

# REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: DRESDEN NUCLEAR POWER STATION - UNIT 1

DOCKET NOS.: 50 - 10

YEAR: 1984

I. Gaseous Effluents	UNITS	January	February	March	April	May	June	6 MO. TOTAL	TECH. SPEC. REF.
1. Gross Radioactivity Releases									
a) Total Release	curies	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	
b) Maximum Release Rate (daily grab sample)	uCi/sec	---	---	---	---	---	---	---	
c) Isotopes Released									
Kr-85m	curies								
Kr-87	curies								
Kr-88	curies								
Xe-133	curies								
Xe-135	curies								
Xe-135m	curies								
Xe-138	curies								
d) Percent of Chimney Limit	%	---	---	---	---	---	---	---	
e) Average Release Rate	uCi/sec	---	---	---	---	---	---	---	
2. Iodine Releases									
a) Isotopes Released									
I-131	curies	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	
I-133	curies	---	---	---	---	---	---	---	
I-135	curies	---	---	---	---	---	---	---	
b) Percent of Chimney Limit	%	---	---	---	---	---	---	---	
c) Average Release Rate	uCi/sec	---	---	---	---	---	---	---	

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# REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: DRESDEN NUCLEAR POWER STATION - UNIT 1

DOCKET NOS.: 50-10

YEAR: 1984

I. Gaseous Effluents (continued)	UNITS	January	February	March	April	May	June	6 MO. TOTAL	TECH. SPEC. REF.
3. Particulate Releases	milli-								
a) Gross Radioactivity (BY)	curies	4.10E-02	1.31E-01	2.21E-01	1.63E-02	6.58E-02	4.66E-02	5.22E-01	
b) Gross Alpha Radioactivity	mCi								
c) Isotopes Released	mCi								
Cr-51	mCi	----	----	----	----	----	----	----	
Mn-54	mCi	1.46E-03	2.91E-03	6.34E-03	----	----	----	1.07E-02	
Co-58	mCi	----	----	----	----	----	----	----	
Co-60	mCi	3.08E-02	1.12E-01	1.92E-01	1.26E-02	5.61E-02	3.89E-02	4.42E-01	
Sr-89 *	mCi	1.94E-04	1.35E-04	1.68E-04	1.79E-04	1.94E-04	2.43E-04	1.11E-03	
Sr-90 *	mCi	2.83E-04	2.10E-04	9.34E-05	1.19E-04	1.50E-04	1.87E-04	1.04E-03	
Zr-95	mCi	----	----	----	----	----	----	----	
Nb-95	mCi	----	----	----	----	----	----	----	
Ru-103	mCi	----	----	----	----	----	----	----	
I-131	mCi	----	----	----	----	----	----	----	
Cs-134	mCi	----	2.58E-03	4.19E-03	----	----	----	6.77E-03	
Cs-137	mCi	8.31E-03	1.31E-02	1.79E-02	3.43E-03	9.34E-03	7.23E-03	5.93E-02	
Ba-140	mCi	----	----	----	----	----	----	----	
Ce-141	mCi	----	----	----	----	----	----	----	
Ce-144	mCi	----	----	----	----	----	----	----	
d) Percent of chimney limit	%	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
e) Average release rate	uCi/sec	1.53E-05	5.23E-05	8.25E-05	6.33E-06	2.45E-05	1.79E-05	3.93E-05	
4. Sum of Iodines & Particulates									
a) Percent of Chimney Limit	%	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
5. Gaseous Tritium									
a) Total Release	curies	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	
b) Average Release Rate	uCi/sec	----	----	----	----	----	----	----	

\* Not Included in Monthly Report; Will be Included When Data is Available.

## REPORT OF RADIOACTIVE EFFLUENTS

**FACILITY:** DRESDEN NUCLEAR POWER STATION - UNIT 1

DOCKET NOS.: 50-10

**YEAR:** 1984

## II. Liquid Effluents

[illegible]

## REPORT OF RADIOACTIVE EFFLUENTS

**FACILITY:** Dresden Nuclear Power Station & Unit 1

DOCKET NOS.: 50 - 10

**YEAR:** 1984

## II. Liquid Effluents (continued)

[illegible]

# REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: Dresden Nuclear Power Station-Units 2/3

DOCKET NOS.: 50-237, 50-249

YEAR: 1984

I. Gaseous Effluents	UNITS	January	February	March	April	May	June	6 MO. TOTAL	TECH. SPEC. REF
1. Gross Radioactivity Releases									
a) Total Release 2/3 chimney	curies	5.14E+01	<LLD	<LLD	<LLD	9.89E+01	<LLD	1.50E+02	6.6D.1.f. (1)
b) Maximum Release Rate (daily grab sample)	uCi/sec	4.50E+01	---	---	---	1.52E+02	---	1.52E+02	6.6D.1.f. (2)
c) Isotopes Released									6.6D.1.f. (4)
Kr-85m	curies	----				----		---	
Kr-87	curies	----				----		---	
Kr-88	curies	----				----		---	
Xe-133	curies	----				9.89E+01		9.89E+01	
Xe-135	curies	5.14E+01				----		5.14E+01	
Xe-135m	curies	---				----		---	
Xe-138	curies	---				----		---	
Kr-85	curies	1.10E-03				1.12E-03		2.22E-03	
d) Percent of Chimney Limit	%	<0.01	---	---	---	0.01	---	<0.01	6.6D.1.f. (3)
e) Average Release Rate	uCi/sec	1.92E+01	---	---	---	3.69E+01	---	9.54E00	
2. Chimney Iodine Releases									6.6D.1.f. (1)
a) Isotopes Released									
-131	curies	1.60E-03	1.13E-03	1.14E-03	6.00E-04	2.04E-03	2.09E-03	8.60E-03	
-133	curies	1.25E-02	1.02E-02	9.78E-03	5.17E-03	2.05E-02	1.58E-02	7.40E-02	
-135	curies	2.69E-02	2.10E-02	1.64E-02	9.79E-03	4.24E-02	2.54E-02	1.42E-01	
b) Percent of Chimney Limit	%	0.02	0.01	0.01	0.01	0.02	0.03	0.02	6.6D.1.f. (3)
c) Average Release Rate	uCi/sec	5.97E-04	4.51E-04	4.26E-04	2.31E-04	7.62E-04	8.06E-04	5.47E-04	

# REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: Dresden Nuclear Power Station - Unit 2/3

DOCKET NOS.: 50-237, 50-249

YEAR: 1984

I. Gaseous Effluents(continued)		UNITS	January	February	March	April	May	June	6 MO. TOTAL	TECH. SPEC. REF.
3. Chimney Particulate Release										
a) Gross Radioactivity( $\beta$ - $\gamma$ )	curies		8.17E-03	5.75E-03	4.28E-03	2.16E-03	4.11E-03	3.08E-03	2.76E-02	6.6D.1.f.(1)
b) Gross Alpha Radioactivity										
c) Isotopes Released										6.6D.1.f.(1)
Cr-51	mCi	----	----	----	----	----	----	----	----	
Mn-54	mCi	2.46E-01	1.35E-01	7.78E-02	6.22E-02	5.47E-02	4.36E-02	6.19E-01		
Co-58	mCi	1.09E-02	----	----	----	----	----	1.09E-02		
Fe-59	mCi	----	----	----	----	----	3.36E-02	3.36E-02		
Co-60	mCi	3.35E00	2.91E00	1.47E00	9.38E-01	8.98E-01	5.06E-01	1.01E+01		
Zn-65	mCi	----	----	----	----	----	----	----		
Sr-89 *	mCi	1.11E00	6.65E-01	9.41E-01	2.00E-01	6.54E-01	8.11E-01	4.38E00		
Sr-90 *	mCi	9.89E-03	1.45E-02	5.70E-03	3.13E-03	6.06E-03	7.53E-03	4.68E-02		
Zr-95	mCi	----	----	----	----	----	----	----		
Nb-95	mCi	----	----	----	----	----	----	----		
Ru-103	mCi	----	----	----	----	----	----	----		
Ag-110m	mCi	----	----	----	----	----	----	----		
Continued on next page										
d) Percent of Chimney Limit	%		0.09	0.07	0.05	0.02	0.04	0.03	0.05	6.6D.1.f.(3)
e) Average Release Rate	uCi/sec		3.05E-03	2.29E-03	1.60E-03	8.33E-04	1.53E-03	1.19E-03	1.75E-03	
4. Vent Stack Iodine Release										6.6D.1.f.(1)
a) Isotopes Released										
I-131	curies		6.75E-05	9.22E-5	1.16E-04	1.92E-04	8.60E-05	6.22E-05	6.16E-04	
I-133	curies		4.60E-04	7.00E-04	1.18E-03	1.86E-03	6.08E-04	3.79E-04	5.19E-03	
I-135	curies		----	4.41E-04	2.06E-03	3.41E-03	3.35E-04	6.63E-04	6.91E-03	
b) Percent of Vent Stack Limit	%		0.02	0.03	0.04	0.06	0.03	0.02	0.03	6.6D.1.f.(3)
c) Average Release Rate	uCi/sec		2.52E-05	3.68E-05	4.33E-05	7.41E-05	3.21E-05	2.40E-05	3.92E-05	

## REPORT OF RADIOACTIVE EFFLUENTS

**FACILITY:** Dresden Nuclear Power Station - Unit 2/3

DOCKET NOS.: 50-237, 50-249

YEAR: 1984

[illegible]

# REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: Dresden Nuclear Power Station - Unit 2/3

DOCKET NOS.: 50-237, 50-249

YEAR: 1984

I. Gaseous Effluents (Continued)	UNITS	January	February	March	April	May	June	6 MO. TOTAL	TECH. SPEC. REF.
5. Vent Stack Particulate Release									
(a) Gross Radioactivity (B-γ)	curies	1.71E-03	1.78E-03	4.50E-03	9.20E-03	9.00E-04	1.22E-03	1.93E-02	
(b) Gross Alpha Radioactivity	mCi								6.6D.1.f.(1)
(c) Isotopes Released									
Cr-51	mCi	8.03E-02	8.83E-02	4.86E-01	2.50E00	6.26E-02	9.04E-02	3.31E00	6.6D.1.f.(1)
Mn-54	mCi	1.06E-01	6.27E-02	2.50E-01	1.99E-01	5.13E-02	8.50E-02	7.54E-01	
Co-58	mCi	3.25E-02	2.70E-02	2.24E-01	1.15E00	3.23E-02	5.57E-02	1.52E00	
Fe-59	mCi	8.53E-03	-----	4.67E-02	9.25E-02	8.17E-03	2.65E-02	1.82E-01	
Co-60	mCi	1.29E00	1.39E00	3.17E00	4.48E00	6.49E-01	8.83E-01	1.19E+01	
Zn-65	mCi	-----	-----	4.05E-02	2.21E-01	5.66E-04	1.94E-02	2.81E-01	
Sr-89	mCi	4.35E-02	2.11E-02	1.29E-02	2.03E-02	4.13E-03	5.42E-03	1.07E-01	
Sr-90	mCi	2.60E-03	4.40E-03	2.29E-03	1.80E-03	5.00E-04	6.44E-04	1.22E-02	
Zr-95	mCi	-----	-----	-----	-----	-----	-----	-----	
Nb-95	mCi	-----	-----	3.10E-03	-----	-----	-----	3.10E-03	
Ru-103	mCi	-----	-----	-----	-----	-----	-----	-----	
(continued on next page)									
(d) Percent Vent Stack Limit	%	0.53	0.59	1.40	2.96	0.28	0.39	1.02	6.6D.1.f.(3)
(e) Average Release Rate	uCi/sec	6.37E-04	7.09E-04	1.68E-03	3.55E-03	3.36E-04	4.69E-04	1.23E-03	
6. Sum of Iodine and Particulate									
a) Percent of Chimney Limit	%	0.11	0.08	0.06	0.03	0.06	0.06	0.07	6.6D.1.f.(3)
b) Percent of Vent Stack Limit	%	0.55	0.62	1.44	3.02	0.31	0.41	1.05	
7. Gaseous Tritium									
a) Release	curies	9.42E00	7.04E00	5.17E00	1.30E-02	3.54E00	5.57E-02	2.52E+01	
b) Average Release Rate	uCi/sec	3.52E00	2.81E00	1.93E00	5.00E-03	1.32E00	2.15E-02	1.60E00	
c) Percent Tech Spec Limit	%	NA	NA	NA	NA	NA	NA	NA	



## REPORT OF RADIOACTIVE EFFLUENTS

**FACILITY:** DRESDEN NUCLEAR POWER STATION-UNITS 2/1

DOCKET NOS.: 50-237, 50-249

**YEAR:** 1984

[illegible]

\* Detected But Not Reported

## REPORT OF RADIOACTIVE EFFLUENTS

**FACILITY:** Dresden Nuclear Power Station-Units 2/3

DOCKET NOS.: 50-237, 50-249

**YEAR:** 1984

[illegible]

\*Calculated Release From Venting of Spent Fuel Cask

# REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: DRESDEN NUCLEAR POWER STATION - UNIT 2/3

DOCKET NOS.: 50-237, 50-249

YEAR: 1984

## II. Liquid Effluents

	UNITS	January	February	March	April	May	June	6 MO. TOTAL	TECH. SPEC. REF.
1. Gross Radioactivity ( $\beta$ - $\gamma$ )		No	No		No	No	No		
a) Total Release (2/3 Radwaste)	Curies	Discharge	Discharge	1.44E-02	Discharge	Discharge	Discharge	1.44E-02	
b) Average Concentration Released	uci/ml			1.70E-09				1.70E-09	
c) Maximum Concentration Released	uci/ml			3.80E-08				3.80E-08	
d) Percent of Tech Spec Limit	%							1.70	
based on average conc. released									
2. Tritium									
a) Total Release	Curies							1.23E00	
b) Average Concentration Released	uci/ml							1.46E-07	
c) Percent of Tech Spec Limit	%							NA	
3. Dissolved Noble Gases									
a) Total Release	Curies			NA				NA	
b) Average Concentration Released	uci/ml			---				---	
c) Percent of Tech Spec Limit	%			---				---	
4. Gross Alpha Radioactivity									
a) Total Release	Curies			7.71E-04				7.71E-04	
b) Average Concentration Released	uci/ml			9.12E-11				9.12E-11	
5. Volume of Liquid Waste to Discharge Canal	Liters			2.90E+06				2.90E+06	
6. Volume of Dilution Water	Liters			8.45E+09				8.45E+09	

## REPORT OF RADIOACTIVE EFFLUENTS

**FACILITY:** Dresden Nuclear Power Station - Unit 2/3

DOCKET NOS.: 50-237, 50-219

**YEAR:** 1984

## II. Liquid Effluents (continued)

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# REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: Dresden Nuclear Power Station - Unit 2/3

DOCKET NOS.: 50-237, 50-249

YEAR: 1984

II. Liquid Effluents (continued)	UNITS	January	February	March	April	May	June	6 MO. TOTAL	TECH. SPEC. REF.
8. Gross Radioactivity (S-I) LPCI Service H <sub>2</sub> O Heat Exchanger	Milli-Curies	4.60E-01	1.79E00	8.51E00	2.30E-01	1.18E00	5.90E-01	1.28E+01	
a) Total Release	Curies	4.60E-01	1.79E00	8.51E00	2.30E-01	1.18E00	5.90E-01	1.28E+01	
b) Average Concentration Released*	uci/ml	6.80E-12	2.83E-11	6.86E-11	1.76E-12	7.66E-12	3.96E-12	1.86E-11	
c) Maximum Concentration Released*	uci/ml	2.23E-08	3.85E-07	8.01E-07	2.01E-08	2.35E-07	8.85E-08	8.01E-07	
d) Percent of Tech Spec Limit based on average conc released	%	0.01	0.03	0.07	< 0.01	0.01	< 0.01	0.02	
9. Tritium									
a) Total Release	Curies	2.23E-05	1.72E-02	3.07E-04	2.05E-05	4.38E-04	2.29E-04	1.82E-02	
b) Average Concentration Released	uci/ml	3.30E-13	2.72E-10	2.48E-12	1.57E-13	2.85E-12	1.54E-12	2.64E-11	
c) Percent of Tech Spec Limit	%	NA	NA	NA	NA	NA	NA	NA	
10. Dissolved Noble Gases									
a) Total Release	Curies	NA	NA	NA	NA	NA	NA	NA	
b) Average Concentration Released	uci/ml	----	----	---	---	---	---	---	
c) Percent of Tech Spec Limit	%	----	----	---	---	---	---	---	
11. Gross Alpha Radioactivity									
a) Total Release	Curies	2.77E-06	9.67E-06	3.59E-05	7.88E-07	4.15E-06	2.60E-06	5.59E-05	
b) Average Concentration Released	uci/ml	4.10E-14	1.53E-13	2.90E-13	6.02E-15	2.69E-14	1.74E-14	8.11E-14	
12. Volume of Liquid Waste to Discharge Canal	Liters	4.27E+05	3.45E+05	3.61E+05	9.86E+04	9.86E+04	8.21E+04	1.41E06	
13. Volume of Dilution Water	Liters	6.76E+10	6.32E+10	1.24E+11	1.31E+11	1.54E+11	1.49E+11	6.89E+11	

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

## 1

**FACILITY:** Dresden Nuclear Power Station - Unit 2/3

DOCKET NOS.: 50-237, 50-212

**YEAR:** 1984

[illegible]

## REPORT OF RADIOACTIVE EFFLUENTS

**FACILITY:** Dresden Nuclear Power Station

**DOCKET NOS.: 50-10, 50-237, 50-549**

**YEAR:** 1984

**I. Solid Waste Shipped Offsite For Burial or Disposal**

[illegible]

# DRESDEN NUCLEAR POWER STATION

## SOLID WASTE DISPOSITION

YEAR 1984

MONTH	NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
January	6	Motor Freight (Exclusive Use Only)	Barnwell, S.C.
January	1	Motor Freight (Exclusive Use Only)	Richland, WA.
February	14	Motor Freight (Exclusive Use Only)	Barnwell, S.C.
February	4	Motor Freight (Exclusive Use Only)	Richland, WA.
March	14	Motor Freight (Exclusive Use Only)	Barnwell, S.C.
March	5	Motor Freight (Exclusive Use Only)	Richland, WA.
April	15	Motor Freight (Exclusive Use Only)	Barnwell, S.C.
April	2	Motor Freight (Exclusive Use Only)	Richland, WA
May	22	Motor Freight (Exclusive Use Only)	Barnwell S.C.
May	2	Motor Freight (Exclusive Use Only )	Richland, WA
June	22	Motor Freight (Exclusive Use Only)	Barnwell, S.C.
June	1	Motor Freight (Exclusive Use Only)	Richland, WA.





**Commonwealth Edison**

Dresden Nuclear Power Station

R.R. #1

Morris, Illinois 60450

Telephone 815/942-2920

PRINCIPAL STAFF

RA		DRP	
D/RA		DRS	
RC			
PAO			
SGA			
EIC			
DRMA		FILE	LOS

*DMR3*  
*orig +1*

August 15, 1984

DJS LTR: #84-815

Mr. James G. Keppler  
Regional Administrator  
Directorate of Inspection and Enforcement  
Region III  
U.S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, IL 60137

SUBJECT: Dresden Nuclear Power Station Operating Report, NRC Dockets  
50-10, 50-237, and 50-249.

Dear Mr. Keppler:

Enclosed is the radioactive effluent report for January through  
June, 1984 for Dresden Nuclear Power Station.

One copy of this report is provided for your use and 39 copies  
are being submitted directly to Mr. Edson G. Case, Deputy Director  
of the Office of Nuclear Reactor Regulation.

Sincerely,

D.J. Scott  
Station Superintendent  
Dresden Nuclear Power Station

RA:DJS:sp

Enclosure

cc: R. Arnoldi  
File/Numerical  
File/NRC

*1E125*  
*11*

AUG 24 1984