OFFICE MEMORANDUM

TO: W. F. Thomas

DATE: May 21, 1982

FROM: A. J. Legeay

SUBJECT: Uranium Material Releases

Attached is a listing of accidental material releases of one kilogram uranium or greater occurring at the ORGDP for the period from start-up through May 1, 1982. These data were obtained from the best available records where measured values were given. In some instances, primarily during the early years, the isotopic value of the release can only be inferred as normal, depleted, or enriched, based on the plant location of the release and the known operation at that location.

A. J. Legeay

AJL:ojr

Attachment

cc/att: J. F. Hudson
J. E. Shoemaker/L. E. Wheeler
File - AJL (NoRC)

UCN-3841
(12356 6-70)

APPROVAL FOR RELEASE

Document: # Unnumbered ; Date 5/21/82 ;

Title/Subject AJ Legeay to WF Thomas, Uranium Material Releases -- Office Memo & 9 pages

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1/19/93

K-25 Classification & Information Control Officer Date

#652

DATE	PLANT LOCATION	MATERIAL TYPE	URAN. GRAMS	ASSAY WT. % U-235	CAUSE
04-28-45	K-302-5	UF_6	9,200	Product	Product drain line valve bellows ruptured.
11-09-46	K-306-7	UF_6	1,183	60.00	Release from cylinder valve during cap removal.
07-26-48	K-1405	Solution	1,492	NA	Failure to plug opening in equipment.
09-28-48	K-1303	Solution	2,132	NA	Corroded equipment leaked.
09-28-48	K-1405	UO_2	4,517	NA	Powder blown to atmosphere.
04-29-49	K-1405	Solution	1,599	NA	Corroded tank leaked.
05-02-49	K-1405	Solution	1,592	NA	Corroded tank leaked.
09-04-49	K-631	UF_6	45,081	Tails	Kerotest cylinder valve broke off near weld.
04-14-50	K-1405	UF_6	9,200	NA	Cold trap leak due to defective valve.
04-17-50	K-1405	UF_6	3,373	NA	Cold trap inlet valve leaked.
06-28-50	K-1405	UF_6	122,668	0.71	Hydraulic rupture of over filled cylinder.
04-28-51	K-1405	UF_6	28,046	Depleted	Valve leak on by-pass to exhaust stack.
06-03-51	K-1405	UF_6	10,735	NA	Line leak when purged.
07-12-51	K-1405	UF_6	3,067	0.71	Leaking gaskets in pilot plant.
07-02-51	Vault 16A	Solution	79,582	0.71	Leak from corroded drums.
07-20-51	K-1131	UF_6	43,612	0.71	Leaking valve seat on purge line.
08-05-51	K-1131	UF_6	61,334	Depleted	Fracture of cylinder end plate.
08-09-51	K-1405	UF_6	12,269	0.71	Plugged line leaked when opened.
08-24-51	K-602-4	UF_6	1,227	0.49	Seal failure.

NA=NOT AVAILABLE

DATE	PLANT LOCATION	MATERIAL TYPE	URAN. GRAMS	ASSAY WT. % U-235	CAUSE
09-14-51	K-1405	UF_6	3,401	0.71	Spilled from barrier tube.
09-22-51	K-631	UF_6	14,008	Depleted	Thermowell leak on charge line to AC pump.
11-05-51	K-1405	UF_6	3,067	0.71	Loose flange connection.
11-08-51	K-1405	UF_6	3,401	NA	Unknown.
11-14-51	K-1405	UF_6	3,066	0.71	Line cut to release plug.
11-21-51	K-402-8	UF_6	1,534	0.52	Valving error.
01-03-52	K-631	UF_6	1,165	0.69	Plugged line vaporized when opened.
01-16-52	K-413	UF_6	3,665	0.71	Opened valve, safety cap removed.
04-01-52	K-1004A	UF_6	1,108	0.45	Overfilled sample cylinder leaked.
05-19-52	K-631	UF_6	1,533	4.83	Faulty gasket on cylinder valve leaked.
05-20-52	K-1401	UF_6	7,666	0.71	Stokes pump casing burst.
05-27-52	K-1401	UF_6	7,688	0.71	Stuck valve to Stokes pump.
06-52	Laboratory	NA	1,108	NA	NA.
07-18-52	Vault 16A	Solution	1,815	NA	Corroded drum leak.
08-52	Cascade	UF_6	1,534	NA	NA.
08-52	Development	UF_6	7,011	NA	NA.
09-09-52	K-131	UF_6	20,672	0.71	Ruptured feed pigtail.
09-19-52	K-1131	UF_6	306,718	0.71	High pressure in cold trap due to HF, caused rupture disk to release pressure.
10-03-52	K-631	UF_6	[illegible],335	NA	Bad gasket on pigtail connection.

NA=NOT AVAILABLE

DATE	PLANT LOCATION	MATERIAL TYPE	URAN. GRAMS	ASSAY WT. % U-235	CAUSE
10-06-52	K-1131	UF_6	15,333	0.71	Ruptured cold trap tube.
10-10-52	K-631	UF_6	4,600	0.43	Pressure instrument on feed line broke.
11-03-52	K-413	UF_6	3,067	0.46	Cut into process line.
12-01-52	K-1303	Uranyl Nitrate	7,488	Enriched	Leak from product evaporator.
12-03-52	K-1301	UF_6	1,626	0.43	Leak from cylinders on transfer operation.
12-29-52	K-306-7	UF_6	1,534	Product	Ruptured bellows on a B-4 pump.
12-30-52	K-306-7	UF_6	6,133	Product	Ruptured sample line.
12-30-52	K-402-1	UF_6	768,520	0.56	Valve failure on a liquid feed cylinder.
12-52	Coded Chem.	Solution	1,626	NA	Leak from corroded drum.
01-08-53	K-131	UF_6	59,193	Feed	Defective cylinder valve.
01-13-53	K-631	UF_6	138,015	0.65	Hose blew off drain line.
04-15-53	K-631	UF_6	1,534	0.65	Bearing failure on compressor.
05-10-53	K-631	UF_6	15,336	0.65	NA.
05-10-53	K-633	UF_6	6,133	NA	Cold trap vented to alumina trap which over loaded and vented to atmosphere.
05-25-53	K-413	UF_6	37,849	0.71	Cylinder exploded, oil UF_6 mixture.
06-01-53	K-1131	UF_6	269,143	0.67	Valve retaining nut split, upper part of valve blown from body.
08-02-53	K-413	UF_6	5,000	0.80	Release when alumina traps opened.

NA-NOT AVAILABLE

DATE	PLANT LOCATION	MATERIAL TYPE	URAN. GRAMS	ASSAY WT. % U-235	CAUSE
09-06-53	K-402-4	UF_6	23,003	0.71	Valve opened in error.
09-07-53	K-131	UF_6	3,067	1.21	Cylinder valve broke.
09-09-53	K-1401	UF_6	5,521	0.71	Plugged line caused cylinder rupture.
09-13-53	Vault 16A	Solution	14,156	0.67	Corroded container leaked.
09-30-53	K-402-8	UF_6	29,730	0.88	Cold trap heated up and vaporized UF_6.
10-01-53	Vault 15A	Solution	3,288	0.67	Corroded drums leaked.
10-01-53	Vault 16A	Solution	7,339	0.84	Corroded drums leaked.
10-30-53	K-1131	UF_6	15,335	0.67	Cold trap warmed up vaporizing UF_6.
12-19-53	K-1131	UF_6	3,067	0.71	Burned gasket on pigtail.
12-22-53	K-1131	UF_6	2,147	0.71	Over pressure in F_2 scrubber.
12-29-53	K-101	UF_6	3,067	21.62	Broken sight glass.
2-12-54	K-131	UF_6	1,534	1.83	Pressure control valve ruptured.
3-8-54	Vault 15	Solution	3,149	0.67	Leak from corroded storage drums.
3-31-54	Vault 16A	Solution	22,047	0.83	Corroded containers leaked.
4-5-54	K-131	Solution	55,987	0.75	Corroded drum leaked.
4-18-54	K-1301	Solution	1,198	0.92	Corroded drum leaked.
6-15-54	K-1401	UF_6	1,000	0.71	Ruptured cylinder.

NA=NOT AVAILABLE

DATE	PLANT LOCATION	MATERIAL TYPE	URAN. GRAMS	ASSAY WT. % U-235	CAUSE
6-23-54	K-633	UF_6	15,333	0.66	Pigtail broke on feed cylinder.
6-54	K-633	UF_6	15,336	0.67	Leaked from valve when removed from system.
8-30-54	K-631	UF_6	3,067	0.71	Seal change-out on Beach-Russ pump, leak from oil system.
10-10-54	K-1004L	UF_6	3,067	0.65	Defective seal in pilot plant leaked.
12-22-54	K-413	UF_6	3,067	1.30	Leaked from Beach-Russ pump.
3-10-55	K-33	UF_6	144,815	0.71	Cylinder and pigtail explosion and rupture.
3-16-55	K-631	UF_6	3,012	0.50	Seal failure on Elliott compressor.
4-19-55	K-633	UF_6	15,333	Depleted	Copper feed line ruptured.
9-12-55	K-1420	Solution	2,756	0.44	Piped to holding pond in error.
10-30-55	K-33	UF_6	1,840	PPF	Cylinder valve leak.
11-8-55	K-1131	UF_6	3,067	0.65	Plugged line caused pressure blow back to tower.
11-20-55	Vault 16	Solution	1,555	3.47	Corroded drum leaked.
12-14-55	Vault 16	Solution	9,117	0.69	Corroded drum leaked.
12-26-55	K-413	UF_6	2,147	1.44	Cylinder valve leak.
1-15-56	Vault 15A	Acid Sol.	36,642	Depleted	Corroded drum leaked.
1-20-56	K-33 Feed Rm	UF_6	1,533	0.71	Leak at valve threads on feed cylinder.
3-19-56	K-33	UF_6	1,208	1.49	NA.
4-4-56	Vault 15A	Solution	1,734	0.88	Corroded drum leaked.

NA=NOT AVAILABLE

DATE	PLANT LOCATION	MATERIAL TYPE	URAN. GRAMS	GRAMS WT. % U-235	CAUSE
4-9-56	Vault 15A	Solution	2,571	0.86	Corroded drum leaked.
4-9-56	Vault 16A	Solution	1,886	2.87	Corroded drums leaked.
4-9-56	Vault 16A	Solution	1,897	1.74	Corroded drums leaked.
4-9-56	Vault 16A	Solution	11,583	2.61	Corroded drums leaked.
5-6-56	K-633	UF_6	1,534	0.33	Blown gasket in test loop.
5-31-56	Vault 15A	Solution	1,286	0.86	Corroded drums leaked.
6-13-56	K 303	UF_6	1,534	0.33	NA.
8-31-56	K-1131	UF_6	30,672	0.67	Gasket on UF_6 pump failed.
9-09-56	K-1004L	UF_6	3,066	0.71	Cylinder connection failed.
9-20-56	K-601	UF_6	4,673	0.71	Rupture disk blown out.
12-56	Vaults 15, 16, 7A	Solution	40,752	1.65	Corroded drums leaked.
1-7-57	K-1131	UF_6	1,840	0.67	Powder seal lost in process.
2-22-57	K-1131	UF_6	1,534	0.65	Faulty cylinder valve.
2-57	Vault 15A	Solution	39,682	NA	Leak from corroded drums.
10-10-57	K-413	UF_6	3,041	1.51	Copper tube burned from a reaction in oil mist filter.
1-12-58	K-33 Feed	UF_6	4,600	0.71	Faulty pigtail connection.
1-58	Vault	UF_6	3,041	NA	Hole burned in mist filter.
1-25-58	K-631	UF_6	[illegible]	0.39	Valve bellows rupture.

NA=NOT AVAILABLE

DATE	PLANT LOCATION	MATERIAL TYPE	URAN. GRAMS	ASSAY WT. % U-235	CAUSE
2-9-58	K-631	UF_6	1,533	Depleted	Faulty pigtail connection.
3-20-58	K-33	UF_6	22,080	0.71	Cylinder valve failure.
4-58	Vault	UF_6	4,601	0.65	Valve bellows rupture.
9-2-58	K-1004L	UF_6	7,666	0.71	Seal failure, pilot plant.
9-11-58	K-1004A	UF_6	1,043	0.71	Faulty cylinder connection.
9-58	Development	UF_6	7,666	0.65	Leak from pilot plant.
9-58	K-1131	UF_6	374,212	0.71	Loss in transferring material.
9-58	K-1131	UF_6	799,679	0.71	Ruptured filter in hydrogen reduction system.
2-27-59	K-1420	Acid Solution	2,819	0.67	Corroded base caused pump flange failure.
4-3-59	K-304-2	Solution	6,400	NA	Drain line leak.
6-15-59	K-1059	NA	2,105	0.62	NA
2-24-60	K-1131	UF_6	214,960	0.71	Ruptured coil in E cold trap.
2-27-60	K-1131	UF_6	460,008	0.69	Ruptured tube in cold trap.
2-29-60	K-631	UF_6	38,894	0.71	Cylinder valve leaked.
5-7-60	K-1131	UF_6	184,003	0.65	Ruptured tube in F cold trap.
6-9-60	K-1420	UF_6	4,453	1.50	Drain line leak.
1-2-61	K-631	UF_6	1,533	Tails	Pigtail connection bad.
4-13-61	K-1131	UF_6	3,067	0.71	NA
5-10-61	K-1004A	UF_6	1,860	0.71	Valve bonnet broke off sample bottle.

NA=NOT AVAILABLE

DATE	PLANT LOCATION	MATERIAL TYPE	URAN. GRAMS	ASSAY WT. % U-235	CAUSE
5-13-61	K-1131	UF_6	92,000	Depleted	Secondary cold trap tube rupture.
5-19-61	K-1131	UF_6	6,100	Depleted	Secondary cold trap bypassed intermittently in trying to remove plug from process line; allowed release to vent stack.
6-3-61	K-33 Feed Rm	UF_6	1,840	0.71	Purged valve left open in error.
7-26-61	K-1131	UF_6	6,133	Depleted	Cracked pigtail.
9-29-61	K-1131	UF_6	1,533	0.71	Jet assembly burnt out on reactor.
11-13-61	K-1413	UF_6	193,200	Normal	Cylinder valve packing gland failed.
3-2-62	K-1413	UF_6		0.22	One-half inch process line ruptured.
3-1-62	K-1413	UF_6	19,933	Depleted	Ruptured copper tubing.
3-16-62	K-1420	UF_6	6,078	40.97	Cold trap valve failure.
3-2-64	K-1131	UF_6	3,067	0.36	Bad gasket on pigtail connection.
7-64	Vault	Solution	20,743	Enriched	NA
11-23-65	K-631	UF_6	4,600	Tails	Bellows rupture on transmitter.
8-67	K-1025	UF_6	1,239	72.00	Leaking cylinder in storage.
1-68	NA	NA	1,589	0.25	Tails rupture test.
5-5-69	K-1423	UF_6	6,746	0.71	Valve seat on cylinder leaked.
5-24-70	K-33 Feed Rm	UF_6	4,600	1.49	Control valve bellows in feed header cracked.
9-26-70	K-413	UF_6	1,533	NA	Drain line leakage.
12-16-70	K-1131	UF_6	153,314	0.71	Probable pigtail leak. Material contained in autoclave drained to Popular Creek.

NA=NOT AVAILABLE

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4-26-71	K-1401	UF_6	11,040	0.71	Copper Pigtail ruptured.
8-24-71	K-311-1	UF_6	7,663	3.40	Casing of Cell 5--1B pump ruptured.
11-25-73	K-633	UF_6	3,066	0.33	Block valve leak to air ejector.
7-16-73	K-1004A	UF_6	3,600	0.71	Ruptured valve on sample cylinder.
9-17-75	K-1423	UF_6	5,519	3.25	Cracked valve and cylinder wall (Nukem 8).
3-77	K-413	UF_6	3,070	2.90	Accidental release, pigtail pinch-off incomplete.
5-77	K-33	UF_6	1,533	0.79	Accidental release, leak around pump exhaust gasket.
3-19-78	K-1210	UF_6	4,302	NA	Gasket failure from overheating.
7-28-80	K-1413	UF_6	5,827	0.71	Valving error involving an MD cylinder.
12-01-80	K-1302	UF_6	1,533	3.18	Stack release caused by valving error.
5-27-81	K-29	UF_6	2,000	3.2	Release from cell following high temperature reaction.

NA=NOT AVAILABLE