the shaft with crushed tuff used to fill the space between the pipe and the shaft. A large metal funnel was placed in the inner pipe, and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the pipe, a latching lid with a lifting ring was placed onto the top of the pipe, and the shaft was protected by an inverted cut-down 55-gallon drum placed on top of the shaft.



Location in Shaft Field



Waste Package Data Summary

RSWD [*] Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S874132	1	Pu-239, U-235, MFP	0.000164	0.00017	0
S874133	1	Pu-239, U-235, MFP	88.26	36.9	7.54
S874134	1	Pu-239, U-235, MFP	2.72	1.09	0.15
TOTALS for Shaft 232	3	Pu-239, U-235, MFP	90.98	37.95	7.69

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 232 Totals

Total Number of Waste Packages	3				
Total Gross Weight (pounds)	10	95			
Total Pu-239 (grams)	Q	NALASSI			
Total Pu-53 (grams)	1	6			
Total Pu-55 (grams)	2	7			
Total Pu-56 (grams)	1:	2			
Total Pu-57 (grams)	1	4			
Total U-21 (grams)	48				
Total U-25 (grams)	C				
Total U-235 (grams)	13	5			
Total U-238 (grams)	60	.2			
Total Mixed Fission Products at disposal (Ci)					
Dates of Disposal	12/23/1987 to	o 12/23/1987			
Radiation at Surface of Waste Package (mR/hr)	6,500 to 1,000,000 0 to 14,000 at disposal decayed to 2009				
Radiation at One Meter from Surface of Waste Package (mR/hr)	Not Available 0 to 100 * at disposal decayed to 20				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
			7-1-1-0-0-0		Pu-239	0.00E+00	g		
S874132	12/23/1987	35	3Mile Island waste can	CWSR LA86110050600	U-25	7.00E+00	g	6,500	
ALL BOARD		77 - Was off a	A Press	MFP	0.00E+00	Ci		A.J. L.,	
Strate -			Cell 9 waste fuel can 79 - was on a	CWSR LA86110050601, >1000 R/hr	Pu-53	1.60E+01	g	1,000,000	No. 2 C
No. 7 Alton					Pu-55	2.70E+01	g		
C074122	12/22/1007				Pu-56	1.20E+01	g		
5874133	12/23/198/	35			Pu-57	1.30E+01	g		
	and the second				U-235	1.35E+02	g		
1 Call	Carrier and	100	T Provense of		U-238	6.02E+01	g		
				CWSR LA86110050648	Pu-57	1.00E+00	g		100
S874134	12/23/1987	35	INC-11 Waste steel can		U-21	4.80E+01	g	29,000	
			78 - Was off a		MFP		la se de		The Arrive

Material Disposal Area G, 33 Shafts

Waste Data Fact Sheets for Shafts 200-223, 225-227, & 229-230

Waste Emplaced Before Effective Date of 40 CFR 191

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Material Disposal Area G, 33 Shafts Shaft 200 Waste Data Fact Sheet

Contents

Shaft 200 contains six packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside two one-gallon paint-type metal cans and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 60,000 to 1,150,000 mrem/hour. The six packages of waste were placed into Shaft 200 in April 1981.

Shaft Configuration

Construction of Shaft 200 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 200 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Location in Shaft Field

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S811387	2	Pu-239, U-235, MFP	3.75	2.49	1.25
S811390	2	Pu-239, U-235, MFP	6.62	3.60	0.62
S811396	2	Pu-239, U-235, MFP	0.60	0.30	0.01
S811398	2	Pu-239, U-235, MFP	0.85	0.55	0.25
S811471	2	Pu-239, U-235, MFP	3.47	2.12	0.77
S811473	2	Pu-239, U-235, MFP	20.3	10.3	0.31
TOTALS for Shaft 200	12	Pu-239, U-235, MFP	35.6	19.3	3.21

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Waste Package Data Summary

Shaft 200 Totals

Total Number of Waste Packages	6					
Total Gross Weight (pounds)	93	93				
Total Pu-239 (grams)	51.	8				
Total U-235 (grams)	otal U-235 (grams) 132.98					
Total Mixed Fission Products (Ci)	32.4					
Dates of Disposal	4/14/1981 to	4/14/1981				
Radiation at Surface of Waste Package (mR/hr)	60,000 to 1,150,000 at disposal	30,000 to 569,000 decayed to 2009				
Radiation at One Meter from Surface of Waste Package (mR/hr)	600 to 20,000 200 to 4,000 * at disposal decayed to 2009					

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
		o/fiint			Pu-239	2.02E+01	g		1
S811387	4/14/1981	16	Cell 14 fuel can #3021 #3008 Cell 13	140 R at contact	U-235	8.08E+00	g	140,000	2,500
			#3000 CC# 13		MFP	2.50E+00	Ci	1 1 2 3	
7.1	- V-T		Coll 12 grinding papers	the Aller	Pu-239	1.00E-01	g	N.A.	
S811390 4/14/1981 16	16	kimwipes, plastic	kimwipes, plastic	U-235	3.80E+01	g	60,000	600	
		A REAL		MFP	6.00E+00	Ci			
A JANA	S811396 4/14/1981 16 Cell 13 grinding pape	the second states	, Plastic cans 3061, 3053	Pu-239	1.00E-01	g	60,000	600	
S811396		Cell 13 grinding papers,		U-235	4.00E-01	g			
29.4			Rinnipes) plastic	-116/11	MFP	6.00E-01	Ci		
	ALC: NO		Constant and a little	12 200 1	Pu-239	4.00E+00	g		600
S811398	4/14/1981	20	Cell 13 catch & drain	120,000 mR/hr surface, cans 3051 & 3052	U-235	1.60E+01	g	120,000	
			pans) kinwipes		MFP	6.00E-01	Ci		
					Pu-239	1.25E+01	g		
S811471	4/14/1981	9	2846	700 R/hr at contact	U-235	2.15E+01	g	700,000	9,000
9 1 8 3			2840		MFP	2.70E+00	Ci		
			Cell 14 trash - fuel cans	1150 R/hr at contact –	Pu-239	5.00E+00	g	TO MA	20,000
\$811473	4/14/1981	4/14/1981 16	#2877 - 2863		U-235	4.90E+01	g	1,150,000	
	11392				MFP	2.00E+01	Ci		

Material Disposal Area G, 33 Shafts Shaft 201 Waste Data Fact Sheet

Contents

Shaft 201 contains seven packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with six of the packages containing waste placed inside two one-gallon paint-type metal cans and placed into a plastic bag. One of the seven packages consists of a single-one gallon metal can placed into a plastic bag. Some paint-type cans were placed into a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 15,000 to 1,200,000 mrem/hour. The seven packages of waste were placed into Shaft 201 in June 1979.

Shaft Configuration

Construction of Shaft 201 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 201 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Waste Package Data Summary

RSWD * Number	Volume (gallons)	Radionuclides	Total CuriesTotal Curiesat DisposalDecayed to 2009		PE-Ci
\$791484	1	Pu-239, U-235, MFP	4.18	2.08	0.19
S794215	2	Pu-239, U-235, MFP	11.03	5.25	0.03
\$794216	2	Pu-239, U-235, MFP	8.14	3.93	0.14
S794218	2	Pu-239, U-235, MFP	1.15	0.63	0.16
S794219	2	Pu-239, U-235, MFP	1.39	0.71	0.09
\$794220	2	Pu-239, U-235, MFP	34.20	18.40	4.21
S794221	2	Pu-239, U-235, MFP	43.66	25.30	8.67
TOTALS for Shaft 201	13	Pu-239, U-235, MFP	103.76	56.32	13.49

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 201 Totals at Disposal

Total Number of Waste Packages						
Total Gross Weight (pounds)	66 (weight for one package not available					
Total Pu-239 (grams)	218					
Total U-235 (grams)	544					
Total Mixed Fission Products (Ci)	90.3					
Dates of Disposal	6/29/1979 to	6/29/1979				
Radiation at Surface of Waste Package (mR/hr)	15,000 to 1,200,000 7,100 to 567,000 at disposal decayed to 2009					
Radiation at One Meter from Surface of Waste Package (mR/hr)	1,000 to 85,000 at disposal	50 to 4,000 * decayed to 2009				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
	State of the		Coll #12 one fuel can	Tin can in plactic	Pu-239	3.00E+00	g		1
S791484	6/29/1979	NA	#2171	container	U-235	1.00E+00	g	17,500	4,000
	11 11			011117SC / 7.5	MFP	4.00E+00	Ci	2 A. B	
7AA^	11-1		Coll 12 trash & fuel	the fait	Pu-239	5.50E-01	g		
S794215 6/29/1979 15	15	#1854, 1851	266,000 mr at contact	U-235	2.00E+00	g	266,000	11,000	
				MFP	1.10E+01	Ci			
And Mary		Cell 12 trash and fuel	261000 mr/hr at	Pu-239	2.25E+00	g	261,000	85,000	
S794216 6/29/1979 15	15			U-235	9.00E+00	g			
	Call#1758 & 1555	contact, cans in proags	MFP	8.00E+00	Ci				
				tin cans in plastic cans	Pu-239	2.50E+00	g	15,000	1,000
S794218	6/29/1979	10	Cell 14 fuel can no.		U-235	1.00E+01	g		
			2002 & 2003	in p-bags	MFP	1.00E+00	Ci		
		X - 4			Pu-239	1.50E+00	g		
S794219	6/29/1979	12	Cell 14 fuel & trash can	Tin cans in plastic cans	U-235	5.00E+00	g	27,000	1,300
	A lat		no. 2004 & 1992	in p-bags	MFP	1.30E+00	Ci		
and a	24200				Pu-239	6.80E+01	g		
S794220 6/2 <u>9/1979</u>	6/29/1979	6	Hot trash met samples	1200 R/hr at contact	U-235	1.47E+02	g	1,200,000	30,000
111	cans land 4A	Constant Providence	MFP	3.00E+01	Ci				
1 all	E Start La				Pu-239	1.40E+02	g	al States	
S794221	6/29/1979	8	Fuel samples from cells	1050 R/hr at contact	U-235	3.70E+02	g	1,050,000	35,000
-11-16			13, 15, cans 2 & 3A		MFP	3.50E+01	Ci		u harben

Material Disposal Area G, 33 Shafts Shaft 202 Waste Data Fact Sheet

Contents

Shaft 202 contains six packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside two one-gallon paint-type metal cans and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled because of the source of the waste and the quantity of MFP (radiation dose at the surface of the packages placed into Shaft 202 was not reported.) The six packages of waste were placed into Shaft 202 in April 1980.

Shaft Configuration

Construction of Shaft 202 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 202 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.



Location in Shaft Field



Waste Package Data Summary

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S803548 **	12	Pu-239, U-235, MFP	219	106	4.05
TOTALS for Shaft 202	12	Pu-239, U-235, MFP	219	106	4.05

* RSWD = Radioactive Solid Waste Disposal record

** Six RSWD forms were transferred to one form; original forms are not available

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 202 Totals

Total Number of Waste Packages	6				
Total Gross Weight (pounds)	4,60	00 *			
Total Pu-239 (grams)	65	.4			
Total U-235 (grams)	223				
Total Mixed Fission Products (Ci)	215				
Dates of Disposal	4/30/1980 to	o 4/30/1980			
Radiation at Surface of Waste Package (mR/hr)	kage (mR/hr) Not Available				
Radiation at One Meter from Surface of Waste Package (mR/hr)	Not Available	Not Available			

* This weight is questionable because other characteristics of the six packages in Shaft 202 are similar to packages composed of two one-gallon cans in other shafts. Other shafts with similar packages are reported to have total package weights of about 75 to 130 pounds. The original six RSWD forms were transferred to one RSWD form at some time and an error may have occurred in transcription.

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
S803548	4/30/1980	4/30/1980 4,600 Hot c		thru 1/10/80	Pu-239	6.54E+01	g		
			Hot cell waste CMB1 - CMB14 from 9/15/79		U-235	2.23E+02	g	Not Available	Not Available
		S. Contraction	and the second			ale all -	MFP	2.15E+02	Ci

Material Disposal Area G, 33 Shafts Shaft 203 Waste Data Fact Sheet

Contents

Shaft 203 contains six packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside two one-gallon paint-type metal cans and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled remote-handled because of the source of the waste and the quantity of MFP (radiation dose at the surface of the packages placed into Shaft 203 was not reported). The six packages of waste were placed into Shaft 203 in April 1980.

Shaft Configuration

Construction of Shaft 203 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 203 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.



Location in Shaft Field



Waste Package Data Summary

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S803547 **	12	Pu-239, U-235, MFP	111.05	53.9	2.32
TOTALS for Shaft 203	12	Pu-239, U-235, MFP	111.05	53.9	2.32

* RSWD = Radioactive Solid Waste Disposal record

** Six RSWD forms were transferred to one form; original forms are not available

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Shaft 203 Totals

Total Number of Waste Packages	6				
Total Gross Weight (pounds)	4,60	0 *			
Total Pu-239 (grams)	37	.5			
Total U-235 (grams)	127				
Total Mixed Fission Products (Ci)	109				
Dates of Disposal	4/30/1980 to	9 4/30/1980			
Radiation at Surface of Waste Package (mR/hr)	Not Available	Not Available			
Radiation at One Meter from Surface of Waste Package (mR/hr)	Not Available	Not Available			

* This weight is questionable because other characteristics of the six packages in Shaft 203 are similar to packages composed of two one-gallon cans in other shafts. Other shafts with similar packages are reported to have total package weights of about 75 to 130 pounds. The original six RSWD forms were transferred to one RSWD form at some time and an error may have occurred in transcription.

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
\$803547	3 - 94 1	4/30/1980 4,600 Hot ce		78 thru 8/15/79	Pu-239	3.75E+01	g		
	4/30/1980		Hot cell waste CMB1 - CMB14 from 12/13/		U-235	1.27E+02	g	Not Available	Not Available
	S. C.	S. Marth			the file of	MFP	1.09E+02	Ci	

Material Disposal Area G, 33 Shafts Shaft 204 Waste Data Fact Sheet

Contents

Shaft 204 contains five packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside two one-gallon paint-type metal cans and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 50,000 to 140,000 mrem/hour. The five packages of waste were placed into Shaft 204 in June 1979.

Shaft Configuration

Construction of Shaft 204 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 204 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Location in Shaft Field

RSWD [*] Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S791472	2	Pu-239, U-235, MFP	10.61	5.09	0.11
S791478	2	Pu-239, U-235, MFP	2.17	2.17	2.17
S791483	2	Pu-239, U-235, MFP	1.59	0.80	0.09
S794222	2	Pu-239, U-235, MFP	0.29	0.29	0.29
S794223	2	Pu-239, U-235, MFP	21.01	10.5	1.02
TOTALS for Shaft 204	10	Pu-239, U-235, MFP	35.67	18.87	3.68

Waste Package Data Summary

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 204 Configuration

Shaft 204 Totals

Total Number of Waste Packages	5				
Total Gross Weight (pounds)	86				
Total Pu-239 (grams)	59.5				
Total U-235 (grams)	193.	55			
Total Mixed Fission Products (Ci)	30.5				
Dates of Disposal	6/29/1979 to	6/29/1979			
Radiation at Surface of Waste Package (mR/hr)	50,000 to 1,000,000+ at disposal	0 to 51,000 decayed to 2009			
Radiation at One Meter from Surface of Waste Package (mR/hr)	10,500 to 140,000 at disposal	0 to 360 * decayed to 2009			

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (lb)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
	and the second second second		Coll 12 trach & fuel	108 000 mB	Pu-239	1.75E+00	g		- 26 .2
S791472	6/29/1979	20	cans 2127 & 2150	at contact	U-235	5.25E+00	g	108,000	10,500
	Star History				MFP	1.05E+01	Ci	<u> </u>	
S791478 6/29/1979 15		Cell 9 hot trash cans 2015, 2117, 1000+ Rhr	at contact 140,000 mR/hr at meter	Pu-239	3.50E+01	g	1,000,000+	140,000	
	15			U-235	1.21E+02	g			
				MFP		Ci			
Sec. Road	and the second second		Contraction of the	tin cans in plastic cans	Pu-239	1.50E+00	g	50,000	15,000
S791483	6/29/1979	15	Cell 12 fuel cans 2095		U-235	4.50E+00	g		
			C 2107		MFP	1.5E+???	Ci		
			Carl and a state	4 2 4 4	Pu-239	4.75E+00	g		
S794222	6/29/1979	16	Cell 12 fuel cans #1790 & 1815	100,000 R at 1 meter	U-235	1.90E+01	g		100,000
		G 1015		MFP	2573	Ci	The he		
				in plastic bag, can #s	Pu-239	1.65E+01	g	LFF	20,400
\$794223	6/29/1979	5/29/1979 20	Cell 9 trash in 1 gal.		U-235	4.38E+01	g		
aispa		1700 & 1015	MFP	2.00E+01	Ci				

Material Disposal Area G, 33 Shafts Shaft 205 Waste Data Fact Sheet

Contents

Shaft 205 contains seven packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside two one-gallon paint-type metal cans and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 160,000 to 1,000,000 mrem/hour. The seven packages of waste were placed into Shaft 205 in December 1980.

Shaft Configuration

Construction of Shaft 205 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 205 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and the pipes and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Waste Package Data Summary

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S801483	2	Pu-239, U-235, MFP	135.01	65.5	0.01
S801485	2	Pu-239, U-235, MFP	171.38	84.2	1.55
S802244	2	Pu-239, U-235, MFP	4.13	2.02	0.03
S802246	2	Pu-239, U-235, MFP	2.49	1.76	1.08
S802247	2	Pu-239, U-235, MFP	1.51	0.89	0.31
S802259	2	Pu-239, U-235, MFP	35.72	17.7	0.74
S802287	2	Pu-239, U-235, MFP	523.19	256	3.53
TOTALS for Shaft 205	14	Pu-239, U-235, MFP	873.44	428.19	7.25

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 205 Totals

Total Number of Waste Packages	7				
Total Gross Weight (pounds)	132				
Total Pu-239 (grams)	117	.1			
Total U-235 (grams)	386	1			
Total Mixed Fission Products (Ci)	866.7				
Dates of Disposal	12/1/1980 to	12/1/1980			
Radiation at Surface of Waste Package (mR/hr)	160,000 to 1,000,000 at disposal	77,000 to 483,000 decayed to 2009			
Radiation at One Meter from Surface of Waste Package (mR/hr)	12,000 to 520,000 at disposal	550 to 3,400 * decayed to 2009			

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
	I. C. Starting and		Coll Ober 1 2075		Pu-239	1.00E-01	g		284
S801483	12/1/1980	20	2926	+1000 R/nr contact 135 R/hr at meter	U-235	1.00E-01	g	1,000,000	135,000
					MFP	1.35E+02	Ci		
14			Cell 9 trash can 2928,	+1000R/hr contact	Pu-239	2.50E+01	g	N.A.	
S801485	12/1/1980	30	2930	170 R/hr at meter	U-235	9.50E+01	g	1,000,000	170,000
		- the had		MFP	1.70E+02	Ci			
S802244 12/1/1980 15		the second second	14/14	Pu-239	5.00E-01	g			
	12/1/1980	15	Cell 14 fuel & trash cans	160000 mR/hr at	U-235	2.00E+01	g	160,000	41,000
	124.1	2574 & 2517	contact	MFP	4.10E+00	Ci			
	ALC: NO			surface reading 1,000,000 mR/hr	Pu-239	1.75E+01	g	1,000,000	14,000
S802246	12/1/1980	16	Cell 14 fuel can # 2604 & 2584		U-235	7.00E+01	g		
17.15			2304		MFP	1.40E+00	Ci		
					Pu-239	5.00E+00	g		
S802247	12/1/1980	16	Cell 14 fuel & trash can #	surface reading	U-235	2.10E+01	g	615,000	12,000
		100	2003 & 2002	013000 mitym	MFP	1.20E+00	g		
					Pu-239	1.20E+01	g		
S802259 12/1/1980	12/1/1980	15	Cell waste cans 2642, 2669, Cell 9	1000 R hr plus	U-235	3.90E+01	g	1,000,000	35,000
		2003, ccm 3	bottom entry	MFP	3.50E+01	Ci			
1131				contact 520 Rhr at one meter	Pu-239	5.70E+01	g	1,000,000	100
S802287	12/1/1980	20	D Hot trash cell 9, cans 2785, 2646 +1000 Rhr		U-235	2.36E+02	g		520,000
A BAN					MFP	5.20E+02	Ci		

Material Disposal Area G, 33 Shafts Shaft 206 Waste Data Fact Sheet

Contents

Shaft 206 contains seven packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside two one-gallon paint-type metal cans and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 1,000,000 to 1,010,000 mrem/hour. The six packages of waste were placed into Shaft 206 in April 1981.

Shaft Configuration

Construction of Shaft 206 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 206 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes, and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Location in Shaft Field

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S812291	2	Pu-239, U-235, MFP	47.60	27.5	7.62
S812292	2	Pu-239, U-235, MFP	28.19	17.1	6.2
S812293	2	Pu-239, U-235, MFP	100.32	50.2	0.43
S812297	2	Pu-239, U-235, MFP	101.24	51.2	1.36
S812298	2	Pu-239, U-235, MFP	101.24	51.2	1.36
S812302	2	Pu-239, U-235, MFP	8.69	4.58	0.50
S812303	2	Pu-239, U-235	0.50	0.50	0.50
TOTALS for Shaft 206	14	Pu-239, U-235, MFP	387.79	202.33	17.97

Waste Package Data Summary

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 206 Configuration

Shaft 206 Totals

Total Number of Waste Packages	he Arak /				
Total Gross Weight (pounds)	94 (weight for one package unavailable)				
Total Pu-239 (grams)	282.503				
Total U-235 (grams)	790				
Total Mixed Fission Products (Ci)	370.2				
Dates of Disposal	4/1/1981 to 4	/14/1981			
Radiation at Surface of Waste Package (mR/hr)	1,000,000 to 1,010,000 + at disposal	0 to 108,000 decayed to 2009			
Radiation at One Meter from Surface of Waste Package (mR/hr)	22,000 to 100,000 at disposal	0 to 3,500 * decayed to 2009			

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)	
	and the second		Cell 13, 15 met	Detters only 1000	Pu-239	1.23E+02	g			
S812291	4/1/1981	10	samples, cans 2805,	Bottom entry 1000+ R/hr @ contact	U-235	3.21E+02	g	1,000,000	40,000	
			2806		MFP	4.00E+01	Ci	1 IN B		
AA			Cell 13, 15 met samples cans 2801, 2804	Bottom ontry 1000+	Pu-239	1.00E+02	g			
S812292	4/1/1981	10		R/hr @ contact	U-235	2.69E+02	g	1,000,000	22,000	
		and the second second		MFP	2.20E+01	Ci	X			
			20 Cell waste cans 2454, 2812, cell 14	1000 Rhr contact, 108 Rhr meter	Pu-239	7.00E+00	g	1,000,000	108,000	
S812293	4/1/1981	20			U-235	2.80E+01	g			
A State					MFP	1.00E+02	Ci			
	ALL ALLA		C. C	12001	Pu-239	2.20E+01	g	1,000,000	100,000	
S812297	4/14/1981	20	Cell 14 trash & fuel #2829_2807	+1000 Rhr contact 100 Rhr at meter	U-235	8.6E+01	g			
	Constant of the second		#2023, 2007		MFP	1.00E+02	Ci			
		ALX A			Pu-239	2.20E+01	g			
S812298	4/1/1981	20	Cell #14 trash & fuel #2826 & 2827	+1000 Rhr at contact	U-235	8.60E+01	g	1,000,000	100,000	
- And			#2020 Q 2027		MFP	1.00E+02	Ci			
					Pu-239	8.00E+00	g	1. 1.1		
S812302 4/1/1981	14	Cell 13 and 9 Hot Trash	1010+ R/hr @ contact	U-235	2.30E-05	g	1,010,000	82,000		
a de ser	and the state of the		Cans 2883, 2865		MFP	8.20E+00	Ci			
6912202			Pu-239	5.03E-01	Ci		TOBUS			
3812303	4/1/1981	NA			NA	U-235	5.04E-05	Ci		

Material Disposal Area G, 33 Shafts Shaft 207 Waste Data Fact Sheet

Contents

Shaft 207 contains five packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with four of the packages containing waste placed inside two one-gallon paint-type metal cans and placed into a plastic bag. One of the five packages contains waste placed inside three one-gallon metal cans placed into a plastic bag. Some paint-type cans were placed into a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 3,600 to 290,000 mrem/hour. The five packages of waste were placed into Shaft 207 in May 1981.

Shaft Configuration

Construction of Shaft 207 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 207 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Location in Shaft Field

RSWD [*] Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S811397	2	Pu-239, U-235, MFP	2.00	1.00	0.0062
S811400	2	Pu-239, U-235, MFP	3.50	1.75	0.0062
S811401	2	Pu-239, U-235, MFP	5.20	2.63	0.0657
S811406	2	Pu-239, U-235, MFP	2.50	1.25	0.0062
S814978	3	Pu-239, U-235, MFP	0.18	0.09	0.0037
TOTALS for Shaft 207	11	Pu-239, U-235, MFP	13.40	6.72	0.09

Waste Package Data Summary

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 207 Configuration

Shaft 207 Totals at Disposal

Total Number of Waste Packages	5				
Total Gross Weight (pounds)	76				
Total Pu-239 (grams)	1.4	12			
Total U-235 (grams)	5.6	58			
Total Mixed Fission Products (Ci)	13.33				
Dates of Disposal	5/29/1981 to	5/29/1981			
Radiation at Surface of Waste Package (mR/hr)	3,600 to 290,000 at disposal	1,800 to 143,000 decayed to 2009			
Radiation at One Meter from Surface of Waste Package (mR/hr)	180 to 5,150 at disposal	10 to 1,000 * decayed to 2009			

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (lb)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
	State of the		Coll 12 grinding papers	Plastic cap pos 2060	Pu-239	1.00E-01	g		1980
S811397	5/29/1981	16	kimwipes, plastic	Plastic can nos. 3069	U-235	4.00E-01	g	60,000	2,000
1100	S. 11 11				MFP	2.00E+00	Ci		
S811400 5/29/1981		glass paper etc. cap	the ferril	Pu-239	1.00E-01	g			
	5/29/1981	16	3046, 3060, Cell 14	290000 mR/hr surface	U-235	4.00E-01	g	290,000	3,500
		and the second second		MFP	3.50E+00	Ci			
ALC: NO		16	Cell 14 can 3065? Fuel plastic bottles	Cell 16 can 3067 170000 mR/hr	Pu-239	1.06E+00	g	170,000	5,150
S811401	5/29/1981				U-235	4.24E+00	g		
					MFP	5.15E+00	Ci		
- Aller	ALC: NOT	- Aller	Cell 13 (illegible)		Pu-239	1.00E-01	g	A - 0 -	the second second
S811406	5/29/1981	16	Papers, kimwipes,	Plastic cans 3103, 3101,	U-235	4.00E-01	g	150,000	2,500
		plastic	130000 mitym	MFP	2.50E+00	Ci		1	
Start Frank				Pu-239	6.00E-02	g			
S814978	5/29/1981	5/29/1981 12 C	Cell 15 wipes, polishing cloths, plastic	cans 3104, 3097, 3099 -	U-235	2.40E-01	g	3,600	180
		ciotits, prastic			MFP	1.80E-01	Ci		

Material Disposal Area G, 33 Shafts Shaft 208 Waste Data Fact Sheet

Contents

Shaft 208 contains seven packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with five of the packages containing waste placed inside two one-gallon paint-type metal cans and placed into a plastic bag. Two of the seven packages contain waste placed inside single one-gallon metal cans placed into a plastic bag. Some paint-type cans were placed into a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 1,000 to 80,000 mrem/hour. The five packages of waste were placed into Shaft 208 in June 1981.

Shaft Configuration

Construction of Shaft 208 was initiated by augering a 24-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 208 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Waste Package Data Summary

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S810794	2	Pu-239, U-235, MFP	101.63	51.6	1.75
S810802	1	Pu-239, U-235, MFP	0.07	0.04	0.0062
S811405	2	Pu-239, U-235, MFP	2.03	1.03	0.031
S811408	1	Pu-239, U-235, MFP	0.09	0.05	0.0062
S811409	2	Pu-239, U-235, MFP	2.10	1.05	0.0062
S811411	2	Pu-239, U-235, MFP	1.01	0.50	0.0062
S814979	2	Pu-239, U-235, MFP	0.12	0.06	0.00248
TOTALS for Shaft 208	12	Pu-239, U-235, MFP	107.05	54.29	1.81

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 208 Totals at Disposal

Total Number of Waste Packages	ALTING AT					
Total Gross Weight (pounds)	85					
Total Pu-239 (grams)	29.44					
Total U-235 (grams)	105.76					
Total Mixed Fission Products (Ci)	1004.36					
Dates of Disposal	6/22/1981 to 6/22/1981					
Radiation at Surface of Waste Package (mR/hr)	1,000 to 80,000 at disposal	500 to 40,000 decayed to 2009				
Radiation at One Meter from Surface of Waste Package (mR/hr)	60 to 2,100 at disposal	10 to 300 * decayed to 2009				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
					Pu-239	2.85E+01	g		1.2.5
S810794	6/22/1981	16	Cell 9, 13 fuel trash cans 3123, 3126	1000+ R/hr contact 100 R/hr meter	U-235	1.02E+02	g	20	1 24
	M /				MFP	9.99E+02	Ci		
A A	- Vat		Cell 13 hot trash can 3119		Pu-239	1.00E-01	g	ALA.	
S810802	6/22/1981	5			U-235	4.00E-01	g	1,000	60
	State State			A A A SA	MFP	6.00E-02	Ci		
148	and the second		Cell 13 catch pans, grinding papers, towels	plastic cans 3096, 3102	Pu-239	5.00E-01	g	80,000	2,000
S811405 6/22/198	6/22/1981	6/22/1981 16			U-235	2.00E+00	g		
					MFP	2.00E+00	Ci		
	and the	981 8	Cell 15 wipes, polishing cloths, plastics	Can 3093	Pu-239	1.00E-01	g	1,500	80
S811408 6/22/1981	6/22/1981				U-235	4.00E-01	g		
					MFP	8.00E-02	Ci		
S811409 6/22/1981			Cell 13 catch pans, fuel, grinding papers	plastic cans 3092, 3110	Pu-239	1.00E-01	g	32,000	2,100
	6/22/1981	16			U-235	4.00E-01	g		
					MFP	2.10E+00	Ci		
S811411 6/22/19			16 Cell 13 grinding papers, plastic, towels	Plastic cans 3094, 3116	Pu-239	1.00E-01	g	29,000	1,000
	6/22/1981	16			U-235	4.00E-01	g		
					MFP	1.00E+00	Ci		
S814979	6/22/1981	8	Cell 15 wipes, polishing	Cans 3100, 3109 - see	Pu-239	4.00E-02	g	2,400	120
					U-235	1.60E-01	g		
					MFP	1.20E-01	Ci		

Material Disposal Area G, 33 Shafts Shaft 209 Waste Data Fact Sheet

Contents

Shaft 209 contains six packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside two one-gallon paint-type metal cans and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 1,600 to 90,000 mrem/hour. The six packages of waste were placed into Shaft 209 in April 1981.

Shaft Configuration

Construction of Shaft 209 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 209 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.



Location in Shaft Field



RSWD * **Total Curies** Total Curies Volume Radionuclides PE-Ci (gallons) at Disposal Decayed to 2009 Number Pu-239, U-235, MFP S810787 2 0.41 0.20 0.0062 S810795 Pu-239, U-235, MFP 2 0.50 1.00 0.0062 Pu-239, U-235, MFP S810798 2 0.21 0.11 0.0062 Pu-239. U-235. MFP \$810799 ** 4 0.31 0.16 0.0062 Pu-239, U-235, MFP S81412 2 2.00 1.00 0.0062 TOTALS for 12 Pu-239, U-235, MFP 3.93 1.97 0.03 Shaft 209

* RSWD = Radioactive Solid Waste Disposal record

** Contains two packages of two one-gallon cans

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Waste Package Data Summary

Shaft 209 Totals

Total Number of Waste Packages	6					
Total Gross Weight (pounds)	94					
Total Pu-239 (grams)	0.5					
Total U-235 (grams)	2					
Total Mixed Fission Products (Ci)	3.9					
Dates of Disposal	6/22/1981 to 6/22/1981					
Radiation at Surface of Waste Package (mR/hr)	1,600 to 90,000 at disposal	790 to 45,000 decayed to 2009				
Radiation at One Meter from Surface of Waste Package (mR/hr)	200 to 2,000 at disposal	10 to 320 * decayed to 2009				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Detailed Waste Package Data at Disposal

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
			Cell 13 trash, plastic, paint, vermiculite	Plastic cans 3098, 3131 -	Pu-239	1.00E-01	g	15,000	1,000
S810795 6/22/1	6/22/1981	16			U-235	4.00E-01	g		
	11/1				MFP	1.00E+00	Ci		
S810797 6/22/1981			Cell 15 trash, wipes, chips, plastic	Plastic cans 3118 &	Pu-239	1.00E-01	g	2,800	400
	6/22/1981	16			U-235	4.00E-01	g		
	S. WELL				MFP	4.00E-01	Ci		
S810798 6/22/19	34		Cell 15 vermiculite, wipes, plastic, paint	Plastic cans 3111, 3114	Pu-239	1.00E-01	g	1,600	200
	6/22/1981	22/1981 16			U-235	4.00E-01	g		
					MFP	2.00E-01	Ci		
S810799 * 6/22/1981		22/1981 30	Cell 15 trash cans 2125, 3108, 3117, 3130	178 - 19 S	Pu-239	1.00E-01	g	5,000	300
	6/22/1981				U-235	4.00E-01	g		
					MFP	3.00E-01	Ci		
S811412	Carlos A.	16	Cell 13 grinding papers, plastic, glass	Plastic cans 3091, 3115	Pu-239	1.00E-01	g	90,000	2,000
	6/22/1981				U-235	4.00E-01	g		
					MFP	2.00E+00	Ci		

* Contains two packages of two one-gallon cans
Material Disposal Area G, 33 Shafts Shaft 210 Waste Data Fact Sheet

Contents

Shaft 210 contains six packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside two one-gallon paint-type metal cans and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 300 to 10,000 mrem/hour. The six packages of waste were placed into Shaft 210 in June 1981.

Shaft Configuration

Construction of Shaft 210 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 210 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Location in Shaft Field

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S810800	2	Pu-239, U-235, MFP	0.41	0.20	0.0062
S810804 **	4	Pu-239, U-235, MFP	0.21	0.11	0.0062
\$810805 **	4	Pu-239, U-235, MFP	0.31	0.16	0.0062
S810806	2	Pu-239, U-235, MFP	0.03	0.02	0.0062
TOTALS for Shaft 210	12	Pu-239, U-235, MFP	0.94	0.48	0.025

Waste Package Data Summary

* RSWD = Radioactive Solid Waste Disposal record

** Contains two packages of two one-gallon cans

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 210 Totals

Total Number of Waste Packages		6			
Total Gross Weight (pounds)	51 (weights not provide	ed on two RSWD forms)			
Total Pu-239 (grams)	0	.4			
Total U-235 (grams)		.6			
Total Mixed Fission Products (Ci)	otal Mixed Fission Products (Ci) 0.92				
Dates of Disposal	6/22/1981 to 6/22/1981				
Radiation at Surface of Waste Package (mR/hr)	300 to 10,000 150 to 4,900 at disposal decayed to 2009				
Radiation at One Meter from Surface of Waste Package (mR/hr)	20 to 4001 to 35 *at disposaldecayed to 2009				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Detailed Waste Package Data at Disposal

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)							
					Pu-239	1.00E-01	g		75.1							
S810800	6/22/1981		cans 3145, 3147	All See .	U-235	4.00E-01	g	10,000	400							
1.15	11 11			112 MALINE AVEN	MFP	4.00E-01	Ci	Z 1 3 2								
A A	- Viet		Cell 13, 15 hot trash		Pu-239	1.00E-01	g	ALL AL								
S810804 *	6/22/1981			Cell 13, 15 hot trash	Cell 13, 15 hot trash	Cell 13, 15 hot trash	Cell 13, 15 hot trash	Cell 13, 15 hot trash	Cell 13, 15 hot trash	Cell 13, 15 hot trash	Cell 13, 15 not trash	Cans, 3132	U-235	4.00E-01	g	4,000
	S. W. Carl		cans 5155, 5155, 5155,	ans 5159, 5155, 5155,	MFP	2.00E-01	Ci	× 78	1 X B							
	1000				Pu-239	1.00E-01	g									
S810805 *	6/22/1981	35	Cell 13, 15 hot trash	3151 in suitcase cask	U-235	4.00E-01	g	5,000	300							
		cans 5145, 5140, 2909,	and the second	MFP	3.00E-01	Ci		and the second second								
			the the	11224	Pu-239	1.00E-01	g									
S810806 6/22/1981 16	16	Cell 13, 15 hot trash		U-235	4.00E-01	g	300	20								
		cans 5150, 5155		MFP	2.00E-02	Ci										

* Contains two packages of two one-gallon cans

Material Disposal Area G, 33 Shafts Shaft 211 Waste Data Fact Sheet

Contents

Shaft 211 contains six packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside two one-gallon paint-type metal cans and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 1,000 to 940,000 mrem/hour. The six packages of waste were placed into Shaft 211 in October 1981.

Shaft Configuration

Construction of Shaft 211 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 211 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.



Location in Shaft Field



RSWD * **Total Curies** Total Curies Volume Radionuclides PE-Ci (gallons) at Disposal Decayed to 2009 Number Pu-239, U-235, MFP S810807 2 0.71 0.35 0.0062 Pu-239, U-235, MFP S810808 2 2.21 1.1 0.0062 Pu-239, U-235, MFP S810809 2 4.00 2.00 0.0062 S810810 ** 4 Pu-239, U-235, MFP 0.07 0.04 0.0062 Pu-239, U-235, MFP S812669 2 11.40 5.88 0.406 TOTALS for 12 Pu-239, U-235, MFP 18.38 9.36 0.43 Shaft 211

* RSWD = Radioactive Solid Waste Disposal record

** Contains two packages of two one-gallon cans

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Waste Package Data Summary

Shaft 211 Totals

Total Number of Waste Packages	6				
Total Gross Weight (pounds)	4,400 *				
Total Pu-239 (grams)	6.9	96			
Total U-235 (grams)	27	.6			
Total Mixed Fission Products (Ci)	17.96				
Dates of Disposal	6/23/1981 to 10/6/1981				
Radiation at Surface of Waste Package (mR/hr)	1,000 to 940,000 500 to 465,000 at disposal decayed to 2009				
Radiation at One Meter from Surface of Waste Package (mR/hr)	60 to 11,000 10 to 3,300 ** at disposal decayed to 2009				

* This weight is based on weights provided in the RSWD forms, but is considered questionable because other characteristics of the six packages in Shaft 211 are similar to packages composed of two one-gallon cans in other shafts. Other shafts with similar packages are reported to have total package weights of about 75 to 130 pounds.

** Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Detailed Waste Package Data at Disposal

Waste Package RSWD Number	Date Disposed	Gross Weight (lb)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
A STATE					Pu-239	1.00E-01	g		
S810807	6/23/1981	880	Cell 13 & 15 hot trash;	cans plastic 3145, 3147	U-235	4.00E-01	g	16,000	700
10/0/1981				MFP	7.00E-01	Ci			
	25 WELL		materia had		Pu-239	1.00E-01	g	2. 18	
S810808 10/6/1981 880	880	Cell 14 cans 3158, 3159 hot trash glass:	126 R at contact,	U-235	4.00E-01	g	126,000	2,200	
			5155, not trush, gluss,	plater, paper	MFP	2.20E+00	Ci		
	Long Cont		Caller Provide		Pu-239	1.00E-01	g		
S810809	10/6/1981	880	Cell 13 trash catch	Plastic cans 3162, 3167,	U-235	4.00E-01	g	160,000	4,000
der (paris, plastic wipes,	100 IVIII @ Ct,	MFP	4.00E+00	Ci	Street, and	"w/ -44
			Cell 15 cold trash.		Pu-239	1.00E-01	g		
S810810 * 10/6/1981 880	880	plastics, bottles,	Can 3160, 3161, 3168, 3169	U-235	4.00E-01	g	1,000	60	
		wipes;	5105	MFP	6.00E-02	Ci			
a la se			Cell 14 cans 3171?.		Pu-239	6.56E+00	g		
S812669	10/6/1981	880	3179, fuel , OM?, glass,	940 Rhr contact	U-235	2.60E+01	g	940,000	11,000
8/3/1981		etc		MFP	1.10E+01	Ci			

* Contains two packages of two one-gallon cans

Material Disposal Area G, 33 Shafts Shaft 212 Waste Data Fact Sheet

Contents

Shaft 212 contains the stainless steel core of a small research reactor called the Los Alamos Molten Plutonium Reactor Experiment (LAMPRE I) that operated at LANL Technical Area 35, Building 2, in the early 1960s. The reactor was retired and defueled in the mid-1960s and decommissioned in 1980. The cylindrical reactor vessel was removed and placed into a cask constructed from a ¼ inch thick steel pipe that was 32 inches in diameter and 14 feet in length with a steel plate on the bottom. The reactor vessel was encased in concrete within the cask. The primary radionuclides in the waste are plutonium-239 and cobalt-60. Waste is considered to be remote-handled with the reported radiation dose at the surface of the package at the time of generation reported as 1,750 mrem/hour. The single package of waste was placed into Shaft 212 in April 1980.

Shaft Configuration



Construction of Shaft 212 was initiated by augering a 36-inch diameter vertical hole into the mesa top. The cask containing the LAMPRE reactor vessel encased in concrete was lowered into Shaft 212 and a cap of concrete was constructed over the shaft. A photograph of the cask being lowered into the shaft is shown on the left.

Shaft 212 Configuration



Location in Shaft Field



Waste Package Data Summary

RSWD * Number	Volume (cubic feet)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S803758	75	Pu-239, Co-60	42.40	13.06	12.40
TOTALS for Shaft 212	75	Pu-239, Co-60	42.40	13.06	12.40

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 212 Totals

Total Number of Waste Packages	$A = \mathbb{Z} / \mathbb{Z} $				
Total Gross Weight (pounds)	16,000				
Total Pu-239 (grams)	200				
Total Co-60 (curies)	30				
Date of Disposal	4/09	9/1980			
Radiation at Surface of Waste Package (mR/hr)	1,750 40 at disposal decayed to 20				
Radiation at One Meter from Surface of Waste Package (mR/hr)	300 10 * at disposal decayed to 2009				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
\$803758	4/09/1980	4/09/1980	LAMPRE reactor vessel	Vessel in ¼″ steel cask	Pu-239	200	g	1 750	300
3803738	4/03/1980	10,000	sealed in cask	with concrete	C 0-60	30	Ci	1,750	300

Material Disposal Area G, 33 Shafts Shaft 213 Waste Data Fact Sheet

Contents

Shaft 213 contains four packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside two one-gallon paint-type metal cans and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 160,000 to 1,000,000 mrem/hour. The four packages of waste were placed into Shaft 213 in November 1981.

Shaft Configuration

Construction of Shaft 213 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 213 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.



Location in Shaft Field



Waste Package Data Summary

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S812684	2	Pu-239, U-235, MFP	42.77	22.3	2.02
S812686	2	Pu-239, U-235, MFP	7.26	3.75	0.27
S812688	2	Pu-239, U-235, MFP	101.71	51.0	0.79
S812689	2	Pu-239, U-235, MFP	2.81	1.40	0.01
TOTALS for Shaft 213	8	Pu-239, U-235, MFP	154.56	78.46	3.09

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 213 Totals

Total Number of Waste Packages					
Total Gross Weight (pounds)	64				
Total Pu-239 (grams)	49.9	03			
Total U-235 (grams)	243	.2			
Total Mixed Fission Products (Ci)	ts (Ci) 151.6				
Dates of Disposal	11/3/1981 to 11/3/1981				
Radiation at Surface of Waste Package (mR/hr)	160,000 to 1,000,000 at disposal	0 to 247,000 decayed to 2009			
Radiation at One Meter from Surface of Waste Package (mR/hr)	2,800 to 101,000 0 to 1,750 * at disposal decayed to 200				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
	A STATE OF A STATE		Coll 0 coll waste 8 fuel	Diactic cans 2249	Pu-239	3.26E+01	g		1.00
S812684	11/3/1981	16	& cell 16 waste	1000 + R/hr surf	U-235	1.38E+02	g	1,000,000	40,800
					MFP	4.08E+01	Ci	1113	
ZA	- V-A		Cell 14 cans 3245,	ans 3245, iel, glass, 500 R at contact vels	Pu-239	4.33E+00	g	500,000	7,000
S812686	11/3/1981	1 16	3246, fuel, glass,		U-235	1.73E+01	g		
			towels		MFP	7.00E+00	Ci		
A. JAA			and the first of the		Pu-239	1.28E+01	g		
S812688	11/3/1981	16	Cell 9 & 13 fuel & hot trash	101000 mR/hr @ 1 meter, Cans 3273/3274	U-235	7.79E+01	g		101,000
A Carlos					MFP	1.01E+02	Ci		
100		1. 200	and the second s	States /	Pu-239	2.00E-01	g		
S812689 11/3/1981 16 Cell 1	Cell 13 14 cell waste	160 R/hr @ contact	U-235	1.00E+01	g	160,000	2,800		
The state	cans 3266, 3272		MFP	2.80E+00	Ci				

Material Disposal Area G, 33 Shafts Shaft 214 Waste Data Fact Sheet

Contents

Shaft 214 contains six packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with three packages containing waste placed inside two one-gallon paint-type metal cans and placed into a plastic bag. Two of the packages contain only one one-gallon paint-type metal can, and the sixth package contains a single two-gallon paint-type metal can placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 4,000 to 110,000 mrem/hour. The six packages of waste were placed into Shaft 214 in April 1982.

Shaft Configuration

Construction of Shaft 214 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A 1/2 inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 214 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Location in Shaft Field

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S820057	2	Pu-239, U-235, MFP	0.305955	0.16	0.0062
S820058	2	Pu-239, U-235, MFP	0.126142	0.07	0.0062
S821822	2	Pu-239, U-235, MFP	0.405929	0.21	0.0062
S821823	2	Pu-239, U-235, MFP	0.456217	0.24	0.0062
S821826	2	Pu-239, U-235, MFP	0.405929	0.21	0.0062
S823410	2	Pu-239, U-235, MFP	1.305381	0.67	0.0062
TOTALS for Shaft 214	10	Pu-239, U-235, MFP	3.005552	1.55	0.04

RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Waste Package Data Summary

Shaft 214 Totals

Total Number of Waste Packages	6	mak 1 A			
Total Gross Weight (pounds)	11	6			
Total Pu-239 (grams)	0.	6			
Total U-235 (grams)	2.4	4			
Total Mixed Fission Products (Ci)	29.7				
Dates of Disposal	4/1/1982 to 4/23/1982				
Radiation at Surface of Waste Package (mR/hr)	4,000 to 110,000 2,000 to 56,00 at disposal decayed to 20				
Radiation at One Meter from Surface of Waste Package (mR/hr)	120 to 1,30010 to 400 *at disposaldecayed to 2009				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (lb)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)								
					Pu-239	1.00E-01	g										
\$820057	4/20/1982	18	Cell 16 trash can 3338, kimwines glassware	Lucite can in steel	U-235	4.00E-01	g	15,000	300								
	State 1		Kiiriwipes, Sidssware,	mppic	MFP	3.00E-01	Ci										
11	S.V.				Pu-239	1.00E-01	g	ALL ALL									
S820058	4/20/1982	22	Cell 16 trash can 3351, kimwipes, glassware;	Cell 16 trash can 3351, kimwines glassware:	Cell 16 trash can 3351, kimwines, glassware:	Lucite can in steel	U-235	4.00E-01	g	4,000	120						
-77	25 WELL				MFP	1.20E-01	Ci	X									
	342-				Pu-239	1.00E-01	g										
S821822	4/21/1982	30 cell 13 trash can 3369, Plastic bags & bottles	Cell 13 trash can 3369,	Cell 13 trash can 3369,	Cell 13 trash can 3369,	Cell 13 trash can 3369,	Cell 13 trash can 3369,	30 Cell 13 trash can 3369, Pla	U-235	4.00E-01	g	25,000	400				
		語の新聞	Kiniwipes, paper,	State Street	MFP	4.00E-01	Ci										
	and the second		the top have	STREET, N	Pu-239	1.00E-01	g		Sa Rh								
S821823	4/21/1982	30	Cell 13 trash can 3373,	121100	U-235	4.00E-01	g	30,000	450								
			paper, plastic;		MFP	4.50E-01	Ci										
1.5.73		1.00			Pu-239	1.00E-01	g										
S821826	4/23/1982 20	20	Cell 14 can 3378, glass, plastic bottles;		U-235	4.00E-01	g	20,000	400								
					MFP	4.00E-01	Ci	100									
			- Holen (1992		Pu-239	1.00E-01	g										
S823410	4/1/1982	16	16 Cell 13 & Cell 14 hot trash cans 3307 &	Cell 13 & Cell 14 hot	Cell 13 & Cell 14 hot	Cell 13 & Cell 14 hot	Cell 13 & Cell 14 hot	Cell 13 & Cell 14 hot	Cell 13 & Cell 14 hot	Cell 13 & Cell 14 hot	Cell 13 & Cell 14 hot 1 trash cans 2207 8	110 R/hr @ contact,	U-235	4.00E-01	g	110,000	1,300
1. 1.	A ALESSA			- can 5276	MFP	1.30E+00	Ci										

Material Disposal Area G, 33 Shafts Shaft 215 Waste Data Fact Sheet

Contents

Shaft 215 contains seven packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with five of the packages containing waste placed inside five two-gallon paint-type metal cans and placed into a plastic bag. Two of the seven packages contain waste placed inside single one-gallon metal cans placed into a plastic bag. Some paint-type cans were placed into a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 20,000 to 1,000,000 mrem/hour. The seven packages of waste were placed into Shaft 215 from January to June 1982.

Shaft Configuration

Construction of Shaft 215 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A 1/2 inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 215 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Location in Shaft Field

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S820041	1	Pu-239, U-235, MFP	30.91	16.2	0.93
S820042	1	Pu-239, U-235, MFP	14.99	7.64	0.0062
S821832	2	Pu-239, U-235, MFP	2.00	1.03	0.0062
S821833	2	Pu-239, U-235, MFP	3.00	1.53	0.0062
S821834	2	Pu-239, U-235, MFP	2.00	1.03	0.0062
S821835	2	Pu-239, U-235, MFP	0.31	0.16	0.0062
S821837	2	Pu-239, U-235, MFP	2.00	1.03	0.0062
TOTALS for Shaft 215	12	Pu-239, U-235, MFP	55.22	28.60	0.97

Waste Package Data Summary

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 215 Configuration

Shaft 215 Totals at Disposal

Total Number of Waste Packages		the first			
Total Gross Weight (pounds)	17	6			
Total Pu-239 (grams)	15	.6			
Total U-235 (grams)	73	.6			
Total Mixed Fission Products (Ci)	54.3				
Dates of Disposal	1/06/1982 to 6/09/1982				
Radiation at Surface of Waste Package (mR/hr)	20,000 to 1,00,000 10,000 to 506,000 at disposal decayed to 2009				
Radiation at One Meter from Surface of Waste Package (mR/hr)	800 to 30,000 70 to 3,580 * at disposal decayed to 2009				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
			A CONTRACTOR		Pu-239	1.50E+01	g		
S820041	6/9/1982	18	Cell 9 fuel can 3312	1000+ Rhr at contact	U-235	7.12E+01	g	1,000,000	30,000
	1/0/1002				MFP	3.00E+01	Ci	1 1 1 2	
AA	a la la ca			the Aller	Pu-239	1.00E-01	g	ALLA.	
S820042	6/9/1982	18	Cell 14 waste can 3307	140 R/hr @ contact,	U-235	4.00E-01	g	140,000	15,000
	1,0,1502		matter - bad		MFP	1.50E+01	Ci		
1100	- Aller			Lucite can in steel	Pu-239	1.00E-01	g		
S821832	2 6/9/1982 28	28	Cell 11 trash can 3393 hot trash	3 nipple	U-235	4.00E-01	g	35,000	2,000
Sec. 7.	Long Street				MFP	2.00E+00	Ci		
			the second second		Pu-239	1.00E-01	g		
S821833	6/9/1982	28	Cell 11 hot trash can	100R @ contact	U-235	4.00E-01	g	100,000	3,000
			3300		MFP	3.00E+00	Ci		
Sec. 1					Pu-239	1.00E-01	g		
S821834	6/9/1982	28	Cell 13 hot trash can	trash can 200 R/hr @ contact	U-235	4.00E-01	g	200,000	2,000
6 1 1 30			3307.		MFP	2.00E+00	Ci		
			Contraction of the	The Part of Land	Pu-239	1.00E-01	g		
S821835	6/9/1982	28	Cell 13 hot trash can	Grinding papers, kim	U-235	4.00E-01	g	40,000	800
1 All		1000	3303	WIPCS	MFP	3.00E-01	Ci		
1 de la	1 ACC		The states of	100 State 100	Pu-239	1.00E-01	g k		
S821837	6/9/1982	28	Cell 13 hot trash can	Bottles, kimwipes	U-235	4.00E-01	g	20,000	2,000
					MFP	2.00E+00	Ci		

Material Disposal Area G, 33 Shafts Shaft 216 Waste Data Fact Sheet

Contents

Shaft 216 contains six packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside a two-gallon paint-type metal can and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 8,000 to 200,000 mrem/hour. The six packages of waste were placed into Shaft 216 in June 1982.

Shaft Configuration

Construction of Shaft 216 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 216 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Location in Shaft Field

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S821825	2	Pu-239, U-235, MFP	0.86	0.47	0.062
S821836	2	Pu-239, U-235, MFP	2.00	1.03	0.0062
S821838	2	Pu-239, U-235, MFP	1.00	0.52	0.0062
S821839	2	Pu-239, U-235, MFP	0.21	0.11	0.0062
S821840	2	Pu-239, U-235, MFP	4.00	2.04	0.0062
S821841	2	Pu-239, U-235, MFP	2.00	1.03	0.0062
TOTALS for Shaft 216	12	Pu-239, U-235, MFP	10.09	5.18	0.09

RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Waste Package Data Summary

Shaft 216 Totals

Total Number of Waste Packages	6	real / A			
Total Gross Weight (pounds)	160				
Total Pu-239 (grams)	1.	5			
Total U-235 (grams)	6	AC VA			
Total Mixed Fission Products (Ci)	10				
Dates of Disposal	6/09/1982 to 6/09/1982				
Radiation at Surface of Waste Package (mR/hr)	8,000 to 200,000 4,000 to 101,000 at disposal decayed to 2009				
Radiation at One Meter from Surface of Waste Package (mR/hr)	200 to 4,00030 to 720 *at disposaldecayed to 2009				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (lb)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)										
	I Destanting of the				Pu-239	1.00E+00	g		78.0										
S821825	6/9/1982	20	towels, plstic, etc		U-235	4.00E+00	g	40,000	800										
	State of the state			STATISTICS.	MFP	8.00E-01	Ci	1 1 1 2											
14			Cell 13 bot trash can		Pu-239	1.00E-01	g	N.A.											
S821836	6/9/1982	28	3416	3416	3416	3416	3416	3416	Bottles, kimwipes	U-235	4.00E-01	g	20,000	2,000					
				THE HEALTH NIT ON	MFP	2.00E+00	Ci	ALC: N											
			Cell 13 hot trash can#		Pu-239	1.00E-01	g												
S821838	6/9/1982	28	3395, grinding, etc	3395, grinding, etc	Kimwipes, plastic	U-235	4.00E-01	g	15,000	1,000									
All and and		124.19			MFP	1.00E+00	Ci												
	ALC: NO			States of	Pu-239	1.00E-01	g		Staff to a										
S821839	6/9/1982	28	Cell 13 hot trash can 3405	Cell 13 hot trash can 3405	Cell 13 hot trash can 3405	28 Cell 13 hot trash can 3405 Vermiculite wipes L	Cell 13 hot trash can	Cell 13 hot trash can	Cell 13 hot trash can	Cell 13 hot trash can	Cell 13 hot trash can	Cell 13 hot trash can	8 Cell 13 hot trash can	Vermiculite wipes	U-235	4.00E-01	g	8,000	200
C. C. A.							MFP	2.00E-01	Ci										
					Pu-239	1.00E-01	g												
S821840	6/9/1982	28	Cell 13 hot trash can 3384	28 Cell 13 hot trash can 200 R/hr @ contact U-235 4.00E-0	4.00E-01	g	200,000	4,000											
					MFP	4.00E+00	Ci												
	C.C.S.S			STREET, SPA	Pu-239	1.00E-01	g	1.11											
S821841	6/9/1982	28	Cell 13 hot trash can	Grinding papers	U-235	4.00E-01	g	30,000	2,000										
C. C. S.	and the second		5505, kinwipes,		MFP	2.00E+00	Ci												

Material Disposal Area G, 33 Shafts Shaft 217 Waste Data Fact Sheet

Contents

Shaft 217 contains six packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside a two-gallon paint-type metal can and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 6,000 to 1,000,000 mrem/hour. The six packages of waste were placed into Shaft 217 in September 1982.

Shaft Configuration

Construction of Shaft 217 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 217 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Location in Shaft Field

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S821870	2	Pu-239, U-235, MFP	0.19	0.10	0.0062
S821871	2	Pu-239, U-235, MFP	4.70	2.49	0.198
S821874	2	Pu-239, U-235, MFP	9.99	5.10	0.0062
S821882	2	Pu-239, U-235, MFP	1.01	0.52	0.0062
S821915	2	Pu-239, U-235, MFP	2.41	1.92E	1.41
S821918	2	Pu-239, U-235, MFP	1.20	0.71	0.20
TOTALS for Shaft 217	12	Pu-239, U-235, MFP	19.49	10.83	1.82

Waste Package Data Summary

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 217 Totals

Total Number of Waste Packages	6				
Total Gross Weight (pounds)	16	4			
Total Pu-239 (grams)	29.	.5			
Total U-235 (grams)	87				
Total Mixed Fission Products (Ci)	ed Fission Products (Ci) 17.68				
Dates of Disposal	9/13/1982 to 9/13/1982				
Radiation at Surface of Waste Package (mR/hr)	6,000 to 1,000,000 3,000 to 456,00 at disposal decayed to 200				
Radiation at One Meter from Surface of Waste Package (mR/hr)	1,000 to 150,000 20 to 3,200 * at disposal decayed to 2009				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)											
1.1					Pu-239	1.00E-01	g													
S821870	9/13/1982	20	Cell 14 can 3451, glass, plastic bottles	All Series	U-235	4.00E-01	g	15,000	1,500											
100					MFP	1.80E-01	Ci													
AA.	- West				Pu-239	3.20E+00	g	and the												
S821871	9/13/1982	38	Cell 14 can 3452, fuels scrap, card boxes	Cell 14 can 3452, fuels	Cell 14 can 3452, fuels	Cell 14 can 3452, fuels	Cell 14 can 3452, fuels	Cell 14 can 3452, fuels	Cell 14 can 3452, fuels	Cell 14 can 3452, fuels	Cell 14 can 3452, fuels	Cell 14 can 3452, fuels	Cell 14 can 3452, fuels	Cell 14 can 3452, fuels 1	100000 mR/hr at	U-235	1.29E+01	g	100,000	4,500
1				contact	MFP	4.50E+00	Ci													
S SAM	1000				Pu-239	1.00E-01	g													
S821874	9/13/1982	32 28 Cell 13 not trash, Bottom entry cask	Cell 13 hot trash,	Cell 13 hot trash,	Cell 13 hot trash,	Cell 13 hot trash,	Cell 13 hot trash,	Cell 13 hot trash,	8 Cell 13 hot trash,	28 Cell 13 hot trash,	U-235	4.00E-01	g	80,000	1,000					
			grinding papers, etc	and a state of the	MFP	1.00E+01	Ci													
			the states	N REPORT OF	Pu-239	1.00E-01	g													
S821882	9/13/1982	30	30 Cell 13 trash can #	Cell 13 trash can #	Cell 13 trash can #	Cell 13 trash can #		U-235	4.00E-01	g	6,000	1,000								
			3478		MFP	1.00E+00	Ci													
1.1.1	Cardin 1	1. 188			Pu-239	2.28E+01	g	Sec. B. Se												
S821915	9/13/1982	10	Cell 9 can 3446, waste	1000+ R contact 150 R	U-235	6.00E+01	g	1,000,000	150,000											
			fuel and cell trash	at I meter	MFP	1.00E+00	Ci													
	A Comment				Pu-239	3.20E+00	g													
S821918	9/13/1982	38	38Cell 14 can 3437 fuel scrap card boxes900 R/hr @ cont	Cell 14 can 3437 fuel	Cell 14 can 3437 fuel	Cell 14 can 3437 fuel	Cell 14 can 3437 fuel	Cell 14 can 3437 fuel	Cell 14 can 3437 fuel 900 R/hr @ cont	U-235	1.29E+01	g	900,000	10,000						
2 Mar				Charles and the	MFP	1.00E+00	Ci													

Material Disposal Area G, 33 Shafts Shaft 218 Waste Data Fact Sheet

Contents

Shaft 218 contains six packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside a two-gallon paint-type metal can and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 200,000 to 1,000,000 mrem/hour. The six packages of waste were placed into Shaft 218 in September 1982.

Shaft Configuration

Construction of Shaft 218 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 218 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Location in Shaft Field

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S821875	2	Pu-239, U-235, MFP	19.99	10.2	0.0062
S821879	2	Pu-239, U-235, MFP	30.10	15.4	0.124
S821881	2	Pu-239, U-235, MFP	40.10	20.5	0.124
S821883	2	Pu-239, U-235, MFP	6.00	3.06	0.0062
S821916	2	Pu-239, U-235, MFP	32.48	17.8	2.5
S821917	2	Pu-239, U-235, MFP	6.00	3.06	0.0062
TOTALS for Shaft 218	12	Pu-239, U-235, MFP	134.67	69.95	2.77

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Waste Package Data Summary

Shaft 218 Totals

Total Number of Waste Packages	6				
Total Gross Weight (pounds)	19	0			
Total Pu-239 (grams)	44.	7			
Total U-235 (grams)	10	2			
Total Mixed Fission Products (Ci)	132				
Dates of Disposal	9/13/1982 to	9/13/1982			
Radiation at Surface of Waste Package (mR/hr)	200,000 to 1,000,000 101,000 to 456,0 at disposal decayed to 200				
Radiation at One Meter from Surface of Waste Package (mR/hr)	6,000 to 40,000 700 to 3,200 * at disposal decayed to 2009				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)		
			No. 100		Pu-239	1.00E-01	g				
S821875	9/13/1982	30	Cell 9 trash can # 3499	300 R @ contact	U-235	4.00E-01	g	300,000	20,000		
					MFP	2.00E+01	Ci				
AN	11		124185	- All - March	Pu-239	2.00E+00	g	and the			
S821879	9/13/1982	30	Cell 13 trash catch pan can# 3477	Cell 13 trash catch pan	can# 3477 500 R @ cont	500 R @ contact	U-235	9.00E+00	g	500,000	30,000
-77 V	25 WORLS				MFP	3.00E+01	Ci	X			
	-		Cell 13 trash can #3468	sh can #3468 900 R @ contact;	Pu-239	2.00E+00	g	900,000	40,000		
S821881	9/13/1982	30			U-235	9.00E+00	g				
	Line Cont		and the party of the		MFP	4.00E+01	Ci				
			the state	1742	Pu-239	1.00E-01			Saffe I		
S821883	9/13/1982	30	Cell 13 trash can #	200 Rhr@ contact	U-235	4.00E-01	AV AND	200,000	6,000		
			3409		MFP	6.00E+00					
Sec.		1.00	The All and		Pu-239	4.04E+01	g				
S821916	9/13/1982	40	Cropper disposals and	Reading @ cont 1000+ B/br	U-235	8.28E+01	g	1,000,000	30,000		
				Tym	MFP	3.00E+01	Ci	100			
			States and the		Pu-239	1.00E-01	g				
S821917	9/13/1982	30	Cell 9 trash can # 5	300 R/hr @ contact	U-235	4.00E-01	g	300,000	6,000		
1. 1.	A Martin			Sector Sector	MFP	6.00E+00	Ci				

Material Disposal Area G, 33 Shafts Shaft 219 Waste Data Fact Sheet

Contents

Shaft 219 contains six packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside a two-gallon paint-type metal can and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 30,000 to 1,000,000 mrem/hour. The six packages of waste were placed into Shaft 219 in March 1983.

Shaft Configuration

Construction of Shaft 219 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 219 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Location in Shaft Field

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S832830	2	Pu-239, U-235, MFP	19.99	10.4	0.0062
S832831	2	Pu-239, U-235, MFP	0.81	0.42	0.0062
S832832	2	Pu-239, U-235, MFP	152.39	80.6	2.51
S832833	2	Pu-239, U-235, MFP	29.98	15.6	0.0062
S832834	2	Pu-239, U-235, MFP	50.10	26.1	0.0062
S832835	2	Pu-239, U-235, MFP	100.19	52.4	0.309
TOTALS for Shaft 219	12	Pu-239, U-235, MFP	353.46	185.62	2.84

RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Waste Package Data Summary

Shaft 219 Totals

Total Number of Waste Packages	6				
Total Gross Weight (pounds)	18	D			
Total Pu-239 (grams)	45.8	38			
Total U-235 (grams)	257	.8			
Total Mixed Fission Products (Ci)	350.8				
Dates of Disposal	3/10/1983 to	3/10/1983			
Radiation at Surface of Waste Package (mR/hr)	R/hr) 30,000 to 1,000,000 16,000 to 518, at disposal decayed to 20				
Radiation at One Meter from Surface of Waste Package (mR/hr)	urface of Waste 800 to 150,000 100 to 3,70 at disposal decayed to 2				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)								
11.1					Pu-239	1.00E-01	g										
S832830	3/10/1983	30	Cell 13 grinding waste	1000 R/hr @ contact;	U-235	4.00E-01	g	1,000,000	20,000								
100			Call#3327		MFP	2.00E+01	Ci	1 1 2									
A.A.	- West			and a start from	Pu-239	1.00E-01	g	R. M.									
S832831	3/10/1983	30	Cell 11 trash can 3727	Cell 11 trash can 3727	Cell 11 trash can 3727	Cell 11 trash can 3727	Cell 11 trash can 3727	Cell 11 trash can 3727	Cell 11 trash can 3727	Cell 11 trash can 3727	Cell 11 trash can 3727	Bottom entry cask	U-235	4.00E-01	g	30,000	800
-77			- Alter and a find		MFP	8.00E-01	Ci	X Par									
1. 200	348-				Pu-239	4.05E+01	g										
S832832	3/10/1983	30	Cell 9 fuel & hardware	Cell 9 fuel & hardware	1000+R @ contact 1508 @ 1 meter:	U-235	2.36E+02	g	1,000,000	150,000							
			can 3724	130K @ 1 Meter,	MFP	1.50E+02	Ci										
			the the factor	The second	Pu-239	1.00E-01	g										
S832833	3/10/1983	30	Cell 9 waste can 3725	200 R/hr contact;	U-235	4.00E-01	g	200,000	30,000								
					MFP	3.00E+01	Ci										
					Pu-239	1.00E-01	g										
S832834	3/10/1983	30	Cell 9 hot trash can	1000+R contact 50R at	U-235	4.00E-01	g	1,000,000	50,000								
1 1 m			5524	Timeter	MFP	5.00E+01	Ci										
	A Lat		- Hearing Cont		Pu-239	4.98E+00	g										
S832835	3/10/1983	30	Cell 9 hot trash can 3495	Cell 9 hot trash can	1000+R contact 100R at	U-235	2.02E+01	g	1,000,000	100,000							
1 11				Timeter	MFP	1.00E+02	Ci										

Material Disposal Area G, 33 Shafts Shaft 220 Waste Data Fact Sheet

Contents

Shaft 220 contains six packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside a two-gallon paint-type metal can and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 100,000 to 1,000,000 mrem/hour. The six packages of waste were placed into Shaft 220 in March 1983.

Shaft Configuration

Construction of Shaft 220 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 220 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.

RSWD *

Number

S832836

\$832837

S832838

S832839

2

2

2



Location in Shaft Field



Volume
(gallons)RadionuclidesTotal Curies
at DisposalTotal Curies
Decayed to 2009PE-Ci2Pu-239, U-235, MFP99.8952.10.0062

99.89

2.00

8.01

52.1

1.05

4.18

0.0068

0.0062

0.0062

Waste Package Data Summary

S832840	2	Pu-239, U-235, MFP	199.87	104	0.0062
S832841	2	Pu-239, U-235, MFP	50.10	26.1	0.0062
OTALS for Shaft 220	12	Pu-239, U-235, MFP	459.76	239.78	0.038

* RSWD = Radioactive Solid Waste Disposal record

Pu-239, U-235, MFP

Pu-239, U-235, MFP

Pu-239, U-235, MFP

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 220 Totals

Total Number of Waste Packages	6				
Total Gross Weight (pounds)	18	D			
Total Pu-239 (grams)	0.6	1			
Total U-235 (grams)	2.4	ACVA			
Total Mixed Fission Products (Ci)	460				
Dates of Disposal	3/10/1983 to	3/10/1983			
Radiation at Surface of Waste Package (mR/hr)	100,000 to 1,000,000 52,000 to 104,0 at disposal decayed to 20				
Radiation at One Meter from Surface of Waste Package (mR/hr)	2,000 to 200,000 400 to 730 * at disposal decayed to 2009				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)		
1.1					Pu-239	1.00E-01	g				
S832836	3/10/1983	30	Cell 9 waste etc can	100 R/hr @ 1m 1000+ R/hr @ con	U-235	4.00E-01	g	1,000,000	100,000		
100			5720	iyin e con	MFP	1.00E+02	Ci				
A.A.	-11-5			the Aller	Pu-239	1.10E-01	g	and the			
S832837	3/10/1983	30	Cell 9 waste can 3491	Cell 9 waste can 3491	Cell 9 waste can 3491 10	aste can 3491 100 R/hr 1m 1000+ R/hr contact	U-235	4.00E-01	g	1,000,000	100,000
-77	ST WELL		- Alter and a find	in contact	MFP	1.00E+02	Ci	X Phil			
N SAM	Set and		723	100 R/hr contact	Pu-239	1.00E-01	g	100,000	2,000		
S832838	3/10/1983	30	Cell 11 trash can 3706		U-235	4.00E-01	g				
			Contraction of the second		MFP	2.00E+00	Ci				
			the states	With Section 1.	Pu-239	1.00E-01	g				
S832839	3/10/1983	30	Cell 13 grinding can	200 R/hr contact	U-235	4.00E-01	g	200,000	8,000		
			3528	5528	MFP	8.00E+00	Ci				
1.5.6					Pu-239	1.00E-01	g				
S832840	3/10/1983	30	Cell 13 grinding can	200 R/hr 1m 1000+	U-235	4.00E-01	g	1,000,000	200,000		
			3522	3522	Ry III COIItact	MFP	2.00E+02	Ci			
Star Star					Pu-239	1.00E-01	g				
S832841	3/10/1983	30	Cell 16 wire wrap can	Cell 16 wire wrap can	Cell 16 wire wrap can 50 R/hr 1 m 1000+	can 50 R/hr 1 m 1000+	U-235	4.00E-01	g	1,000,000	50,000
1.11			3720	R/nr contact	MFP	5.00E+01	Ci				

Material Disposal Area G, 33 Shafts Shaft 221 Waste Data Fact Sheet

Contents

Shaft 221 contains six packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside a two-gallon paint-type metal can and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 60,000 to 1,000,000 mrem/hour. The six packages of waste were placed into Shaft 221 in March 1983.

Shaft Configuration

Construction of Shaft 221 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 221 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Location in Shaft Field

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S832842	2	Pu-239, U-235, MFP	14.99	7.82	0.0062
S832843	2	Pu-239, U-235, MFP	29.98	15.6	0.0062
S832844	2	Pu-239, U-235, MFP	39.98	20.9	0.0062
S832845	2	Pu-239, U-235, MFP	1.50	78.7	0.0062
S832846	2	Pu-239, U-235, MFP	59.98	31.3	0.0062
S832847	2	Pu-239, U-235, MFP	29.98	15.6	0.0062
TOTALS for Shaft 221	12	Pu-239, U-235, MFP	176.42	92.00	0.04

Waste Package Data Summary

RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 221 Totals

Total Number of Waste Packages	6	The I a			
Total Gross Weight (pounds)	180				
Total Pu-239 (grams)	0.6	6			
Total U-235 (grams)	2.4				
Total Mixed Fission Products (Ci)	176.5				
Dates of Disposal	3/10/1983 to 3/10/1983				
Radiation at Surface of Waste Package (mR/hr)	60,000 to 1,000,000 31,000 to 414,0 at disposal decayed to 20				
Radiation at One Meter from Surface of Waste Package (mR/hr)	1,500 to 60,000 220 to 2,900 * at disposal decayed to 2009				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Tupe	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)		
					Pu-239	1.00E-01	g				
S832842	3/10/1983	30	Cell 1 wire wraps 3554	400 R/hr contact	U-235	4.00E-01	g	400,000	15,000		
100	SA 10 V			MINA ASS	MFP	1.50E+01	Ci				
1 AN	-11-1			the file	Pu-239	1.00E-01	g	and the second			
S832843	3/10/1983	30	Cell 1 wire wraps 3507	Cell 1 wire wraps 3507	Cell 1 wire wraps 3507	e wraps 3507 1000+ R/hr contact	U-235	4.00E-01	g	1,000,000	30,000
	ET WALL		and the second second		MFP	3.00E+01	Ci				
			Cell 14 hot trash 3569	Cell 14 hot trash 3569 800 R/hr contact	Pu-239	1.00E-01	g	800,000	40,000		
S832844	3/10/1983	30			U-235	4.00E-01	g				
	1 - Carlos and		Contraction of the second second		MFP	4.00E+01	Ci				
			and the second second	The second second second	Pu-239	1.00E-01	g		B. / B.		
S832845	3/10/1983	30	Cell 14 hot trash can	Bottom entry cask	U-235	4.00E-01	g	60,000	1,500		
			5722		MFP	1.50E+00	Ci				
		1. 199			Pu-239	1.00E-01	g				
S832846	3/10/1983	30	Cell 14 waste can 3720	200 R/hr contact	U-235	4.00E-01	g	200,000	60,000		
					MFP	6.00E+01	Ci	1			
Stor 12	A Comment		Cell 14 waste can	Contraction of the second	Pu-239	1.00E-01	g				
S832847	3/10/1983	30	#3721	200 R/hr contact	U-235	4.00E-01	g	200,000	60,000		
1. 1.				A Contraction	MFP	3.00E+01	Ci				

Material Disposal Area G, 33 Shafts Shaft 222 Waste Data Fact Sheet

Contents

Shaft 222 contains seven packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with four packages containing waste placed inside two-gallon paint-type metal cans and placed into plastic bags. Three of the packages contain waste placed inside one-gallon paint-type metal cans and placed into plastic bags. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 10,000 to 900,000 mrem/hour. The seven packages of waste were placed into Shaft 222 in December 1983.

Shaft Configuration

Construction of Shaft 222 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A 1/2 inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 222 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S830716	2	Pu-239, U-235, MFP	20.02	10.5	0.035
S830717	2	Pu-239, U-235, MFP	199.90	1.04E+02	0.035
S830781	2	Pu-239, U-235, MFP	1.02	0.53	0.004
S830787	1	Pu-239, U-235, MFP	40.02	20.9	0.009
S830788	2	Pu-239, U-235, MFP	40.03	20.9	0.009
S830789	1	Pu-239, U-235, MFP	0.24	0.12	0.008
S830790	1	Pu-239, U-235, MFP	41.28	21.4	0.220
TOTALS for Shaft 222	11	Pu-239, U-235, MFP	342.52	178.53	0.32

Waste Package Data Summary

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 222 Configuration

Shaft 222 Totals

Total Number of Waste Packages		the first			
Total Gross Weight (pounds)	260				
Total Pu-239 (grams)	1.1	3			
Total U-235 (grams)	4.	5			
Total Mixed Fission Products (Ci)	341.2				
Total Pu-53 (grams)	3.3				
Total U-36 (grams)	13	.2			
Dates of Disposal	12/14/1983 to	0 12/14/1983			
Radiation at Surface of Waste Package (mR/hr)	10,000 to 900,000 at disposal	5,200 to 466,000 decayed to 2009			
Radiation at One Meter from Surface of Waste Package (mR/hr)	200 to 40,000 40 to 3,300 at disposal decayed to 2				

 st Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (lb)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)		
-71	M/		The second se		Pu-239	5.64E-01	g				
S830716	12/14/1983	30	Cell 14 can 3712 fuel	900 Rhr at contact	U-235	2.25E+00	g	900,000	20,000		
			scrap, paper, etc	/ N / TS-/	MFP	2.00E+01	Ci				
	N. Mars			200 Rhr at one	Pu-239	5.64E-01	g	CH N			
S830717	12/14/1983	30	Cell 14 can 3718 fuel	meter+1000 Rhr	U-235	2.25E+00	g				
Net the			scrap, paper, etc	contact	MFP	2.00E+02	Ci				
					Pu-53	5.00E-02	g	20,000			
S830781	12/14/1983	40	Cell 14 trash 1 can	Bottom entry, ST can #1 —	U-36	2.00E-01	g		1,000		
OF V	and the second		Contrast of the second		MFP	1.00E+00	Ci				
ST. P. M.	Constant in		Cell 9 trash 1 can	Cell 9 trash 1 can		Pu-53	1.20E-01	g			
S830787	12/14/1983	40			Bottom entry steel can #10 200 B/br C	Cell 9 trash 1 can #10 200 B/br C	U-36	5.00E-01	g	200,000	40,000
					Geographic Co	#10 200 N/III C.	MFP	4.00E+01	Ci		
		-		Bottom entry steel can #6 100 R/br cont	Pu-53	1.20E-01	g				
S830788	12/14/1983	40	40 Cell 14 trash 1 can Bottom entry steel can U-36 #6 100 R/hr cont. MFP		U-36	5.00E-01	g	100,000	40,000		
		10.000		4.00E+01	Ci						
	1 Carlos				Pu-53	1.00E-01	g				
S830789	12/14/1983	40	Cell 14 trash 1 can	Steel can #8	U-36	4.00E-01	g	10,000	200		
					MFP	2.00E-01	Ci				
Contraction of the					Pu-53	2.91E+00	g				
S830790	12/14/1983	40	Cell 14 trash 1 can	Cell 14 trash 1 can	Steel can #9 200 R	U-36	1.16E+01	g	200,000	40,000	
				contact	MFP	4.00E+01	Ci				

Material Disposal Area G, 33 Shafts Shaft 223 Waste Data Fact Sheet

Contents

Shaft 223 contains six packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste placed inside a two-gallon paint-type metal can and placed into a plastic bag. Some paint-type cans may have been sealed in a plastic container before being placed into the plastic bag. Wastes include hot-cell trash, grinding papers, kimwipes, and plastic. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remote-handled with the reported radiation dose at the surface of the packages at the time of generation ranging from 60,000 to 1,000,000 mrem/hour. The six packages of waste were placed into Shaft 223 in December 1983.

Shaft Configuration

Construction of Shaft 223 was initiated by augering a 36-inch diameter vertical hole into the mesa top. A 24-inch-diameter metal pipe (1/4 inch wall) with a length of 9 to 12 feet with a metal plate welded to the bottom was inserted into the hole as a liner. A ½ inch-wall inner pipe of 9- to 12-inch diameter and 7 to 12 feet in length with a metal plate welded to the bottom was centered in the larger pipe with a small amount of concrete to provide vertical alignment of the inner pipe in the outer pipe. Records with the specific dimensions for the pipes in Shaft 223 have not been located. A large metal funnel was placed in the inner pipe and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the inner pipe, concrete was placed in the annular space between the pipes and the top of the shaft and auger hole were capped with 3 to 4 inches of concrete. The result is that the pipe containing the waste packages is completely encased in concrete.





Location in Shaft Field

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S830782	2	Pu-239, U-235, MFP	25.01	13.0	0.004
S830783	2	Pu-239, U-235, MFP	3.04	1.58	0.008
S830784	2	Pu-239, U-235, MFP	3.04	1.58	0.008
S830785	2	Pu-239, U-235, MFP	3.04	1.58	0.008
S830786	2	Pu-239, U-235, MFP	1.52	0.79	0.004
S830791	2	Pu-239, U-235, MFP	1.54	0.80	0.008
TOTALS for Shaft 223	12	Pu-239, U-235, MFP	37.20	19.37	0.04

RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Waste Package Data Summary

Shaft 223 Totals

Total Number of Waste Packages	6	the first			
Total Gross Weight (pounds)	240				
Total Pu-239 (grams)	0	MASI			
Total U-235 (grams) 0					
Total Mixed Fission Products (Ci)	Mixed Fission Products (Ci) 37				
Total Pu-53 (grams)	0.5				
Total U-36 (grams)	2				
Dates of Disposal	12/14/1983 to	0 12/14/1983			
Radiation at Surface of Waste Package (mR/hr)	20,000 to 100,000 at disposal	10,000 to 52,000 decayed to 2009			
Radiation at One Meter from Surface of Waste Package (mR/hr)	1,500 to 25,000 70 to 370 * at disposal decayed to 2009				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Waste Package RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)								
TAN	- Wart			the ball	Pu-53	5.00E-02	g	Bel Bar									
S830782	12/14/1983	40	Cell 14 trash 1 can	Bottom entry 100 R	U-36	2.00E-01	g	100,000	25,000								
	ST WEELS		- the second		MFP	2.50E+01	Ci	X. 18									
30.0	1				Pu-53	1.00E-01	g										
S830783	12/14/1983	40	Cell 14 trash 1 can	Bottom entry steel can #3	U-36	4.00E-01	g	25,000	3,000								
Star In	And the second	10.27	Color States	MFP 3.00E+00 Ci													
	and the		the second states		Pu-53	1.00E-01	g										
S830784	12/14/1983	40	Cell 14 trash 1 can	Cell 14 trash 1 can	Cell 14 trash 1 can	Cell 14 trash 1 can	Cell 14 trash 1 can	Cell 14 trash 1 can	Cell 14 trash 1 can	Cell 14 trash 1 can	Cell 14 trash 1 can	Bottom entry steel can	U-36	4.00E-01	g	30,000	3,000
					MFP	3.00E+00	Ci										
1.0.0		2.54	Cell 14 trash 1 can		Pu-53	1.00E-01	g										
S830785	12/14/1983	40		Cell 14 trash 1 can	Cell 14 trash 1 can	Bottom entry steel can	U-36	4.00E-01	g	70,000	3,000						
1.80				# /	MFP	3.00E+00	Ci										
	and and a		Contraction of the		Pu-53	5.00E-02	g										
S830786	12/14/1983	40	Cell 14 trash 1 can	Steel can #2;	U-36	2.00E-01	g	20,000	1,500								
6 1 1		1000	Contraction of the local division of the loc		MFP	1.50E+00	Ci										
110	11100				Pu-53	1.00E-01	g		1000								
S830791	12/14/1983	40	Cell 16 trash 1 can	Cell 16 trash 1 can	Cell 16 trash 1 can	Bottom entry steel can	U-36	4.00E-01	g	32,000	1,500						
31603	631.19 E			#11	MFP	1.50E+00	Ci										

Material Disposal Area G, 33 Shafts Shaft 225 Waste Data Fact Sheet

Contents

Shaft 225 contains eight packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste in a one-gallon paint-type can that is inside a rigid plastic liner that is inside a 1/8" wall welded steel can. Wastes include hot-cell trash, spent-fuel sample preparation residues, cladding, tissue, and small tools. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remotehandled with the reported radiation dose at the surface of the packages at the time of generation ranging from 10,000 to 105,000 mrem/hour. The eight packages of waste were placed into Shaft 225 in November 1984 to December 1984.

Shaft Configuration

Construction of Shaft 225 was initiated by augering a 36-inch diameter vertical hole into the mesa top. An 1/4 inch wall inner pipe of 9-inch diameter and 9 feet in length was centered in the shaft with crushed tuff used to fill the space between the pipe and the shaft. A large metal funnel was placed in the inner pipe, and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the pipe, a latching lid with a lifting ring was placed onto the top of the pipe, and the shaft was protected by an inverted cut-down 55-gallon drum placed on top of the shaft.

Steel Inverted Latching Lid and Drum Lifting Ring

6

Welded Steel Can

with Plastic Liner

& One-Gallon Can

Steel Pipe

No

Bottom

Plate

Inside

Shaft 225 Configuration

Waste Package Data Summary

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S840848	1	Pu-239, U-235, MFP	0.41	0.22	0.0062
S840854	1	Pu-239, U-235, MFP	1.50	0.81	0.0062
S840856	1	Pu-239, U-235, MFP	1.50	0.81	0.0062
S840857	1	Pu-239, U-235, MFP	3.00	1.61	0.0062
S840863	1	Pu-239, U-235, MFP	0.09	0.05	0.0062
S840864	1	Pu-239, U-235, MFP	0.31	0.17	0.0062
S840867	1	Pu-239, U-235, MFP	0.41	0.22	0.0062
S840874	1	Pu-239, U-235, MFP	0.21	0.11	0.0062
TOTALS for Shaft 225	8	Pu-239, U-235, MFP	7.42	3.99	0.05

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Location in Shaft Field



Shaft 225 Totals

Total Number of Waste Packages	E E	3 (1994) (A. 1997)		
Total Gross Weight (pounds)	24	10		
Total Pu-239 (grams)	0.	.8		
Total U-235 (grams)	3.	2		
Total Mixed Fission Products at disposal (Ci)	7.38			
Dates of Disposal	11/16/1984 to	o 12/31/1984		
Radiation at Surface of Waste Package (mR/hr)	10,000 to 105,000 at disposal	5,300 to 56,000 decayed to 2009		
Radiation at One Meter from Surface of Waste Package (mR/hr)	80 to 3,000 40 to 400 * at disposal decayed to 200			

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

RSWD Number	Date Disposed	Gross Weight (lb)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)			
	A State of the		State of the second sec	15 Million	Pu-239	1.00E-01	g					
S840848	12/31/1984	30	Cell 13 waste plastic	Steel can #21	U-235	4.00E-01	g	40,000	400			
	11/19/1984		can #4070		MFP	4.00E-01	Ci					
		63			Pu-239	1.00E-01	g	1000	1. J. R.			
S840854	12/31/1984	30	Cell 13 waste plastic	Steel can #24	U-235	4.00E-01	g	50,000	1,500			
TAN	11/10/1984		Call #4055	the man property in	MFP	1.50E+00	Ci	A Carlo				
				IN ITS I	Pu-239	1.00E-01	g	1 ANA	TX C			
S840856	12/31/1984?	30	Cell 13 waste plastic	Cell 13 waste plastic	Steel can #31	U-235	4.00E-01	g	90,000	1,500		
A. 7784	11/10/1984:		Call #4043		MFP	1.50E+00	Ci					
North			30 Cell 13 waste plastic 1	Pu-239	1.00E-01	g						
S840857	12/31/1984	30		Cell 13 waste plastic	Cell 13 waste plastic	Cell 13 waste plastic	105 R/hr @ cont steel	U-235	4.00E-01	g	105,000	3,000
	AKC .		can #4033	call #30	MFP	3.00E+00	Ci					
Store L	and the set of the set		ALL COMPANY OF THE OWNER		Pu-239	1.00E-01	g		114.516			
S840863	12/31/1984	30	Cell 13 waste plastic	Cell 13 waste plastic	Steel can #40	U-235	4.00E-01	g	10,000	80		
1.1	11/19/1984		call #4040		MFP	8.00E-02	Ci	I W ST				
	No. of Street,				Pu-239	1.00E-01	g					
S840864	12/31/1984	30	Cell 13 waste plastic	Steel can #34	U-235	4.00E-01	g	25,000	300			
1111	11/19/1984		Call #4044		MFP	3.00E-01	Ci					
1.1.1					Pu-239	1.00E-01	g		Sec. 1			
S840867	12/31/1984	30	Cell 13 waste plastic	Steel can #38	U-235	4.00E-01	g	30,000	400			
F.F.F.	12/31/1304	can #4054	can #		can #4054	can #4054		MFP	4.00E-01	Ci		
Sec. Me					Pu-239	1.00E-01	g		ALMA LIK			
S840874	12/31/1984	84 84 30 Cell 14 trash can 4051 Steel can #43	Cell 14 trash can 4051	Cell 14 trash can 4051	Cell 14 trash can 4051	Cell 14 trash can 4051	30 Cell 14 trash can 4051	U-235	4.00E-01	g	15,000	200
	11/20/1984				MFP	2.00E-01	Ci					

Material Disposal Area G, 33 Shafts Shaft 226 Waste Data Fact Sheet

Contents

Shaft 226 contains eight packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste in a one-gallon paint-type can that is inside a rigid plastic liner that is inside a 1/8" wall welded steel can. Wastes include hot-cell trash, spent-fuel sample preparation residues, cladding, tissue, and small tools. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remotehandled with the reported radiation dose at the surface of the packages at the time of generation ranging from 15,000 to 300,000 mrem/hour. The eight packages of waste were placed into Shaft 226 in November 1984 to December 1984.

Shaft Configuration

Construction of Shaft 226 was initiated by augering a 36-inch diameter vertical hole into the mesa top. An 1/4 inch wall inner pipe of 9-inch diameter and 9 feet in length was centered in the shaft with crushed tuff used to fill the space between the pipe and the shaft. A large metal funnel was placed in the inner pipe, and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the pipe, a latching lid with a lifting ring was placed onto the top of the pipe, and the shaft was protected by an inverted cut-down 55-gallon drum placed on top of the shaft.



RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S840842	1	Pu-239, U-235, MFP	2.00	1.07	0.0062
S840843	1	Pu-239, U-235, MFP	2.00	1.07	0.0062
S840844	1	Pu-239, U-235, MFP	1.50	0.81	0.0062
S840845	1	Pu-239, U-235, MFP	0.31	0.17	0.0062
S840846	1	Pu-239, U-235, MFP	5.02	2.67	0.0062
S840847	1	Pu-239, U-235, MFP	1.50	0.81	0.0062
S840862	1	Pu-239, U-235, MFP	0.21	0.11	0.0062
S840868	1	Pu-239, U-235, MFP	0.31	0.17	0.0062
TOTALS for Shaft 226	8	Pu-239, U-235, MFP	12.85	6.88	0.05

Waste Package Data Summary

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Location in Shaft Field



Shaft 226 Totals

Total Number of Waste Packages	8				
Total Gross Weight (pounds)	24	0			
Total Pu-239 (grams)	0.8	8			
Total U-235 (grams)	3.2	2			
Total Mixed Fission Products at disposal (Ci)	12.8				
Dates of Disposal	11/14/1984 to	12/31/1984			
Radiation at Surface of Waste Package (mR/hr)	15,000 to 300,000 at disposal	8,000 to 159,000 decayed to 2009			
Radiation at One Meter from Surface of Waste Package (mR/hr)	200 to 5,000 60 to 1,130 * at disposal decayed to 2009				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)					
					Pu-239	1.00E-01	g	X						
S840842	12/31/1984	30	Cell 13 waste plastic	Steel can #20	U-235	4.00E-01	g	90,000	2,000					
	11/14/1984		Call #4030	1 Same	MFP	2.00E+00	Ci	- The						
					Pu-239	1.00E-01	g							
S840843	12/31/1984	30	Cell 13 waste plastic	Steel can #26	U-235	4.00E-01	g	80,000	2,000					
/ 11.	11/14/1984		Call #4045		MFP	2.00E+00	Ci		11					
Contraction of the	Sec. A. A.	L Saltan	Strange State	I A A CON	Pu-239	1.00E-01	g							
S840844	12/31/1984	30	Cell 13 waste plastic can #4023	Cell 13 waste plastic	Cell 13 waste plastic	Cell 13 waste plastic	Cell 13 waste plastic	Cell 13 waste plastic	Steel can #19	U-235	4.00E-01	g	70,000	1,500
NY 22	11/14/1984!			NTE IN	MFP	1.50E+00	Ci		MONTH!					
					Pu-239	1.00E-01	g							
S840845	12/31/1984?	30 Cell 13 waste plastic	Cell 13 waste plastic	Cell 13 waste plastic	Cell 13 waste plastic	Cell 13 waste plastic	Cell 13 waste plastic	Steel can #22	U-235	4.00E-01	g	21,000	300	
	11/14/1964!	the second	Call #4054	1 March	MFP	3.00E-01	Ci	3000	1 W Sec					
					Pu-239	1.00E-01	g		1000					
S840846	12/31/1984	30	Cell 13 waste plastic	Cell 13 waste plastic	300 R/hr @ cont Steel	U-235	4.00E-01	g	300,000	5,000				
	11/13/1984	1221	Call #4024	call #25	MFP	5.00E+00	Ci	N. Waster						
1. 1. 1. 1.	A State of the		a and the same the		Pu-239	1.00E-01	g							
S840847	12/31/1984	30	Cell 13 waste plastic	Steel can #23	U-235	4.00E-01	g	70,000	1,500					
	11/15/1984		Call #4022		MFP	1.50E+00	Ci							
			The second second second	No. of Lot of Lo	Pu-239	1.00E-01	g							
S840862	12/31/1984	30	Cell 13 waste plastic	13 waste plastic Steel can #39	U-235	4.00E-01	g	15,000	200					
1131	11/14/1964		Call #4027		MFP	2.00E-01	Ci		160					
Mar Con	2012				Pu-239	1.00E-01	g							
S840868	12/31/1984	30	Cell 13 waste plastic	plastic 5 Steel can #35	U-235	4.00E-01	g	35,000	300					
THE REAL PROPERTY.	11/13/1984		Call #4025		MFP	3.00E-01	Ci							

Material Disposal Area G, 33 Shafts Shaft 227 Waste Data Fact Sheet

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Shaft 227 contains eight packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste in a one-gallon paint-type can that is inside a rigid plastic liner that is inside a 1/8" wall welded steel can. Wastes include hot-cell trash, spent-fuel sample preparation residues, cladding, tissue, and small tools. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remotehandled with the reported radiation dose at the surface of the packages at the time of generation ranging from 15,000 to 400,000 mrem/hour. The eight packages of waste were placed into Shaft 227 during November to December 1984.

Shaft Configuration

Construction of Shaft 227 was initiated by augering a 36-inch diameter vertical hole into the mesa top. An 1/4 inch wall inner pipe of 9-inch diameter and 9 feet in length was centered in the shaft with crushed tuff used to fill the space between the pipe and the shaft. A large metal funnel was placed in the inner pipe, and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the pipe, a latching lid with a lifting ring was placed onto the top of the pipe, and the shaft was protected by an inverted cut-down 55-gallon drum placed on top of the shaft.



RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S840877	1	Pu-239, U-235, MFP	1.63	0.94	0.136
S840878	1	Pu-239, U-235, MFP	2.69	1.53	0.192
S840879	1	Pu-239, U-235, MFP	4.19	2.33	0.192
S840880	1	Pu-239, U-235, MFP	2.69	1.53	0.192
S840881	1	Pu-239, U-235, MFP	3.19	1.79	0.192
S840883	1	Pu-239, U-235, MFP	2.00	1.07	0.0062
S840885	1	Pu-239, U-235, MFP	6.19	3.40	0.198
S840886	1	Pu-239, U-235, MFP	0.81	0.43	0.0062
TOTALS for Shaft 227	8	Pu-239, U-235, MFP	23.40	13.01	1.11

Waste Package Data Summary

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Location in Shaft Field



Shaft 227 Totals

Total Number of Waste Packages	8				
Total Gross Weight (pounds)	240				
Total Pu-239 (grams)	18				
Total U-235 (grams)	77.9				
Total Mixed Fission Products at disposal (Ci)	22.3				
Dates of Disposal	11/28/1984 to 12/31/1984				
Radiation at Surface of Waste Package (mR/hr)	15,000 to 400,000 at disposal	8,000 to 212,000 decayed to 2009			
Radiation at One Meter from Surface of Waste Package (mR/hr)	800 to 6,000 60 to 1,500 * at disposal decayed to 200				

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)	
					Pu-239	2.20E+00	g		0 1,500	
S840877	12/31/1984	30	Cell 14 trash can 4050, fuel inside	Steel can 42	U-235	8.90E+00	g	80,000		
					MFP	1.50E+00	Ci	-272		
					Pu-239	3.10E+00	g		2,500	
S840878	12/31/1984	30	Cell 14 trash can, fuel	250 R/hr @contact, Steel can 46	U-235	1.44E+01	g	250,000		
/ 11.					MFP	2.50E+00	Ci			
Contraction of the	St. March		the second s	1 1 1 21	Pu-239	3.10E+00	g			
S840879	12/31/1984 11/28/1984	30	Cell 14 trash can 4041, fuel inside	300 R/hr contact, Steel can 44	U-235	1.44E+01	g	300,000	4,000	
					MFP	4.00E+00	Ci			
JET.					Pu-239	3.10E+00	g			
S840880	12/31/1984	30	Cell 14 trash can 4048,	Steel can 45, contact	U-235	1.44E+01	g	350,000	2,500	
- Aller	11/29/1984		ruermside	reading 550 K	MFP	2.50E+00	Ci		™	
				Contact 200 R/hr. Steel	Pu-239	3.10E+00	g			
S840881	12/31/1984 11/28/1984	12/31/1984 30	30	Cell 14 trash can 4057,	can 51	U-235	1.44E+01	g	200,000	3,000
		1.5	Tuermslue		MFP	3.00E+00	Ci			
Real States	and the second				Pu-239	1.00E-01	g			
S840883	12/31/1984	30	Cell 14 trash can 4064	Contact 100 R/hr, Steel	U-235	4.00E-01	g	100,000	2,000	
10545	11/29/1984		STREET, STREET,	can 48	MFP	2.00E+00	Ci	ACTIVITA.		
				No. Contraction	Pu-239	3.20E+00	g			
S840885	12/31/1984	30	Cell 14 trash can 4156,	Contact 400 R/hr, Steel	U-235	1.06E+01	g	400,000	6,000	
1.1.1	11/28/1984		Tuer Inside	Call 49	MFP	6.00E+00	Ci		Tall	
New York					Pu-239	1.00E-01	g			
S840886	12/31/1984	30	Cell 14 trash can 4084	Steel can 50	U-235	4.00E-01	g	15,000	800	
	11/29/1984			ALL NE ALL LE	MFP	8.00E-01	Ci			

Material Disposal Area G, 33 Shafts Shaft 229 Waste Data Fact Sheet

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Shaft 229 contains seven packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste in a one-gallon paint-type can that is inside a rigid plastic liner that is inside a 1/8" wall welded steel can. Wastes include hot-cell trash, spent-fuel sample preparation residues, cladding, tissue, and small tools. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remotehandled with the reported radiation dose at the surface of the packages at the time of generation ranging from 10,000 to 200,000 mrem/hour. The seven packages of waste were placed into Shaft 229 during November and December 1984.

Shaft Configuration

Construction of Shaft 229 was initiated by augering a 36-inch diameter vertical hole into the mesa top. An 1/4 inch wall inner pipe of 9-inch diameter and 9 feet in length was centered in the shaft with crushed tuff used to fill the space between the pipe and the shaft. A large metal funnel was placed in the inner pipe, and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the pipe, a latching lid with a lifting ring was placed onto the top of the pipe, and the shaft was protected by an inverted cut-down 55-gallon drum placed on top of the shaft.

Shaft 229 Configuration Steel Inverted Latching Steel Lid and Drum Lifting Ring Welded Steel Can with Plastic Liner 6 & One-Gallon Can Inside Steel Pipe No Bottom Plate

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci
S840851	1	Pu-239, U-235, MFP	3.00	1.61	0.0062
S840855	1	Pu-239, U-235, MFP	1.01	0.54	0.0062
S840860	1	Pu-239, U-235, MFP	2.00	1.07	0.0062
S840865	1	Pu-239, U-235, MFP	0.11	0.06	0.0062
S840873	1	Pu-239, U-235, MFP	2.18	1.25	0.186
S840882	1	Pu-239, U-235, MFP	0.31	0.17	0.0062
S840888	1	Pu-239, U-235, MFP	0.16	0.09	0.0062
TOTALS for Shaft 229	7	Pu-239, U-235, MFP	8.77	4.79	0.22

Waste Package Data Summary

* RSWD = Radioactive Solid Waste Disposal record

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Location in Shaft Field



Shaft 229 Totals

Total Number of Waste Packages					
Total Gross Weight (pounds)	al Gross Weight (pounds) 210				
Total Pu-239 (grams)	3.6				
Total U-235 (grams)	14.4				
Total Mixed Fission Products at disposal (Ci)	8.55				
Dates of Disposal	11/19/1984 to 12/31/1984				
Radiation at Surface of Waste Package (mR/hr)	10,000 to 200,000 at disposal	5,300 to 106,000 decayed to 2009			
Radiation at One Meter from Surface of Waste Package (mR/hr)	100 to 3,000 at disposal	40 to 750 * decayed to 2009			

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
	12/31/1984	30	Cell 13 waste plastic can #4028	200 R/hr @ cont, Steel	Pu-239	1.00E-01	g	200,000	3,000
S840851					U-235	4.00E-01	g		
				Call #20	MFP	3.00E+00	Ci		
	St. How			ATTACK AND SECTION OF A DESCRIPTION OF A	Pu-239	1.00E-01	g	110.2	
S840855	12/31/1984	30	Cell 13 waste plastic can 4145	Steel can #27	U-235	4.00E-01	g	40,000	1,000
144.	11/25/1584				MFP	1.00E+00	Ci		
S840860	S. W. P. S.		The second second second		Pu-239	1.00E-01	g	Y AL	150,000 2,000
	12/31/1984 11/29/1984	30	Cell 13 waste plastic can #4026	150 R/hr @ cont, Steel can #36	U-235	4.00E-01	g	150,000	
TV 33					MFP	2.00E+00	Ci		
JET.	Land		Contraction of the	and the second	Pu-239	1.00E-01	g		
S840865	12/31/1984 11/20/1984	84 84 30	Cell #13 waste plastic can #4055	Steel can #37	U-235	4.00E-01	g	10,000	100
1945					MFP	1.00E-01	Ci		
				100 Rhr contact. Steel	Pu-239	3.00E+00	g		No.
S840873	12/31/1984	30	Cell 14 trash can 4065	can 41	U-235	1.20E+01	g	100,000	2,000
1. 1. 1.	11/15/1504				MFP	2.00E+00	Ci		
Starting and	1 - Cart				Pu-239	1.00E-01	g		
S840882	12/31/1984	30	Cell 14 trash can 4066	Steel can 47 - 4.1 ft3	U-235	4.00E-01	g	18,000	300
	11/2//1984			Shart	MFP	3.00E-01	Ci		
\$840888			The second second	Section States	Pu-239	1.00E-01	g		
	12/31/1984	30	30 Cell 14 trash can 4075	Steel can 52	U-235	4.00E-01	g	10,000	1,500
	11/26/1984				MFP	1.50E-01	Ci		
Material Disposal Area G, 33 Shafts Shaft 230 Waste Data Fact Sheet

Contents

Shaft 230 contains eight packages of waste from the Chemistry and Metallurgy Research (CMR) Facility Wing 9 hot cells, with each package containing waste in a one-gallon paint-type can that is inside a rigid plastic liner that is inside a 1/8" wall welded steel can. Wastes include hot-cell trash, spent-fuel sample preparation residues, cladding, tissue, and small tools. Major radionuclides in the waste consist of plutonium-239, uranium-235, and mixed fission products (MFP). Waste is considered to be remotehandled with the reported radiation dose at the surface of the packages at the time of generation ranging from 30,000 to 1,000,000 mrem/hour. The eight packages of waste were placed into Shaft 230 in December 1984.

Shaft Configuration

Construction of Shaft 230 was initiated by augering a 36-inch diameter vertical hole into the mesa top. An 1/4 inch wall inner pipe of 9-inch diameter and 9 feet in length was centered in the shaft with crushed tuff used to fill the space between the pipe and the shaft. A large metal funnel was placed in the inner pipe, and waste packages were dropped into the inner pipe from a shielded transport cask moved into position above the shaft. After all waste packages were placed into the pipe, a latching lid with a lifting ring was placed onto the top of the pipe, and the shaft was protected by an inverted cut-down 55-gallon drum placed on top of the shaft.



Location in Shaft Field



Waste Package Data Summary

RSWD * Number	Volume (gallons)	Radionuclides	Total Curies at Disposal	Total Curies Decayed to 2009	PE-Ci	
S840831	1	Pu-239, U-235, MFP	40.90	24.60	5.95	
S840835	1	Pu-239, U-235, MFP	9.99	5.34	0.0062	
S840836	1	Pu-239, U-235, MFP	0.41	0.22	0.0062	
S840838	1	Pu-239, U-235, MFP	5.02	2.67	0.0062	
S840839	1	Pu-239, U-235, MFP	1.50	0.81	0.0062	
S840840	1	Pu-239, U-235, MFP	1.01	0.54	0.0062	
S840841	1	Pu-239, U-235, MFP	0.71	0.38	0.0062	
S840859	1	Pu-239, U-235, MFP	1.01	0.54	0.0062	
TOTALS for Shaft 230	8	Pu-239, U-235, MFP	60.57	35.12	5.99	

* RSWD = Radioactive Solid Waste Disposal record

This fact sheet was compiled from information judged to be the most reliable and accurate available. Waste information from the 1970's and 1980's has gaps and is sometimes inconsistent between various records or reports.

Shaft 230 Totals

Total Number of Waste Deckares					
Total Number of Waste Packages					
Total Gross Weight (pounds)	240				
Total Pu-239 (grams)	96.7				
Total U-235 (grams)	247.8				
Total Mixed Fission Products at disposal (Ci)	54.6				
Dates of Disposal	10/05/1984 to 12/31/1984				
Radiation at Surface of Waste Package (mR/hr)	30,000 to 1,000,000 at disposal	16,000 to 212,000 decayed to 2009			
Radiation at One Meter from Surface of Waste Package (mR/hr)	400 to 35,000 at disposal	110 to 1,500 * decayed to 2009			

* Calculated using inverse square rule assuming a point source at the center of the waste package paint cans

Detailed Waste Package Data at Disposal

RSWD Number	Date Disposed	Gross Weight (Ib)	Waste Description	Additional Description of Packaging and Packaging Materials	Nuclide or Material Type	Amount	Units	Package Radiation at Surface (mR/hr)	Package Radiation at 1 meter (mR/hr)
S840831 12/31/19	A Walter		Cell 9 hot waste can #4017, Steel can 13;	+1000 Rhr contact, 35 Rhr at meter ;	Pu-239	9.60E+01	g	1,000,000	35,000
	12/31/1984	30			U-235	2.45E+02	g		
	- TAN				MFP	3.50E+01	Ci		
S840835 12/31/1984 11/08/1984	28 /· 1	30	Cell 13 waste plastic can 4153	100 R/hr @ contact, Steel can 16	Pu-239	1.00E-01	g	100,000	1,000
	12/31/1984				U-235	4.00E-01	g		
	11/08/1984	S III:			MFP	1.00E+01	Ci		
S840836 12/31/1984 10/05/1984	Sec. A.S.		Cell 13 waste plastic can 3974	Steel can 15	Pu-239	1.00E-01	g	30,000	400
	12/31/1984	984 984 30			U-235	4.00E-01	g		
	10/03/1984				MFP	4.00E-01	Ci		
S840838 12/31/1: 11/08/1:	A CONTRACTOR	Test 9	Cell 13 waste plastic can 4154	400 R/hr @ cont, Steel can 14	Pu-239	1.00E-01	g	400,000	5,000
	12/31/1984	4 4 30			U-235	4.00E-01	g		
	11/08/1984				MFP	5.00E+00	Ci		
5840839 12/31/ 11/09/	and the second	30	Cell 13 waste plastic can 4155	Steel can 18	Pu-239	1.00E-01	g	90,000	1,500
	12/31/1984				U-235	4.00E-01	g		
	11/09/1984				MFP	1.50E+00	Ci		
S840840 12/31/1		31/1984 30	Cell 13 waste plastic can 4037	Steel can 29	Pu-239	1.00E-01	g	90,000	1,000
	12/31/1984				U-235	4.00E-01	g		
					MFP	1.00E+00	Ci		
S840841 12/3 11/0	11 200	30	Cell 13 waste plastic can 4036	Steel can 17	Pu-239	1.00E-01	g	90,000	1,000
	12/31/1984 11/09/1984				U-235	4.00E-01	g		
					MFP	1.00E+00	Ci		
S840859	12/31/1984 11/13/1984	2/31/1984 1/13/1984 30	Cell 13 waste plastic can 4031	Steel can 33	Pu-239	1.00E-01	g	60,000	700
					U-235	4.00E-0 <u>1</u>	g		
					MFP	7.00E-0 <u>1</u>	Ci		