

REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: ORRIDA NUCLEAR POWER STATION - UNIT 1

DOCKET NOS.: 50 - 10

YEAR: 1978

I. Gaseous Effluents	UNITS	JULY	AUG	SEPT	OCT	NOV	DEC	6 MO. TOTAL	TECH. SPEC. REF.
1. Gross Radioactivity Releases									
a) Total Release	curies	9.9E+04	1.2E+05	1.1E+05	1.3E+05	5.5E+01	1.0E+01	4.6E+05	
b) Maximum Release Rate	uCi/sec	5.9E+04	5.8E+04	5.1E+04	7.3E+04	1.4E+02	1.2E+02	7.3E+04	
c) Isotopes Released									
Kr-85m	curies	1.4E+03	1.7E+03	2.1E+03	2.0E+03	-	-	7.2E+03	
Kr-87	curies	7.2E+03	8.6E+03	6.5E+03	8.5E+03	-	-	3.1E+04	
Kr-88	curies	4.7E+03	6.9E+03	6.7E+03	6.6E+03	-	-	2.5E+04	
Xe-133	curies	1.7E+03	1.9E+03	1.8E+03	1.6E+03	5.5E+01	1.0E+01	7.1E+03	
Xe-135	curies	9.4E+03	1.2E+04	1.1E+04	9.6E+03	-	-	4.2E+04	
Xe-135m	curies	1.4E+04	1.6E+04	1.4E+04	1.8E+04	-	-	6.2E+04	
Xe-138	curies	6.1E+04	7.3E+04	6.8E+04	8.4E+04	-	-	2.9E+05	
d) Percent of Chimney Limit	%	6.62	8.08	7.56	8.80	0.01	0.01	5.17	
e) Average Release Rate	uCi/sec	3.7E+04	4.5E+04	4.2E+04	4.9E+04	2.1E+01	3.8E+00	2.9E+04	
2. Iodine Releases									
a) Isotopes Released									
I-131	curies	1.5E-01	1.2E-01	2.1E-01	2.4E-01	5.3E-03	1.1E-03	7.3E-01	
I-133	curies	1.4E+00	9.7E-01	2.3E+00	2.1E+00	-	-	6.8E+00	
I-135	curies	2.1E+00	1.8E+00	3.5E+00	3.6E+00	-	-	1.1E+01	
b) Percent of Chimney Limit	%	2.33	1.94	3.44	3.77	0.085	0.02	1.91	
c) Average Release Rate	uCi/sec	5.6E-02	4.7E-02	8.3E-02	9.0E-02	2.0E-03	3.9E-04	4.6E-02	

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REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: OAK RIDGE NUCLEAR POWER STATION - UNIT 1

DOCKET NOS.: 50-10

YEAR: 1978

1. Gaseous Effluents (continued)	UNITS	JULY	AUG	SEPT	OCT	NOV	DEC	6 MO. TOTAL	TECH. SPEC. REF.
3. Particulate Releases									
a) Gross Radioactivity (Bq)	milli-curies	40.18	56.00	91.39	79.68	3.20	1.34	271.79	
b) Gross Alpha Radioactivity	mCi								
c) Isotopes Released	mCi								
Cr-51	mCi								
Cr-54	mCi	0.13	0.03	0.01	0.12	0.11	0.02	0.42	
Co-58	mCi	0.24	0.06	0.14	0.43	0.62	0.25	1.74	
Co-60	mCi	1.50	0.18	0.58	1.99	1.30	0.89	6.44	
Sr-89	mCi	24.72	43.94	47.27	62.55	0.10	0.18	178.66	
Sr-90	mCi	0.61	0.09	0.10	0.10	0.02	0.02	.94	
Fr-95	mCi	-	-	0.06	-	0.15	-	0.21	
Am-95	mCi	-	0.04	0.09	0.18	0.11	-	0.42	
Ru-103	mCi	0.09	-	0.03	-	0.04	-	0.16	
I-131	mCi	0.65	0.36	0.36	1.35	0.08	-	2.80	
Cs-134	mCi	0.35	0.05	0.05	0.18	0.14	0.03	.80	
Cs-137	mCi	1.63	0.80	0.93	1.99	0.47	0.05	5.87	
Ba-140	mCi	10.26	10.43	41.51	10.66	-	-	72.86	
Ce-141	mCi	-	0.02	0.21	0.13	0.06	-	0.42	
Ce-144	mCi	-	-	0.05	-	-	-	0.05	
d) Percent of chimney limit	%	0.63	0.87	1.47	1.24	0.05	0.021	0.71	
e) Average release rate	uCi/sec	1.5E-02	2.1E-02	3.5E-02	3.0E-02	1.2E-03	5.0E-04	1.7E-02	
4. Sum of Iodines & Particulates									
a) Percent of Chimney Limit	%	2.96	2.81	4.91	5.01	0.14	0.04	2.63	
5. Gaseous Tritium									
a) Total Release	curies	9.0E00	1.6E01	1.8E01	5.0E-02	4.1E+00	3.2E+00	5.0E+01	
b) Average Release Rate	uCi/sec	3.4E00	5.8E00	7.1E00	1.9E-02	1.6E+00	1.2E+00	1.9E+01	

REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: DULLES NUCLEAR POWER STATION - UNIT 1

DOCKET NOS.: 50-10

YEAR: 1978

II. Liquid Effluents	UNITS	JULY	AUG	SEPT	OCT	NOV	DEC	6 MO. TOTAL	TECH. SPEC. REF.
1. Gross Radioactivity (<i>B-Y</i>)									
a) Total Release	Curies	1.2E-02	9.9E-03	1.6E-02	1.9E-02	1.4E-02	1.5E-02	8.6E-02	
b) Average Concentration Released	uci/ml	4.4E-10	3.7E-10	6.1E-10	6.9E-10	6.2E-10	7.0E-10	5.7E-10	6.6D.1.e.(1)
c) Maximum Concentration Released	uci/ml	2.1E-08	2.0E-08	2.5E-08	2.6E-08	2.8E-08	2.4E-08	2.8E-08	6.6D.1.e.(4)
d) Percent of Tech Spec Limit	%	0.44	0.37	0.61	0.69	0.62	0.70	0.57	6.6D.1.e.(5)
based on average conc. released									6.6D.1.e.(6)
2. Tritium									
a) Total Release	Curies	6.8E-04	8.0E-01	1.2E01	4.4E-04	1.4E-02	1.6E-02	1.3E+01	6.6D.1.e.(8)
b) Average Concentration Released	uci/ml	2.5E-11	3.0E-08	4.6E-07	1.6E-11	6.1E-10	7.3E-10	4.9E-07	
c) Percent of Tech Spec Limit	%	NONE	NONE	NONE	NONE	NONE	NONE	NONE	
3. Dissolved Noble Gases									
a) Total Release	Curies	NONE	NONE	NONE	NONE	NONE	NONE	NONE	
b) Average Concentration Released	uci/ml	-	-	-	-	-	-	-	
c) Percent of Tech Spec Limit	%	-	-	-	-	-	-	-	
4. Gross Alpha Radioactivity									
a) Total Release	Curies	2.4E-05	7.3E-06	1.5E-05	8.8E-06	2.4E-05	3.2E-05	1.1E-04	
b) Average Concentration Released	uci/ml	8.9E-13	2.7E-13	5.7E-13	3.3E-13	1.1E-12	1.5E-12	7.3E-13	
5. Volume of Liquid Waste to Discharge Canal	Liters	8.9E+04	8.0E+04	9.2E+04	9.9E+04	7.5E+04	8.6E+04	5.2E+05	6.6D.1.e.(2)
6. Volume of Dilution Water	Liters	2.7E+10	2.7E+10	2.6E+10	2.7E+10	2.3E+10	2.2E+10	1.5E+11	6.6D.1.e.(3)

REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: Dresden Nuclear Power Station - Unit 1

DOCKET NOS.: 50 - 10

YEAR: 1978

II. Liquid Effluents (continued)

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REPORT OF RADIOACTIVE EFFLUENTS

ENTITY: Dresden Nuclear Power Station-Units 2/3

DOCKET NOS.: 50-237, 50-249

YEAR: 1978

I. Gaseous Effluents	UNITS	JULY	AUG	SEPT	OCT	NOV	DEC	6 MO. TOTAL	TECH. SPEC. REF
1. Gross Radioactivity Releases									
a) Total Release 2/3 chimney	curies	6.1E+03	1.3E+03	3.6E+03	2.5E+03	1.7E+03	1.4E+03	1.7E+04	6.6D.1.f. (1)
b) Maximum Release Rate	uCi/sec	3.9E+04	1.8E+03	5.6E+03	2.7E+03	2.0E+03	2.6E+03	3.9E+04	6.6D.1.f. (2)
c) Isotopes Released									6.6D.1.f. (4)
Kr-85m	curies	5.5E+01	3.9E+01	1.4E+02	1.2E+02	6.0E+01	1.5E+01	4.3E+02	
Kr-87	curies	1.8E+02	2.7E+01	1.3E+02	7.3E+01	5.5E+01	8.8E+01	5.5E+02	
Kr-88	curies	2.7E+02	6.0E+01	2.9E+02	2.0E+02	1.1E+02	-	9.3E+02	
Xe-133	curies	3.1E+01	6.6E+01	1.6E+02	2.0E+02	1.1E+02	7.4E+02	1.3E+03	
Xe-135	curies	5.5E+02	3.8E+02	1.0E+03	1.0E+03	4.3E+02	7.8E+01	3.4E+03	
Xe-135m	curies	6.6E+02	1.2E+02	-	1.5E+02	5.9E+01	6.3E+01	1.1E+03	
Xe-138	curies	4.4E+03	6.0E+02	1.9E+03	7.4E+02	8.8E+02	4.2E+02	8.9E+03	
d) Percent of Chimney Limit	%	0.26	0.06	0.17	0.10	0.07	0.06	0.12	6.6D.1.f. (3)
e) Average Release Rate	uCi/sec	2.3E+03	4.8E+02	1.4E+03	9.4E+02	6.5E+02	5.2E+02	1.1E+03	
2. Chimney Iodine Releases									6.6D.1.f. (1)
a) Isotopes Released									
I-131	curies	3.8E-02	5.2E-02	1.0E-01	1.3E-01	3.4E-02	3.8E-02	3.9E-01	
I-133	curies	4.0E-01	4.7E-01	3.6E-01	7.9E-01	3.1E-01	6.1E-02	2.4E+00	
I-135	curies	7.1E-01	1.1E+00	4.0E-01	1.2E+00	5.3E-01	-	3.9E+00	
b) Percent of Chimney Limit	%	0.34	0.47	1.00	1.11	0.31	0.35	0.57	6.6D.1.f. (3)
c) Average Release Rate	uCi/sec	1.4E-02	1.9E-02	4.0E-02	4.8E-02	1.3E-02	1.4E-02	2.5E-02	

REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: Dresden Nuclear Power Station - Unit 2/3

DOCKET NOS.: 50-237, 50-249

YEAR: 1978

I. Gaseous Effluents(continued)	UNITS	JULY	AUG	SEPT	OCT	NOV	DEC	6 MO. TOTAL	TECH. SPEC. REF.
3. Chimney Particulate Release									
a) Gross Radioactivity(β - γ)	milli-curies	175.94	202.31	204.22	371.29	66.65	32.49	1052.90	6.6D.1.f.(1)
b) Gross Alpha Radioactivity	mCi								
c) Isotopes Released									6.6D.1.f.(1)
Cr-51	mCi	-	-	-	-	-	-	-	
Mn-54	mCi	1.21	-	1.57	1.04	-	0.09	3.91	
Cu-64	mCi	-	-	-	-	0.45	0.33	0.78	
Co-60	mCi	6.74	3.78	7.33	5.94	2.30	1.80	27.89	
Sr-90	mCi	67.35	84.00	53.73	137.56	29.79	20.27	392.70	
Sr-90	mCi	0.67	0.55	0.16	0.48	0.09	0.06	2.01	
I-131	mCi	4.38	6.78	53.73	59.48	8.33	3.76	136.46	
Cs-134	mCi	0.19	-	-	0.30	0.03	0.13	0.65	
Cs-137	mCi	1.11	1.01	1.66	2.53	0.54	0.20	7.05	
Ba-140	mCi	94.29	105.69	83.06	159.88	24.67	5.85	473.44	
Ce-141	mCi	-	0.50	2.98	4.08	0.45	-	8.01	
Ce-144	mCi	-	-	-	-	-	-	-	
d) Percent of Chimney Limit	%	1.54	1.86	1.98	3.22	0.60	0.31	1.54	6.6D.1.f.(3)
e) Average Release Rate	uCi/sec	6.6E-02	7.6E-02	7.9E-02	1.4E-01	2.6E-02	1.2E-02	6.6E-02	
4. Vent Stack Iodine Release									6.6D.1.f.(1)
a) Isotopes Released									
I-131	curies	1.2E-02	1.3E-02	1.8E-02	1.4E-02	1.1E-02	1.0E-02	7.8E-02	
I-133	curies	4.7E-02	6.4E-02	7.9E-03	7.7E-02	6.2E-02	4.8E-03	2.6E-01	
I-135	curies	1.1E-01	1.5E-01	-	1.5E-01	1.9E-01	-	6.0E-01	
b) Percent of Vent Stack Limit	%	3.68	4.06	5.66	4.44	3.38	3.23	4.09	6.6D.1.f.(3)
c) Average Release Rate	uCi/sec	4.4E-03	4.9E-03	6.8E-03	5.3E-03	4.1E-03	3.9E-03	4.9E-03	

REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: Dresden Nuclear Power Station - Unit 2/3

DOCKET NOS.: 50-237, 50-249

YEAR: 1978

I. Gaseous Effluents (Continued)	UNITS	JULY	AUG	SEPT	OCT	NOV	DEC	6 MO. TOTAL	TECH. SPEC. REF.
5. Vent Stack Particulate Release	milli-								
(a) Gross Radioactivity (B-Y)	curies	24.84	40.70	75.54	81.02	51.22	28.01	301.33	
(b) Gross Alpha Radioactivity	mCi								6.6D.1.f.(1)
(c) Isotopes Released									
Cr-51	mCi	6.19	9.59	14.14	16.53	10.60	2.91	59.96	6.6D.1.f.(1)
Mn-54	mCi	0.54	0.54	3.05	0.66	1.50	1.61	7.90	
Co-58	mCi	0.21	0.42	1.79	1.14	1.16	1.75	6.47	
Fe-59	mCi	-	0.14	0.50	0.46	1.03	0.15	2.28	
Co-60	mCi	2.95	3.24	20.61	5.85	7.17	10.85	50.67	
Zn-65	mCi	-	-	0.46	0.23	0.33	-	1.02	
Sr-89	mCi	1.49	0.46	1.53	1.85	2.20	1.72	9.25	
Sr-90	mCi	0.10	0.17	0.15	0.10	0.14	0.24	0.80	
Zr-95	mCi	0.06	-	0.19	0.44	0.35	-	1.04	
Nb-95	mCi	0.04	-	0.15	0.35	0.56	-	1.10	
Ru-103	mCi	-	0.11	0.11	0.41	0.83	-	1.46	
(continued on next page)									
(d) Percent Vent Stack Limit	%	7.73	12.66	24.29	25.21	16.47	8.72	15.80	6.6D.1.f.(3)
(e) Average Release Rate	uCi/sec	9.3E-03	1.5E-02	2.9E-02	3.0E-02	2.0E-02	1.0E-02	1.9E-02	
6. Sum of Iodine and Particulate									
a) Percent of Chimney Limit	%	1.88	2.33	2.98	4.33	0.91	0.66	2.11	6.6D.1.f.(3)
b) Percent of Vent Stack Limit	%	11.41	16.72	29.95	29.65	19.85	11.94	19.89	
7. Gaseous Iodine									
a) Release	curies	2.1E+01	2.9E+01	6.0E+01	3.5E+01	5.1E+01	3.2E+01	2.3E+02	
b) Average Release Rate	uCi/sec	7.9E+00	1.1E+01	2.3E+01	1.3E+01	1.9E+01	1.2E+01	8.6E+01	
c) Percent Stack Spec Limit	%	NA	NA	NA	NA	NA	NA	NA	

REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: DRESDEN NUCLEAR POWER STATION UNITS 2/3

DOCKET NOS.: 50-237, 50-249

YEAR: 1978

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REPORT OF RADIOACTIVE EFFLUENTS

ENTRY: Dresden Nuclear Power Station-Units 2/3

DOCKET NOS.: 50-237, 50-249

YEAR: 1978

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REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: DAMPEN NUCLEAR POWER STATION - UNIT 2/3

DOCKET NOS.: 50-237, 50-248

YEAR: 1978

II. Liquid Effluents	UNITS	JULY	AUG	SEPT	OCT	NOV	DEC	6 MO. TOTAL	TECH. SPEC. REF.
1. Gross Radioactivity (β - γ)									
a) Total Release (2/3 Radwaste)	Curies	0	0	0	0	0	0		
b) Average Concentration Released	uci/ml	0	0	0	0	0	0		
c) Maximum Concentration Released	uci/ml	0	0	0	0	0	0		
d) Percent of Tech Spec Limit	%	0	0	0	0	0	0		
based on average conc. released									
2. Tritium									
a) Total Release	Curies	0	0	0	0	0	0		
b) Average Concentration Released	uci/ml	0	0	0	0	0	0		
c) Percent of Tech Spec Limit	%	NA	NA	NA	NA	NA	N/A		
3. Dissolved Noble Gases									
a) Total Release	Curies	NONE	NONE	NONE	NONE	NONE	NONE		
b) Average Concentration Released	uci/ml	---	---	---	---	---	---		
c) Percent of Tech Spec Limit	%	---	---	---	---	---	---		
4. Gross Alpha Radioactivity									
a) Total Release	Curies	0	0	0	0	0	0		
b) Average Concentration Released	uci/ml	0	0	0	0	0	0		
5. Volume of Liquid Waste to Discharge Canal	Liters	0	0	0	0	0	0		
6. Volume of Dilution Water	Liters	0	0	0	0	0	0		

REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: Dresden Nuclear Power Station - Unit 2/3

DOCKET NOS.: 50-237, 50-249

YEAR: 1978

II. Liquid Effluents (continued)	UNITS	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	6 MO. TOTAL	TECH. SPEC. REP.
8. Gross Radioactivity (GR) LPCI Service H ₂ O Heat Exchanger	Milli-Curies	2.50	1.71	1.96	2.13	0.79	0.26	9.35	
a) Total Release									
b) Average Concentration Released*	uci/ml	1.5E-11	1.0E-11	1.2E-11	1.3E-11	5.3E-12	3.8E-12	1.1E-11	
c) Maximum Concentration Released*	uci/ml	2.5E-07	1.0E-07	1.0E-07	7.9E-08	7.7E-08	1.4E-07	2.5E-07	
d) Percent of Tech Spec Limit	%	0.02	0.01	0.01	0.01	<0.01	<0.01	0.01	
based on average conc released									
9. Tritium									
a) Total Release	Curies	5.8E-02	6.4E-02	1.5E-02	3.4E-02	5.2E-03	2.0E-3	1.8E-01	
b) Average Concentration Released	uci/ml	3.4E-10	3.8E-10	9.4E-11	2.1E-10	3.5E-11	2.9E-11	2.0E-10	
c) Percent of Tech Spec Limit	%	NA	NA	NA	NA	NA	NA	NA	
10. Dissolved Noble Gases									
a) Total Release	Curies	NONE	NONE	NONE	NONE	NONE	NONE	NONE	
b) Average Concentration Released	uci/ml	-	-	-	-	-	-	-	
c) Percent of Tech Spec Limit	%	-	-	-	-	-	-	-	
11. Gross Alpha Radioactivity									
a) Total Release	Curies	0	2.5E-07	1.8E-06	0	1.0E-06	0	3.1E-06	
b) Average Concentration Released	uci/ml	-	1.5E-15	1.1E-14	-	6.7E-15	-	3.5E-15	
12. Volume of Liquid Waste to Discharge Canal	Liters	2.2E+04	2.0E+05	1.1E+05	2.0E+05	6.6E+04	3.3E+04	6.3E+05	
13. Volume of Dilution Water	Liters	1.7E+11	1.7E+11	1.6E+11	1.6E+11	1.5E+11	6.8E+10	8.8E+11	

*Prior to dilution by 1275 acre cooling lake and subsequent discharge to Illinois River.

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FACILITY: Dresden Nuclear Power Station - Unit 2/3

DOCKET NOS.: 50-237, 50-242

YEAR: 1978

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REPORT OF RADIOACTIVE EFFLUENTS

SUBJECT: Dresden Nuclear Power Station

DOCKET NOS.: 50-10, 50-237, 50-249

YEAR: 1978

I. Solid Waste Shipped Offsite For Burial or Disposal

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DRESDEN NUCLEAR POWER STATION

SOLID WASTE DISPOSITION

YEAR 1978

MONTH	NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
JULY	25	Motor Transport Exclusive Use Vehicle	Barnwell, S.C.
AUG.	34	Exclusive Use Vehicle	Barnwell, S.C.
SEPT	20	EXclusive Use Vehicle	Barnwell, S.C.
OCT	25	Exclusive Use Vehicle	Barnwell, S.C.
NOV	34	Exclusive Use Vehicle	Barnwell, S.C.
DEC	21	Exclusive Use Vehicle	Barnwell, S.C.

Dresden Station

1978 Report of Occupational Personnel Radiation Doses

Commonwealth Edison Employees

Job Function	Work Function			
	Reactor Operations & Surveillance # of people/man-rem	Routine Maint. & Inservice Inspection # of people/man-rem	Waste Processing # of people/man-rem	Refueling # of people/man-rem
Maintenance	16/19.1	186/305.3	3/3.0	-
Operating	153/109.3	24/35.1	42/61.8	19/45.0
Health Physics	6/7.9	32/45.2	18/26.2	-
Supervisory	18/4.9	223/108.8	9/2.2	5/10.4
Engineering	294/56.3	-	-	-
Contract Workers				
Maintenance	-	2060/599.7	-	-

Special Maintenance

Company employees other than station employees: 141/40.2 - Repaired Control Rod Drive Mechanism
Return Nozzle which had developed cracks