



Commonwealth Edison
Dresden Nuclear Power Station
RR #1
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February 22, 1993

CWS PMLTR #: 93-0086

Mr. A. Bert Davis
Administrator
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Subject: Dresden Nuclear Power Station
Radioactive Effluent Report
NRC Dockets 50-10, 50-237, 50-249

Enclosed is the Radioactive Effluent Report for July through December, 1992 for Dresden Nuclear Power Station.

A copy of this report will be furnished to the NRC Resident Inspector.

Sincerely Yours,

Charles W. Schroeder
Station Manager
Dresden Nuclear Power Station

CWS:MC:dk

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REGULATORY LIMITS

Gaseous Effluents - Dose

This Specification is provided to ensure that the dose at the unrestricted area boundary from gaseous effluents from the units on site will be within the annual dose limits of 10 CFR Part 20 for unrestricted areas. The annual dose limits are the doses associated with the concentrations of 10 CFR Part 20, Appendix B, Table II. These limits provide reasonable assurance that radioactive material discharged in gaseous effluents will not result in the exposure of an individual in an unrestricted area to annual average concentrations exceeding the limits specified in Appendix B, Table II of 10 CFR Part 20 (10 CFR Part 20.106(b)). The specified release rate limits restrict, at all times, the corresponding gamma and beta dose rates above background to an individual at or beyond the unrestricted area boundary to less than or equal to 100 mrem/year to the total body or to less than or equal to 3000 mrem/year to the skin. These release rate limits also restrict, at all times, the corresponding thyroid dose rate above background to a child via the inhalation pathway to less than or equal to 1500 mrem/year. For purposes of calculating doses resulting from airborne releases, the main chimney is considered to be an elevated release point and the reactor building vent stack is considered to be a raised mode release point.

Dose, Dose Rates

This Specification is provided to implement the requirements of Sections 11.B, 111.A and 111.A of Appendix 1, 10 CFR Part 50. The Limiting Conditions for Operation implement the guides set forth in Section 11.1 of Appendix 1. The statements provide the required operating flexibility and at the same time implement the guides set forth in Section 11.A of Appendix 1 to assure that the releases of radioactive material in gaseous effluents will be kept "as low as is reasonably achievable." The Surveillance Requirements implement the requirements in Section 111.A of Appendix 1 that compliance with the guides of Appendix 1 is to be shown by calculational procedures based on models and data such that the actual exposure of an individual through the appropriate pathways is unlikely to be substantially underestimated. The dose calculations established in the ODCM for calculating the doses due to the actual release rates of radioactive noble gases in gaseous effluents will be consistent with the methodology provided in Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix 1," Revision 1, October 1977 and Regulatory Guide 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water Cooled Reactors," Revision 1, July 1977. The ODCM equations provide for determining the air dose at the unrestricted boundary based upon the historical average atmospheric conditions. NUREG-0133 provides methods for dose calculations consistent with Regulatory Guides 1.109 and 1.111.

Radioiodine, Radioactive Material in Particulate Form and Radionuclides Other than Noble Gases

This specification is provided to implement the requirements of Sections II.C, III.A and IV.A of Appendix I, 10 CFR Part 50. The Limiting Conditions for Operation are the guides set forth in Section II.C of Appendix I. The statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the releases of radioactive materials in gaseous effluents will be kept "as low as reasonably achievable." The OCHM calculational methods specified in the surveillance requirements implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I be shown by calculational procedures based on models and data such that the actual exposure of an individual through appropriate pathways is unlikely to be substantially underestimated. The OCHM calculational methods approved by NRC for calculating the doses due to the actual release rates of the subject materials are required to be consistent with the methodology provided in Regulatory Guide 1.107, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I", Revision 1, October 1977 and Regulatory Guide 1.111, "Methods for Estimating Airborne Radioactive Transport and Dispersion of Gaseous Effluents in Pressurized Light-Water-Cooled Reactors," Revision 1, July 1977. These equations also provide for determining the actual dose resulting in the historical average atmospheric conditions. The release rate specifications for radionuclides, radioactive material in particulate form and radionuclides other than noble gases are dependent on the existing radionuclide pathways to man, in the unrestricted area. The pathways which were examined in the development of these specifications were: 1) individual inhalation of airborne radionuclides, 2) deposition of radionuclides onto green leafy vegetation with subsequent consumption by man and 3) deposition onto grassy areas where cattle consume grass with consumption of the milk by man.

Gaseous Waste Treatment

The availability of the gaseous waste treatment which reduces amounts or concentrations of radioactive materials ensures that the system will be available for use whenever gaseous effluents require treatment prior to release to the environment. The requirement that the appropriate portions of this system be operable when specified provides reasonable assurance that the releases of radioactive materials in gaseous effluents will be kept "as low as reasonably achievable". This specification implements the requirements of 10 CFR Part 50.10a, General Design Criterion 60 of Appendix A to 10 CFR Part 50, and design objective Section III.D of Appendix I to 10 CFR Part 50.

LIQUID EFFLUENTS

Concentration

This specification is provided to ensure the concentration of radioactive materials released in liquid waste effluents from the site to unrestricted areas will be less than the concentration levels specified in 10 CFR Part 20, Appendix B, Table 11, Column 2. The concentration limit for noble gases, MPC in air (subversion), was converted to an equivalent concentration in water using the International Commission on Radiological Protection (ICRP) Publication 2.

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This specification is provided to implement the requirements of Sections II.A, III.A and IV.A of Appendix I, 10 CFR Part 50. The Limiting Condition for Operation implements the guides set forth in Section II.A of Appendix I. The statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the releases of radioactive material in liquid effluents will be kept "as low as reasonably achievable". The dose calculations in the OLCM implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I be shown by calculational procedures based on models and data such that the actual exposure of an individual through appropriate pathways is unlikely to be substantially underestimated. The equations specified in the OLCM for calculating the doses due to the actual release rates of radioactive materials in liquid effluents will be consistent with the methodology provided in Regulatory Guide 1.107, "Calculation of Annual Doses to Man from Routine Release of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I", Revision 1, October 1977 and Regulatory Guide 1.111, "Estimating Aquatic Dispersion of Effluents from Accidental and Routine Reactor Releases for the Purpose of Implementing Appendix I", April 1977. NUREG-0113 provides methods for dose calculations with Reg Guide 1.109 and 1.110.

Liquid Waste Treatment

The operability of the liquid radwaste treatment system ensures that this system will be available for use whenever liquid effluents require treatment prior to release to the environment. The requirement that the appropriate portions of this system be used when specified provides assurance that the releases of radioactive materials in liquid effluents will be kept "as low as reasonably achievable". This specification implements the requirements of 10 CFR Part 50 and design objective Section II.D of Appendix I to 10 CFR Part 50.

SPRESEN NUCLEAR POWER STATION DOCKET NOS. 50-10, 50-237, 50-249

MAXIMUM PERMISSIBLE CONCENTRATIONS (MPC)

The concentration of radioactive materials released in gaseous and liquid effluents from the site to unrestricted areas will be less than the concentration levels specified in 10 CFR Part 20, Appendix B, Table II, Columns 1 and 2. The concentration limit for noble gases, MPC in air (submersion), was converted to an equivalent concentration in water using the International Commission on Radiological Protection (ICRP) Publication 2.

MAXIMUM PERMISSIBLE CONCENTRATION OF DISSOLVED
OR ENTRAINED NOBLE GASES RELEASED FROM
THE SITE TO UNRESTRICTED AREAS
IN LIQUID WASTE

ISOTOPE	PERCENTAGE
Ar-36	1.0E-04
Ar-38	1.0E-04
Ar-39	1.0E-05
Ar-40	1.0E-05
Ar-41	1.0E-05
Ar-42	1.0E-04
Ar-43	1.0E-04
Ar-44	1.0E-04
Ar-45	1.0E-04
Ar-46	1.0E-04

- * Derived from Equation 13 of ICRP Publication 2 (1959), adjusted for infinite cloud dispersion in water, and $E = 0.01$ sec/week, density = 1.0 g/cc and $P/P_0 = 1.0$.

DRESDEN NUCLEAR POWER STATION DOCKET NOS. 50-10, 50-237, 50-249

AVERAGE ENERGY

The average energy of gamma and electron pairs was calculated for the gamma sources about 100 cm. The average energy is based on the percentage of each source per suitable process and to

average energy per disintegration (E in MeV/dis) for gamma and beta emissions separately.

$$\bar{E}_e = 2.49E-01 \text{ MeV/die}$$

$$\bar{E}_1 = 3.17E-01 \text{ MeV/dia}$$

EQUIPMENT OUT-OF-SERVICE:

The Unit 1 Chimney DRING was out of service from June 30, 1982 to the end of the year. This was due to repairs and calibration of the monitor. The backup air sampler was used during this period.

The Unit 2 Service Water Monitor was out of service from September 25, 1992 to November 11, 1992, and the Unit 3 Service Water Monitor was out of service from September 12, 1992 to November 5, 1992. These outages were due to repairs and cleaning trapped sediment in the pipe work.

MEASUREMENTS AND APPROXIMATIONS

- A. **Fission and activation gases:** The D-1 Chimney, D2/3 Chimney, and D2/3 Reactor Building Vent are sampled weekly via a grab sample. The samples are analyzed for specific isotopes present in the release using a Hyper-Pure Germanium (HP Ge) Spectrometry System. Tritium is sampled monthly via a grab sample on the D-1 Chimney, D2/3 Chimney, and D2/3 Reactor Building Vent and analyzed using a Liquid Scintillation Counter. Krypton-85 is estimated in the D2/3 Chimney using a recoil or non-recoil calculation using the fission per second plot and the sum of Kr-85m, Kr-87, Kr-88, Xe-133, Xe-135, and Xe 138 activities present in Reactor Off-Gas.
- B. **Iodine and Particulate:** Iodine and particulate samples from the D-1 Chimney, D2/3 Chimney and the D2/3 Reactor Building Vent are collected for a maximum seven day period. These samples are analyzed for specific nuclides present in the release using a HP Ge spectrometry system. When iodine or particulate samples are not used for reporting the release rate due to management decision that the sample may not be representative, an average of the preceding sample and the following sample is used to calculate the release. A monthly composite of the particulate samples is sent to a vendor to be analyzed for Fe-55, Sr-89, Sr-90, and Gross Alpha activity.
- C. **Liquid Effluents:** Analyzed for specific isotopes present in the release using a HP Ge spectrometry system. A composite of all batches for the month is sent to a vendor to be analyzed for Sr-89, Sr-90, Fe-55, H-3, and Gross Alpha activity. A sample of each Containment Cooling Service Water (CCSW) system is analyzed each month for specific isotopes present in the release using a HP Ge spectrometry system. A sample of each CCSW system is sent each month to a vendor to be analyzed for Sr-89, Sr-90, Fe-55, H-3, and Gross Alpha activity.
- D. **Estimation of Overall Errors:** The methods used for estimating overall errors associated with radioactivity measurements vary with discharge path and form of isotopes. Factors that contribute to the error include such items as calibration of counting equipment, counting statistics, sampling error, discharge volume, and flow rate monitors.
- E. **Estimation of Vendor Analyzed Information:** The vendor analyzed data for Sr-89, Sr-90, Fe-55, H-3 and Gross Alpha was projected, where applicable, for the months of September through December using August data. A Corrected Effluent Report will be submitted with the next Semi-Annual Effluent Report.

EPESDEN NUCLEAR POWER STATION
UNITS 1, 2, AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through December 1992

GASEOUS EFFLUENTS Docket Numbers: 50-10
50-237
SUMMATION OF ALL RELEASES 50-249

TYPE OF RELEASE	UNITS	1st QUARTER	4th QUARTER	EST. TX ERROR
Fission and Activation Gases				
1. Total Release	CI	1.18E+00	3.09E+00	7.31
2. Average Release Rate for Period	uCi/sec	1.61E-01	3.89E-01	
3. Percent of Technical Specification Limit	%	.	.	
Radionuclides				
1. Total Iodine-131	CI	4.40E-04	4.67E-04	9.51
2. Average Release Rate of I-131 for Period	uCi/sec	5.56E-05	5.89E-05	
3. Percent of Technical Specification Limit	%	.	.	
4. Total Iodine-131, Iodine-133, and Iodine-135	CI	3.14E-03	2.94E-03	
Particulates				
1. Particulates with Half-lives > 9 days	CI	2.30E-03	2.94E-03	6.09
2. Average Release Rate for Period	uCi/sec	2.69E-04	3.75E-04	
3. Percent of Technical Specification Limit	%	.	.	
4. Gross Alpha Radioactivity	CI	1.13E-05	6.17E-06	
Tritium				
1. Total Release	CI	1.10E+00	1.61E+00	7.6
2. Average Release Rate for Period	uCi/sec	1.51E-01	2.19E-01	
3. Percent of Technical Specification Limit	%	.	.	

- The information is contained in the Radiological Impact on Man section of the report. Total airborne release data is provided which includes fission and activation gases, radionuclides, particulates, and tritium.

DRESDEN NUCLEAR POWER STATION
UNITS 1, 2, AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through December 1992

GASEOUS EFFLUENTS
SUMMATION OF ALL RELEASES

Docket Numbers: 50-10
50-237
50-249

BID (uCi/cc)

1. FISSION GASES

Te-130	1.60E-07
Te-135	9.90E-08
Te-87	4.40E-08
Te-89	5.40E-08
Te-81m	1.60E-08
Te-65	5.10E-06
Te-135	1.60E-08
Te-133	4.40E-08
Ar-41	2.50E-08
Te-133m	1.55E-07

2. IODINES

I-131	2.90E-12
I-133	1.40E-12
I-135	4.70E-10

3. PARTICULATES

Sr-89	6.00E-14
Sr-90	5.00E-14
Ca-51	6.40E-12
Mn-54	6.80E-12
Co-58	8.00E-12
Fe-55	3.00E-14
Fe-59	1.60E-12
Co-60	1.40E-12
Zr-95	1.40E-12
Nb-95	7.10E-12
Mo-99	7.40E-12
Ru-103	7.70E-12
Ag-110m	6.10E-12
Pb-124	5.70E-12
I-131	7.70E-12
Ca-134	6.80E-12
Ca-136	7.20E-12
Ca-137	7.60E-12
Ba-140	3.30E-12
La-140	1.10E-12
Ce-141	9.90E-12
Ce-144	1.80E-12
Pb-65	1.70E-12
Pb-133	7.20E-12
Sb-125	1.90E-12
Others:	

Gross Alpha 1.70E-14

DRESDEN NUCLEAR POWER STATION
UNIT 1 EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through December, 1992

01 CATEGORY GASEOUS EFFLUENTS

 GROUND LEVEL RELEASES

 SEMI-ELEVATED RELEASES

XX ELEVATED RELEASES

Docket Number: 50-10

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	1st QUARTER	4th QUARTER	1st QUARTER	4th QUARTER
FISSION GASES					
Xe-138	CI	.	.		
Xe-139m	CI	.	.		
Kr-87	CI	.	.		
Kr-88	CI	.	.		
Kr-91m	CI	.	.		
Kr-95	CI	.	.		
Xe-135	CI	.	.		
Xe-139	CI	.	.		
TOTAL	CI			NONE	NONE
ACTINES					
Ac-231	CI	.	.		
Ac-233	CI	.	.		
Ac-235	CI	.	.		
Ac-237	CI	.	.		
TOTAL	CI			NONE	NONE
FISSION PRODUCTS					
Cr-51	CI	.	.		
Cr-54	CI	2.1E-05	.		
Cr-58	CI	.	.		
Fe-59	CI	.	.		
Co-60	CI	.	.		
Co-95	CI	.	.		
Ni-95	CI	.	.		
Ni-99	CI	.	.		
Fe-101	CI	.	.		
Ag-110m	CI	.	.		
Se-124	CI	.	.		
Se-131	CI	.	.		
Te-134	CI	.	.		
Co-136	CI	.	.		
Co-137	CI	.	.		
Fe-140	CI	.	.		
Co-140	CI	.	.		
Co-141	CI	.	.		
Co-144	CI	.	.		
Co-145	CI	.	.		
Br-133	CI	.	.		
Br-135	CI	.	.		
Fe-135	CI	5.00E-05	2.50E-05		
TOTAL	CI	5.00E-05	2.50E-05	NONE	NONE

* The activity of this nuclide is less than the LLD listed on the appropriate table.

SPESDEN NUCLEAR POWER STATION
UNIT 1 EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through September 1992

PL CHITROY GASEOUS EFFLUENTS

GROUND LEVEL RELEASES

Docket Number: 50-10

SEMI-ELEVATED RELEASES

XX ELEVATED RELEASES

		CONTINUOUS MODE			
NUCLIDES RELEASED	UNIT	JULY	AUGUST	SEPTEMBER	3Q QUARTER TOTAL
FISSION GASES					
Xe-138	Cl	.	.	.	.
Xe-139	Cl	.	.	.	.
Xe-140	Cl	.	.	.	.
Xe-141	Cl	.	.	.	.
Xe-142	Cl	.	.	.	.
Xe-143	Cl	.	.	.	.
Xe-144	Cl	.	.	.	.
Xe-145	Cl	.	.	.	.
Xe-146	Cl	.	.	.	.
TOTAL	Cl	.	.	.	.
IODINES					
I-131	Cl	.	.	.	.
I-133	Cl	.	.	.	.
I-135	Cl	.	.	.	.
TOTAL	Cl	.	.	.	.
PARTICULATES					
Sr-90	Cl	.	.	.	.
Sr-90	Cl	3.12E-08	.	.	3.12E-08
Co-58	Cl	.	.	.	.
Co-59	Cl	.	.	.	.
Co-60	Cl	.	.	.	.
Co-61	Cl	.	.	.	.
Co-62	Cl	.	.	.	.
Co-63	Cl	.	.	.	.
Co-64	Cl	.	.	.	.
Co-65	Cl	.	.	.	.
Nb-95	Cl	.	.	.	.
Mo-99	Cl	.	.	.	.
Pu-103	Cl	.	.	.	.
Ag-110	Cl	.	.	.	.
Sb-124	Cl	.	.	.	.
I-131	Cl	.	.	.	.
Co-134	Cl	.	.	.	.
Co-136	Cl	.	.	.	.
Co-137	Cl	.	.	.	.
Ra-140	Cl	.	.	.	.
La-140	Cl	.	.	.	.
Co-141	Cl	.	.	.	.
Co-142	Cl	.	.	.	.
Co-144	Cl	.	.	.	.
Co-145	Cl	.	.	.	.
Ra-143	Cl	.	.	.	.
Sb-125	Cl	.	.	.	.
Fe-55	Cl	1.95E-06	.	1.65E-06	3.60E-06
TOTAL	Cl	3.97E-06	.	1.65E-06	5.62E-06

* The activity of this nuclide is less than the LLD listed on the appropriate table.

DRESDEN NUCLEAR POWER STATION
UNIT 1 EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
October Through December, 1992

PI CHIMNEY GASEOUS EFFLUENTS

GROUND LEVEL RELEASES

Docket Number: 50-10

SEMI-ELEVATED RELEASES

XX ELEVATED RELEASES

		CONTINUOUS MODE			
NUCLIDES RELEASED	UNIT	OCTOBER	NOVEMBER	DECEMBER	4th QUARTER TOTAL
FISSION GASES					
Xe-138	C1	.	.	.	.
Xe-135	C1	.	.	.	.
Kr-87	C1	.	.	.	.
Kr-88	C1	.	.	.	.
Kr-89	C1	.	.	.	.
Kr-90	C1	.	.	.	.
Xe-135	C1	.	.	.	.
Xe-137	C1	.	.	.	.
TOTAL	C1	.	.	.	.
FISSION PRODUCTS					
I-131	C1	.	.	.	.
I-132	C1	.	.	.	.
I-133	C1	.	.	.	.
TOTAL	C1	.	.	.	.
FISSION PRODUCTS					
Cr-50	C1	.	.	.	.
Cr-50	C1	.	.	.	.
Cr-52	C1	.	.	.	.
Mn-54	C1	.	.	.	.
Co-58	C1	.	.	.	.
Fe-59	C1	.	.	.	.
Co-60	C1	.	.	.	.
Fe-55	C1	.	.	.	.
Ni-55	C1	.	.	.	.
Pu-103	C1	.	.	.	.
Ag-110	C1	.	.	.	.
Sb-124	C1	.	.	.	.
I-131	C1	.	.	.	.
Cr-134	C1	.	.	.	.
Cu-136	C1	.	.	.	.
Ce-137	C1	.	.	.	.
Ba-140	C1	.	.	.	.
La-140	C1	.	.	.	.
Ce-141	C1	.	.	.	.
Cm-144	C1	.	.	.	.
Mo-95	C1	.	.	.	.
Ba-133	C1	.	.	.	.
Sb-125	C1	.	.	.	.
Fe-55	C1	8.53E-06	8.76E-06	8.53E-06	2.53E-05
TOTAL	C1	8.53E-06	8.76E-06	8.53E-06	2.53E-05

D2/D3 Chimney GASEOUS EFFLUENTS

Pocket Number: 50-237

SEMI-ELEVATED RELEASES

30-249

XX ELEVATED RELEASES

- The activity of this nuclide is less than the LLD listed on the appropriate table.

DRESDEN NUCLEAR POWER STATION
UNITS 2 AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through September 1992

D2/J Chimney GASEOUS EFFLUENTS

GROUND LEVEL RELEASES

Docket Numbers: 50-237

SEMI-ELEVATED RELEASES

50-249

XX ELEVATED RELEASES

CONTINUOUS MODE					
NUCLIDES RELEASED	UNIT	JULY	AUGUST	SEPTEMBER	3rd QUARTER TOTAL
EMISSION GASES					
Xe-138	CI	.	.	.	.
Xe-135m	CI	.	.	.	.
Kr-87	CI	.	.	.	.
Kr-88	CI	.	.	.	.
Kr-89m	CI	.	.	.	.
Kr-95	CI	2.70E-04	3.11E-04	3.38E-04	9.27E-04
Xe-135	CI	6.62E-03	7.44E-03	7.52E-03	1.28E-00
Xe-133	CI	.	.	.	.
TOTAL	CI	6.01E-01	7.74E-01	7.42E-01	1.28E-00
COINPES					
I-131	CI	1.34E-04	1.31E-04	1.57E-04	4.00E-04
I-133	CI	6.14E-04	7.31E-04	6.70E-04	2.26E-03
I-135	CI	.	.	3.94E-04	3.94E-04
TOTAL	CI	6.51E-04	8.72E-04	1.22E-03	3.09E-03
PARTICULATES					
Sr-90	CI	6.94E-06	7.17E-06	7.20E-06	1.25E-05
Ca-90	CI	2.64E-07	2.62E-06	2.24E-06	2.95E-06
Cl-51	CI	.	.	.	.
Mn-54	CI	.	2.81E-05	.	2.81E-05
Co-58	CI	.	.	.	.
Fe-59	CI	.	.	.	.
Co-60	CI	.	2.33E-05	.	2.33E-05
Fe-55	CI	.	.	.	.
Ni-55	CI	.	.	.	.
Pu-100	CI	7.67E-06	.	.	7.67E-06
As-110-	CI	.	.	.	.
Sb-124	CI	.	.	.	.
I-131	CI	.	.	.	.
Ca-134	CI	.	.	.	.
Cr-136	CI	.	.	.	.
Cr-137	CI	.	.	5.32E-06	5.32E-06
Ra-140	CI	.	.	.	.
La-140	CI	.	.	.	.
Co-141	CI	.	.	.	.
Co-144	CI	.	.	.	.
Zn-65	CI	.	.	.	.
Pa-133	CI	.	.	.	.
Sb-125	CI	.	.	.	.
Fe-55	CI	2.31E-04	2.31E-04	1.81E-04	6.33E-04
TOTAL	CI	2.78E-04	3.35E-04	2.32E-04	8.27E-04

* The activity of this nuclide is less than the LLD listed on the appropriate table.

DRESDEN NUCLEAR POWER STATION
UNITS 2 and 3 EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
October Through December 1992

02/3 Chimney GASEOUS EFFLUENTS

GROUND LEVEL RELEASES

SEMI-ELEVATED RELEASES

Docket Numbers: 50
50

XX ELEVATED RELEASES

CONTINUOUS MODE

NUCLIDES RELEASED	UNIT	OCTOBER	NOVEMBER	DECEMBER	4th QUARTER TL
FISSION GASES					
Xe-138	Cl	.	.	.	.
Xe-135m	Cl	.	.	.	.
Ar-87	Cl	.	.	.	.
Ar-88	Cl	.	.	.	.
Ar-95	Cl	.	.	.	.
Ar-95	Cl	1.12E-04	2.24E-04	1.75E-04	1.01E-03
Xe-135	Cl	1.68E-00	1.25E-00	1.42E-01	3.09E-00
Xe-133	Cl	.	.	.	.
TOTAL	Cl	1.68E-00	1.26E-00	1.42E-01	3.09E-00
NON-FISSION GASES					
I-131	Cl	1.01E-04	1.38E-04	1.85E-04	4.27E-04
I-133	Cl	6.40E-04	2.31E-04	7.32E-04	2.17E-03
I-135	Cl	1.60E-04	.	.	1.60E-04
TOTAL	Cl	9.11E-04	9.07E-04	9.37E-04	2.76E-03
PARTICULATES					
Sr-89	Cl	2.40E-05	2.55E-05	2.40E-05	8.02E-05
Sr-90	Cl	4.57E-07	4.47E-07	4.51E-07	1.35E-06
Sr-91	Cl	.	.	.	.
Mn-54	Cl	.	.	.	.
Co-58	Cl	.	.	.	.
Fe-59	Cl	.	.	.	.
Co-60	Cl	.	4.34E-05	6.10E-05	1.05E-04
Zr-95	Cl	.	.	.	.
Nb-95	Cl	.	.	.	.
Ru-103	Cl	.	.	.	.
Ag-110m	Cl	.	.	.	.
Sb-124	Cl	.	.	.	.
I-131	Cl	.	.	.	.
Cs-134	Cl	.	.	.	.
Cs-136	Cl	.	.	.	.
Cs-137	Cl	.	.	4.73E-05	4.73E-05
Ba-140	Cl	.	.	.	.
La-140	Cl	.	.	.	.
Ce-143	Cl	.	.	.	.
Ce-144	Cl	.	.	.	.
Pr-145	Cl	.	.	.	.
Ba-133	Cl	.	.	.	.
Fe-125	Cl	.	.	.	.
Fe-55	Cl	1.06E-04	1.05E-04	1.06E-04	3.17E-04
TOTAL	Cl	1.33E-04	1.75E-04	2.43E-04	5.51E-04

* The Activity of this nuclide is less than the LLD listed on the appropriate table.

DRESDEN NUCLEAR POWER STATION
UNITS 2 AND 3 EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through December 1992

D2/J R Building Vent CASEOUS EFFLUENTS

Docket Number: 50-
50-:

GROUND LEVEL RELEASES

XX SEMI-ELEVATED RELEASES

ELEVATED RELEASES

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		PATCH MODE	
		3rd QUARTER	4th QUARTER	3rd QUARTER	4th QUARTER
FISSION GASES					
Xe-135	Cl	.	.		
Xe-135m	Cl	.	.		
Kr-87	Cl	.	.		
Kr-88	Cl	.	.		
Kr-89m	Cl	.	.		
Kr-89	Cl	.	.		
Zn-135	Cl	.	.		
Zn-137	Cl	.	.		
TOTAL	Cl			NONE	NONE
ISOTOPES					
I-131	Cl	3.34E-05	4.06E-05		
I-133	Cl	5.67E-05	1.47E-04		
I-135	Cl				
TOTAL	Cl	8.01E-05	1.52E-04	NONE	NONE
TRANSURANICS					
Sr-89	Cl	.	.		
Sr-90	Cl	.	.		
Sr-91	Cl	5.03E-05	1.33E-04		
Mn-54	Cl	1.56E-04	3.02E-04		
Co-58	Cl	.	7.72E-05		
Po-59	Cl	.	3.61E-05		
Co-60	Cl	4.23E-04	1.14E-03		
Zr-95	Cl	.	.		
Nb-95	Cl	.	.		
Pu-103	Cl	.	.		
Am-125	Cl	.	.		
Cf-124	Cl	.	.		
I-131	Cl	.	.		
Co-134	Cl	.	.		
Ce-136	Cl	.	.		
Ce-137	Cl	.	.		
La-140	Cl	.	.		
La-140	Cl	.	.		
Co-141	Cl	.	.		
Co-144	Cl	.	.		
Zn-65	Cl	.	.		
Ba-133	Cl	.	.		
Mg-29	Cl	.	.		
Sb-125	Cl	.	.		
Po-55	Cl	6.41E-04	6.72E-04		
TOTAL	Cl	1.42E-03	2.36E-03	None	None

* The activity of this nuclide is less than the LLD listed on the appropriate table.

DRESDEN NUCLEAR POWER STATION
UNITS 2 and 3 EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
 July Through September, 1992

22/3 Rk Building Vent. GASEOUS EFFLUENTS

GROUND LEVEL RELEASES
 Docket Numbers: 50-21
 XX SEMI-ELEVATED RELEASES 50-21
 ELEVATED RELEASES

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE			BATCH MODE
		JULY	AUGUST	SEPTEMBER	2nd QUARTER
FLESSION CASES					
Xe-138	C1	.	.	.	.
Xe-135m	C1	.	.	.	.
Kr-82	C1	.	.	.	.
Kr-88	C1	.	.	.	.
Kr-85m	C1	.	.	.	.
Kr-85	C1	.	.	.	.
Xe-135	C1	.	.	.	.
Xe-133	C1	.	.	.	.
TOTAL	C1	.	.	.	.
IODINES					
I-131	C1	2.14E-05	1.81E-05	2.27E-05	1.15E-05
I-133	C1	2.01E-05	1.71E-05	1.24E-05	5.60E-05
I-135	C1	.	.	.	.
TOTAL	C1	2.44E-05	2.40E-05	1.40E-05	6.83E-05
PARTICULATES					
Co-89	C1	.	.	.	.
Co-90	C1	.	.	.	.
Cs-53	C1	.	4.61E-05	1.91E-05	5.02E-05
Mn-54	C1	5.72E-05	7.02E-05	3.28E-05	1.51E-04
Cs-58	C1	.	.	.	.
In-59	C1	.	.	.	.
Co-60	C1	1.40E-04	1.10E-04	1.03E-04	4.23E-04
Zr-95	C1	.	.	.	.
Nb-95	C1	.	.	.	.
Pu-103	C1	.	.	.	.
Ag-110m	C1	.	.	.	.
Se-124	C1	.	.	.	.
I-131	C1	.	.	.	.
Cs-134	C1	.	.	.	.
Cs-136	C1	.	.	.	.
Co-137	C1	.	.	.	.
Eu-140	C1	.	.	.	.
La-140	C1	.	.	.	.
Co-141	C1	.	.	.	.
Co-144	C1	.	.	.	.
In-65	C1	.	.	.	.
Fe-133	C1	.	.	.	.
Mo-99	C1	.	.	.	.
Sr-125	C1	.	.	.	.
Fe-55	C1	1.72E-04	2.04E-04	2.62E-04	6.41E-04
TOTAL	C1	6.14E-04	4.11E-04	4.03E-04	1.47E-03

* The activity of this nuclide is less than the LLD listed on the appropriate table.

D 273 Re Building Vene CASEOUS EFFLUENTS

Packet Number: 50-237

50-249

ELEVATED RELEASES

* The activity of this nuclide is less than the MLD listed on the appropriate table.

SUMMATION OF ALL RELEASES Docket Number: 50-10
50-237
50-249

* The information is contained in the Radiological Impact on Man section of this report. Total liquid release data is provided which includes fission and activation products, tritium, and dissolved and entrained gases.

DRESDEN NUCLEAR POWER STATION
UNITS 1, 2, AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through December 1992

TABLE OF LOWER LIMITS OF DETECTABILITY
FOR LIQUID EFFLUENTS

Docket Numbers: 20-10
50-237
50-249

NUCLIDE	LLD (uCi/mL)
Sr-89	7.00E-08
Sr-90	2.00E-09
Mn-54	5.50E-08
Co-58	4.20E-08
Fe-59	9.30E-08
Co-60	1.23E-07
Zn-65	1.20E-07
Sb-124	4.50E-08
I-131	4.50E-08
Cs-134	4.60E-08
Cs-137	7.20E-08
Pa-230	2.20E-07
La-140	4.60E-08
Ce-141	6.80E-07
Yb-131	1.20E-07
La-135	4.20E-08
Cr-51	3.20E-07
Fe-55	7.00E-08
Cs-138	1.10E-07
Rb-87	3.00E-07
Germanium-76	1.00E-08
Fe-95	9.80E-08
Kr-87	1.50E-07
Kr-88	1.20E-07
I-135	2.10E-07
I-132	6.20E-08
Al-110m	5.90E-08
Ba-133	6.00E-08
Co-154	1.10E-07
Cs-136	5.50E-08
I-133	6.30E-08
I-134	1.50E-07
Kr-85	1.10E-05
Mn-95	1.90E-08
Fe-95	5.00E-08
Np-239	1.50E-07
Ru-103	5.30E-08
Sb-125	1.50E-07
Xe-131m	1.80E-06
Yb-131m	1.50E-07
Yb-138	4.10E-06

* This limit was reported as an MDA by the offsite vendor for the October 1992 Effluent Discharge composite. The October 23, 1992 Unit 3 service water sample had a reported MDA of 6.00E-09 uCi/mL. All other MDAs for Sr-89 were at or below 7.00E-09 uCi/mL.

Padwaite LIQUID EFFLUENTS Docket Numbers: 50-10
50-237
Batch Releases: 7 50-249

- 50-249**

* The activity of this nuclide is less than the LLD listed on the appropriate table.

DRESDEN NUCLEAR POWER STATION
UNITS 1, 2, AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July 1 Through September 1992

Radwaste LIQUID EFFLUENTS

Docket Numbers: 50-10
50-237
50-249

NUCLIDES RELEASED	UNIT	BATCH MODE			
		JULY	AUGUST	SEPTEMBER	3rd QUARTER TOTAL
Sr-89	Cl	.	.	.	.
Sr-90	Cl	.	.	.	.
Mn-54	Cl	.	9.97E-05	3.51E-05	1.35E-04
Co-58	Cl	.	.	.	.
Fe-59	Cl	.	.	.	.
Co-60	Cl	.	2.31E-04	1.20E-04	3.51E-04
Zn-65	Cl	.	.	.	.
Ru-103	Cl	.	.	.	.
Ag-110m	Cl	.	.	.	.
Sb-124	Cl	.	.	.	.
I-131	Cl	.	.	.	.
Cs-134	Cl	.	.	.	.
Cs-137	Cl	.	6.84E-05	4.29E-05	1.15E-04
Ba-140	Cl	.	.	.	.
La-140	Cl	.	.	.	.
Ce-144	Cl	.	.	.	.
Fe-55	Cl	.	.	.	.
I-132	Cl	.	.	.	.
I-134	Cl	.	.	.	.
(above)					
Total For Period	Cl	.	3.94E-04	3.02E-04	6.01E-04
Xe-133	Cl	.	.	.	.
Xe-135	Cl	.	.	.	.

- The activity of this nuclide is less than the LLD listed on the appropriate table.
- There were no Radwaste liquid discharges in July, 1992.

DRESDEN NUCLEAR POWER STATION
UNITS 1, 2, AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
October Through December 1992

Radiation

LIQUID EFFLUENTS

Docket Numbers: 50-10
50-237
50-249

BATCH MODE					
NUCLIDES RELEASED	UNIT	OCTOBER	NOVEMBER	DECEMBER	4th QUARTER TOTAL
Gr-89	C1	.	.	.	.
Gr-90	C1	.	.	.	.
Mn-54	C1	3.56E-05	1.83E-05	.	5.40E-05
Co-58	C1	.	.	.	.
Fe-59	C1	.	.	.	.
Co-60	C1	1.43E-04	4.63E-05	.	1.87E-04
Zn-65	C1	.	.	.	.
Sr-90	C1	.	.	.	.
I-131	C1	.	.	.	.
Cs-134	C1	.	.	.	.
Cs-137	C1	1.26E-05	1.70E-05	.	2.96E-05
Ba-140	C1	.	.	.	.
La-140	C1	.	.	.	.
Ce-141	C1	.	.	.	.
Ce-144	C1	.	.	.	.
Pr-144	C1	.	.	.	.
Sm-153	C1	.	.	.	.
Eu-154	C1	.	.	.	.
Eu-155	C1	.	.	.	.
Eu-156	C1	.	.	.	.
Am-241	C1	.	.	.	.
Am-243	C1	.	.	.	.
Am-244	C1	.	.	.	.
Am-245	C1	.	.	.	.
Am-246	C1	.	.	.	.
Am-247	C1	.	.	.	.
Am-248	C1	.	.	.	.
Am-249	C1	.	.	.	.
Am-250	C1	.	.	.	.
Am-251	C1	.	.	.	.
Am-252	C1	.	.	.	.
Am-253	C1	.	.	.	.
Am-254	C1	.	.	.	.
Am-255	C1	.	.	.	.
Am-256	C1	.	.	.	.
Am-257	C1	.	.	.	.
Am-258	C1	.	.	.	.
Am-259	C1	.	.	.	.
Am-260	C1	.	.	.	.
Am-261	C1	.	.	.	.
Am-262	C1	.	.	.	.
Am-263	C1	.	.	.	.
Am-264	C1	.	.	.	.
Am-265	C1	.	.	.	.
Am-266	C1	.	.	.	.
Am-267	C1	.	.	.	.
Am-268	C1	.	.	.	.
Am-269	C1	.	.	.	.
Am-270	C1	.	.	.	.
Am-271	C1	.	.	.	.
Am-272	C1	.	.	.	.
Am-273	C1	.	.	.	.
Am-274	C1	.	.	.	.
Am-275	C1	.	.	.	.
Am-276	C1	.	.	.	.
Am-277	C1	.	.	.	.
Am-278	C1	.	.	.	.
Am-279	C1	.	.	.	.
Am-280	C1	.	.	.	.
Am-281	C1	.	.	.	.
Am-282	C1	.	.	.	.
Am-283	C1	.	.	.	.
Am-284	C1	.	.	.	.
Am-285	C1	.	.	.	.
Am-286	C1	.	.	.	.
Am-287	C1	.	.	.	.
Am-288	C1
Am-289	C1
Am-290	C1
Am-291	C1
Am-292	C1
Am-293	C1
Am-294	C1
Am-295	C1
Am-296	C1
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Am-300	C1
Am-301	C1
Am-302	C1
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Am-304	C1
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Am-306	C1
Am-307	C1
Am-308	C1
Am-309	C1
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Am-312	C1
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Am-314	C1
Am-315	C1
Am-316	C1
Am-317	C1
Am-318	C1
Am-319	C1
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Am-322	C1
Am-323	C1
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Am-326	C1
Am-327	C1
Am-328	C1
Am-329	C1
Am-330	C1
Am-331	C1
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Am-333	C1
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Am-336	C1
Am-337	C1
Am-338	C1
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Am-343	C1
Am-344	C1
Am-345	C1
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Am-366	C1
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Am-370	C1
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Am-372	C1
Am-373	C1
Am-374	C1
Am-375	C1
Am-376	C1
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Am-379	C1
Am-380	C1
Am-381	C1
Am-382	C1
Am-383	C1
Am-384	C1
Am-385	C1
Am-386	C1
Am-387	C1
Am-388	C1	.	.	.	.
Am-389	C1	.	.	.	.
Am-390	C1	.	.	.	.
Am-391	C1	.	.	.	.
Am-392	C1	.	.	.	.
Am-393	C1	.	.	.	.
Am-394	C1	.	.	.	.
Am-395	C1	.	.	.	.
Am-396	C1	.	.	.	.
Am-397	C1	.	.	.	.
Am-398	C1	.	.	.	.
Am-399	C1	.	.	.	.
Am-400	C1	.	.	.	.
Am-401	C1	.	.	.	.
Am-402	C1	.	.	.	.
Am-403	C1	.	.	.	.
Am-404	C1	.	.	.	.
Am-405	C1	.	.	.	.
Am-406	C1	.	.	.	.
Am-407	C1	.	.	.	.
Am-408	C1	.	.	.	.
Am-409	C1	.	.	.	.
Am-410	C1	.	.	.	.
Am-411	C1	.	.	.	.
Am-412	C1	.	.	.	.
Am-413	C1	.	.	.	.
Am-414	C1	.	.	.	.
Am-415	C1	.	.	.	.
Am-416	C1	.	.	.	.
Am-417	C1	.	.	.	.
Am-418	C1	.	.	.	.
Am-419	C1	.	.	.	.
Am-420	C1	.	.	.	.
Am-421	C1	.	.	.	.
Am-422	C1	.	.	.	.
Am-423	C1	.	.	.	.
Am-424	C1	.	.	.	.
Am-425	C1	.	.	.	.
Am-426	C1	.	.	.	.
Am-427	C1	.	.	.	.
Am-428	C1	.	.	.	.
Am-429	C1	.	.	.	.
Am-430	C1	.	.	.	.
Am-431	C1	.	.	.	.
Am-432	C1	.	.	.	.
Am-433	C1	.	.	.	.
Am-434	C1	.	.	.	.
Am-435	C1	.	.	.	.
Am-436	C1	.	.	.	.
Am-437	C1	.	.	.	.
Am-438	C1	.	.	.	.
Am-439	C1	.	.	.	.
Am-440	C1
Am-441	C1
Am-442	C1
Am-443	C1
Am-444	C1
Am-445	C1
Am-446	C1
Am-447	C1
Am-448	C1
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Am-450	C1
Am-451	C1
Am-452	C1
Am-453	C1
Am-454	C1
Am-455	C1
Am-456	C1
Am-457	C1
Am-458	C1
Am-459	C1	.	.	.	.
Am-460	C1	.	.	.	.
Am-461	C1	.	.	.	.
Am-462	C1	.	.	.	.
Am-463	C1	.	.	.	.
Am-464	C1	.	.	.	.
Am-465	C1	.	.	.	.
Am-466	C1	.	.	.	.
Am-467	C1	.	.	.	.
Am-468	C1	.	.	.	.
Am-469	C1	.	.	.	.
Am-470	C1	.	.	.	.
Am-471	C1	.	.	.	.
Am-472	C1	.	.	.	.
Am-473	C1	.	.	.	.
Am-474	C1	.	.	.	.
Am-475	C1	.	.	.	.
Am-476	C1	.	.	.	.
Am-477	C1	.	.	.	.
Am-478	C1	.	.	.	.
Am-479	C1	.	.	.	.
Am-480	C1
Am-481	C1
Am-482	C1
Am-483	C1
Am-484	C1
Am-485	C1
Am-486	C1
Am-487	C1
Am-488	C1
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Am-491	C1
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Am-498	C1
Am-499	C1
Am-500	C1
Am-501	C1
Am-502	C1
Am-503	C1
Am-504	C1
Am-505	C1
Am-506	C1
Am-507	C1	.	.	.	.
Am-508	C1	.	.	.	.
Am-509	C1	.	.	.	.
Am-510	C1	.	.	.	.
Am-511	C1	.	.	.	.
Am-512	C1	.	.	.	.
Am-513	C1	.	.	.	.
Am-514	C1	.	.	.	.
Am-515	C1	.	.	.	.
Am-516	C1	.	.	.	.
Am-517	C1	.	.	.	.
Am-518	C1	.	.	.	.
Am-519	C1	.	.	.	.
Am-520	C1	.	.	.	.
Am-521	C1	.	.	.	.
Am-522	C1	.	.	.	.
Am-523	C1	.	.	.	.
Am-524	C1	.	.	.	.
Am-525	C1	.	.	.	.
Am-526	C1	.	.	.	.
Am-527	C1	.	.	.	.
Am-528	C1	.	.	.	.
Am-529	C1	.	.	.	.
Am-530	C1	.	.	.	.
Am-531	C1	.	.	.	.
Am-532	C1	.	.	.	.
Am-533	C1	.	.	.	.
Am-534	C1	.	.	.	.
Am-535	C1	.	.	.	.
Am-536	C1	.	.	.	.
Am-537	C1	.	.	.	.
Am-538	C1	.	.	.	.
Am-					

DRESDEN NUCLEAR POWER STATION
UNITS 2 AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through December 1992

CCSW

LIQUID EFFLUENTS

Docket Numbers: 50-237
50-249

1. Number of Batch Releases: 60
2. Total Time Period for Batch Releases: 7.44E+01 min
3. Maximum Time Period for a Batch Release: 1.24E+00 min
4. Average Time Period for Batch Releases: 1.24E+00 min
5. Minimum Time Period for a Batch Release: 1.24E+00 min
6. Average Stream Flow During Periods of Release of Effluent into a Flowing Stream: 2.83E+06 L/min

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		3rd QUARTER	4th QUARTER	3rd QUARTER	4th QUARTER
Sc-89	Cl			.	.
Sc-90	Cl			.	.
Mn-54	Cl			2.80E-06	1.11E-06
Co-58	Cl			.	.
Fe-59	Cl			.	.
Co-60	Cl			2.81E-05	3.17E-05
Zn-65	Cl			.	.
Sb-122	Cl			.	.
Sb-124	Cl			.	.
I-131	Cl			.	.
I-132	Cl			.	.
I-135	Cl			.	.
Cs-134	Cl			.	.
Cs-137	Cl			6.63E-06	4.48E-05
Ba-140	Cl			.	.
La-140	Cl			.	.
Ce-138	Cl			.	.
Fe-55	Cl			.	.
Rb-214	Cl			1.18E-06	1.48E-06
Pb-212	Cl			1.12E-06	1.82E-06
	Cl				
(above)	Cl				
Total For Period	Cl	NONE	NONE	4.02E-05	8.12E-05
Yb-133	Cl			7.70E-06	.
Xe-135	Cl			1.12E-05	.

* The activity of this nuclide is less than the LLD listed on the appropriate table.

DRESDEN NUCLEAR POWER STATION
UNITS 2 AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through September 1992

CCSW LIQUID EFFLUENTS Docket Numbers: 50-237
50-249

NUCLIDES RELEASED	UNIT	JULY	AUGUST	SEPTEMBER	1st QUARTER TOTAL
Sr-89	C1	.	.	.	.
Sr-90	C1	.	.	.	.
Mn-54	C1	.	2.80E-06	.	2.80E-06
Co-58	C1	.	.	.	.
Fe-59	C1	.	.	.	.
Co-60	C1	4.24E-06	2.07E-05	3.87E-06	2.81E-05
Zn-65	C1	.	.	.	.
Sb-122	C1	.	.	.	.
Sh-124	C1	.	.	.	.
I-131	C1	.	.	.	.
I-132	C1	.	.	.	.
I-135	C1	.	.	.	.
Co-134	C1	.	.	.	.
Cs-137	C1	.	3.45E-06	3.19E-06	6.63E-06
Ba-140	C1	.	.	.	.
La-140	C1	.	.	.	.
Ce-138	C1	.	.	.	.
Pr-145	C1	.	.	.	.
Rb-214	C1	.	1.15E-06	.	1.15E-06
Pb-212	C1	.	1.37E-06	.	1.37E-06
(above)	C1	.	.	.	.
Total For Period	C1	4.24E-06	2.09E-05	2.06E-06	4.22E-05
Mo-103	C1	.	7.70E-06	.	7.70E-06
Mo-102	C1	.	1.35E-05	.	1.35E-05

* The activity of this nuclide is less than the LLD listed on the appropriate table.

**DRESDEN NUCLEAR POWER STATION
UNITS 2 AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
October Through December, 1992**

CCSW

LIQUID EFFLUENTS

Docket Numbers: 50-237
50-249

NUCLEIDES RELEASED	UNIT	BATCH AVERAGE			4th QUARTER TOTAL
		OCTOBER	NOVEMBER	DECEMBER	
Sr-90	C1	.	.	.	.
Sr-90	C1	.	.	.	.
Mn-54	C1	3.15E-07	2.07E-06	9.17E-07	1.11E-06
Co-58	C1	.	.	.	.
Po-59	C1	.	.	.	.
Cs-137	C1	8.45E-06	1.67E-05	8.67E-06	3.12E-05
Re-186	C1	.	.	.	.
Sr-90	C1	.	.	.	.
Sr-90	C1	.	.	.	.
Sr-90	C1	.	.	.	.
I-131	C1	.	.	.	.
I-132	C1	.	.	.	.
I-135	C1	.	.	.	.
Cs-134	C1	.	.	.	.
Cs-137	C1	1.17E-05	1.35E-05	1.04E-05	4.56E-05
Re-186	C1	.	.	.	.
I-131	C1	.	.	.	.
Cs-137	C1	.	.	.	.
Po-59	C1	.	.	.	.
Bi-214	C1	.	1.48E-06	.	1.48E-06
Th-232	C1	.	2.67E-06	8.19E-07	1.89E-06
	C1	.	.	.	.
	C1	.	.	.	.
(above)	C1	.	.	.	.
Total For Period	C1	1.12E-05	3.43E-05	1.89E-05	6.44E-05
Xc-133	C1	.	.	.	.
Th-232	C1	.	.	.	.

* The activity of this radionuclide is less than the LLD listed on the appropriate table.

DRESDEN NUCLEAR POWER STATION
UNITS 1, 2, AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

July Through December, 1992

Docket Numbers: 50-10
50-237
50-249

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Est. Tot.
Error, %

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL)

1. Type of Waste	Unit	6-month period	
a. Spent resins, filter sludges, evaporator bottoms, etc.	m3	3.10E+02	
	CI	5.90E+02	12.4
b. Dry compressible waste, contaminated equip., etc.	m3	8.65E+02	
	CI	9.86E+00	16.6
c. Irradiated components, control rods, etc.	m3	4.85E+01	
	CI	3.09E+04	16.6
d. Other (describe) Sewage Treatment Plant dist	m3	3.26E+01	
	CI	1.27E+01	

2. Estimate of Major Nuclide Composition (by type of waste)

		CI
a.	Co-60	47.0
	Fe-55	28.8
	Mn-54	2.93
	Ni-63	9.03
	Cs-137	4.41
b.	Co-60	21.2
	Fe-55	64.4
	Mn-54	6.15
	Ni-63	1.32
	Cs-137	1.02
	Co-60	5.14
c.	Co-60	52.2
	Mn-54	2.03
	Fe-55	42.2
	Ni-63	1.19
d.	Mn-54	4.40
	Fe-55	64.3
	Fe-59	1.45
	Co-60	24.2
	Ni-63	1.13
	Cs-137	2.64

3. Solid Waste Disposition

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
6	Motor freight (exclusive use only)	CNSI, Barnwell, SC
9	Motor freight (exclusive use only)	Quadrex, Oak Ridge, TN
6	Motor freight (exclusive use only)	CNSI, Channahon, IL
10	Motor freight (exclusive use only)	SEG, Oak Ridge, TN
15	Motor freight (exclusive use only)	US Ecology, Beatty, NV

B. IRRADIATED FUEL SHIPMENTS (Disposition)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
None		

DRESDEN NUCLEAR POWER STATION
UNITS 1, 2, AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

July Through December 1992

ABNORMAL RELEASES

A. LIQUID

1. Number of Releases: 1
2. Total Activity Released: 9.62E-04 Ci

B. CASEOUS

1. Number of Releases: 3
2. Total Activity Released: 7.48E-07 Ci

TOTAL 4

- A. 1. Units 2/3 B Condensate Storage Tank (2/3-3303b) leaked water to the ground on September 25, 1992. The leak started at approximately 1430 and was contained by 2030. The leak rate was about 3/4 gallon per minute. The estimated activity released is:

Mn-54	6.73E-08	CI
Fe-59	5.79E-08	CI
Co-60	3.11E-07	CI
Xo-133	1.65E-07	CI
Xo-135	1.84E-07	CI
H-3	9.61E-04	CI

- B. 1. The Unit 1 backup sampler failed between July 20, 1992 at 10:30 and July 21, 1992 at 10:53. The tritium sampler was setup and running during this period with particulate and iodine filters. The estimated activity during this period is:

Fe-55	1.43E-07	CL
Sr-90	7.71E-10	CL
Gross Alpha	1.65E-08	CL

DRESDEN NUCLEAR POWER STATION

UNITS 1, 2 AND 3

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT

January Through June 1992

ABNORMAL RELEASES

2. On October 15, 1992 at 06:30, the Units 2/3 Chimney SPINC lost power. Power was restored at 09:00. A tritium sampler was running at this time. The last SPINC filters and the tritium sample particulate and iodine filters showed no gamma emitting activity. The next SPINC sample was positive for iodine, therefore the release during this period is based on the SPINC sample following the lost power.

1-131	1.12E-08	Cl
Fo-55	2.13E-07	Cl
Sr-89	5.37E-08	Cl
Sr-90	9.05E-10	Cl
Gross Alpha	1.60E-09	Cl

3. The Unit 3 incocondenser released radioactivity on October 20, 1992. The release based on the latest analysis of incocondenser water is:

Mn-54	4.30E-08 CI
Co-60	7.63E-07 CI

DRESDEN NUCLEAR POWER STATION DOCKET NOS. 50-10, 50-237, 50-249

RADIOLOGICAL IMPACT ON MAN

DRESDEN UNIT ONE

1992 ANNUAL REPORT MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES PERIOD OF RELEASE - 01/01/92 TO 12/31/92 CALCULATED 02/22/93 INFANT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	0.00E+00 ()	0.00E+00 ()	0.00E+00 ()	0.00E+00 ()	0.00E+00 ()
BETA AIR (MRAD)	0.00E+00 ()	0.00E+00 ()	0.00E+00 ()	0.00E+00 ()	0.00E+00 ()
TOT. BODY (MREM)	0.00E+00 ()	0.00E+00 ()	0.00E+00 ()	0.00E+00 ()	0.00E+00 ()
SKIN (MREM)	0.00E+00 ()	0.00E+00 ()	0.00E+00 ()	0.00E+00 ()	0.00E+00 ()
ORGAN (MREM)	1.07E-05 (SE)	7.68E-06 (SE)	1.14E-06 (N)	1.11E-06 (N)	2.04E-05 (SE)
	LIVER	LIVER	LUNG	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1992

COMPLIANCE STATUS - 10 CFR 50 APP. 1 INFANT RECEPTOR

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-NOV	YRLY OBJ	% OF APP. 1
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.00	0.00	0.00	0.00	5.0	0.00
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.00
ORGAN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.00
		LIVER	LIVER	LUNG	LIVER		LIVER

RESULTS BASED UP
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT ONE

1992 ANNUAL REPORT

MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES

PERIOD OF RELEASE - 01/01/92 TO 12/31/92 CALCULATED 02/22/93

ADULT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(MRAD)	()	()	()	()	()
BETA AIR	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(MRAD)	()	()	()	()	()
TOT. BODY	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(MREM)	()	()	()	()	()
SKIN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(MREM)	()	()	()	()	()
ORGAN	9.44E-06	1.32E-05	6.78E-06	4.40E-06	3.39E-05
(MREM)	(SE)	(SE)	(SE)	(SE)	(SE)
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1992.

COMPLIANCE STATUS - 10 CFR 50 APP. I ADULT RECEPTOR

QTRLY OBJ	----- % OF APP I. -----				YRLY OBJ	% OF APP. I
	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-NOV		
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	10.0	0.00
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.00	0.00	0.00	5.0	0.00
SKIN (MREM)	7.5	0.00	0.00	0.00	15.0	0.00
ORGAN (MREM)	7.5	0.00	0.00	0.00	15.0	0.00
	LIVER	LIVER	LIVER	LIVER		LIVER

RESULTS BASED UPC
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT TWO

1992 ANNUAL REPORT MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES PERIOD OF RELEASE - 01/01/92 TO 12/31/92 CALCULATED 02/26/93 INFANT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	1.47E-04 (NE)	5.95E-06 (NE)	3.83E-06 (NE)	1.05E-05 (NE)	1.68E-04 (NE)
BETA AIR (MRAD)	2.00E-05 (N)	1.25E-06 (N)	8.07E-07 (N)	2.20E-06 (N)	2.43E-05 (N)
TOT. BODY (MREM)	7.20E-05 (NE)	2.50E-06 (NE)	1.61E-06 (NE)	4.40E-06 (NE)	8.05E-05 (NE)
SKIN (MREM)	1.30E-04 (NE)	5.47E-06 (NE)	3.52E-06 (NE)	9.61E-06 (NE)	1.48E-04 (NE)
ORGAN (MREM)	1.47E-02 (NNE)	8.65E-03 (NNE)	8.59E-04 (NNE)	1.72E-03 (NNE)	2.58E-02 (NNE)
	LUNG	LUNG	THYROID	LUNG	LUNG

THIS IS A REPORT FOR THE CALENDAR YEAR 1992

COMPLIANCE STATUS - 10 CFR 50 APP. I INFANT RECEPTOR

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-NOV	YRLY OBJ	% OF APP. I
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.00	0.00	0.00	0.00	5.0	0.00
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.00
ORGAN (MREM)	7.5	0.20	0.12	0.01	0.02	15.0	0.17
		LUNG	LUNG	THYROID	LUNG		LUNG

RESULTS BASED UFG:
ODCM ANNEX
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DRESDEN UNIT TWO

1992 ANNUAL REPORT
 MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
 PERIOD OF RELEASE - 01/01/92 TO 12/31/92 CALCULATED 02/26/93
 ADULT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR	1.47E-04	5.95E-06	3.83E-06	1.05E-05	1.68E-04
(MRAD)	(NE)	(NE)	(NE)	(NE)	(NE)
BETA AIR	2.00E-05	1.25E-06	8.07E-07	2.20E-06	2.43E-05
(MRAD)	(N)	(N)	(N)	(N)	(N)
TOT. BODY	7.20E-05	2.50E-06	1.61E-06	4.40E-06	8.05E-05
(MREM)	(NE)	(NE)	(NE)	(NE)	(NE)
SKIN	1.30E-04	5.47E-06	3.52E-06	9.61E-06	1.48E-04
(MREM)	(NE)	(NE)	(NE)	(NE)	(NE)
ORGAN	1.50E-02	8.98E-03	1.01E-03	1.89E-03	2.67E-02
(MREM)	(NNE)	(NNE)	(NNE)	(NNE)	(NNE)
	LUNG	LUNG	THYROID	LUNG	LUNG

THIS IS A REPORT FOR THE CALENDAR YEAR 1992

COMPLIANCE STATUS - 10 CFR 50 APP. I ADULT RECEPTOR

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-NOV	YRLY OBJ	% OF APP. I
GAMMA AIR (MPAD)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.00	0.00	0.00	0.00	5.0	0.00
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.00
ORGAN (MREM)	7.5	0.20	0.12	0.01	0.03	15.0	0.18
		LUNG	LUNG	THYROID	LUNG		LUNG

RESULTS BASED UPON
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DRESDEN UNIT THREE

1992 ANNUAL REPORT

MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
PERIOD OF RELEASE - 01/01/92 TO 12/31/92 CALCULATED 02/26/93
INFANT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	0.00E+00 ()	9.59E-06 (NE)	1.45E-05 (NE)	3.35E-05 (NE)	5.75E-05 (NE)
BETA AIR (MRAD)	0.00E+00 ()	2.02E-06 (N)	3.05E-06 (N)	7.05E-06 (N)	1.21E-05 (N)
TOT. BODY (MREM)	0.00E+00 ()	4.03E-06 (NE)	6.08E-06 (NE)	1.41E-05 (NE)	2.42E-05 (NE)
SKIN (MREM)	0.00E+00 ()	8.81E-06 (NE)	1.33E-05 (NE)	3.07E-05 (NE)	5.28E-05 (NE)
ORGAN (MREM)	6.82E-04 (NNE)	1.24E-02 (NNE)	4.32E-03 (NNE)	9.86E-03 (NNE)	2.66E-02 (NNE)
	LUNG	LUNG	THYROID	LUNG	THYROID

THIS IS A REPORT FOR THE CALENDAR YEAR 1992

COMPLIANCE STATUS - 10 CFR 50 APP. I INFANT RECEPTOR

	QTRLY OBJ	----- % OF APP I. -----				YRLY OBJ	% OF APP.
		1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-NOV		
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.00	10.0	0.0
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.0
TOT. BODY (MREM)	2.5	0.00	0.00	0.00	0.00	5.0	0.0
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.0
ORGAN (MREM)	7.5	0.01	0.16	0.06	0.13	15.0	0.1
		LUNG	LUNG	THYROID	LUNG		THYROI

RESULTS BASED UP
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MARCH 1989

DRESDEN UNIT THREE

1992 ANNUAL REPORT
MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
PERIOD OF RELEASE - 01/01/92 TO 12/31/92 CALCULATED 02/26/93
ADULT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR	0.00E+00	9.59E-06	1.45E-05	3.35E-05	5.75E-05
(MRAD)	()	(NE)	(NE)	(NE)	(NE)
BETA AIR	0.00E+00	2.02E-06	3.05E-06	7.05E-06	1.21E-05
(MRAD)	()	(N)	(N)	(N)	(N)
TOT. BODY	0.00E+00	4.03E-06	6.08E-06	1.41E-05	2.42E-05
(MREM)	()	(NE)	(NE)	(NE)	(NE)
SKIN	0.00E+00	8.81E-06	1.33E-05	3.07E-05	5.28E-05
(MREM)	()	(NE)	(NE)	(NE)	(NE)
ORGAN	6.92E-04	1.37E-02	5.04E-03	1.05E-02	2.89E-02
(MREM)	(NNE)	(NNE)	(NNE)	(NNE)	(NNE)
	LUNG	GI-LLI	THYROID	LUNG	GI-LLI

THIS IS A REPORT FOR THE CALENDAR YEAR 1992

COMPLIANCE STATUS - 10 CFR 50 APP. I
ADULT RECEPTOR

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-NOV	YRLY OBJ	% OF APP. I
		----- % OF APP I. -----					
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.00	0.00	0.00	0.00	5.0	0.00
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.00
ORGAN (MREM)	7.5	0.01	0.18	0.07	0.14	15.0	0.19
		LUNG	GI-LLI	THYROID	LUNG		GI-LLI

RESULTS BASED UPC
ODCM ANNEX
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MARCH 1989

DRESDEN UNIT TWO
INFANT RECEPTOR

1992 ANNUAL REPORT
MAXIMUM DOSES (MREM) RESULTING FROM LIQUID EFFLUENTS
PERIOD OF RELEASE - 01/01/92 TO 12/31/92 CALCULATED 02/24/93

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	1.09E-05	9.95E-06	5.41E-06	2.21E-06	2.85E-05
INTERNAL ORGAN	2.67E-05	2.65E-05	6.43E-06	3.22E-06	6.29E-05
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1992
COMPLIANCE STATUS - 10 CFR 50 APP. I

----- % OF APP I. -----							
	QTHLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-NOV	YRLY OBJ	% OF APP. I
TOTAL BODY (MREM)	1.5	0.00	0.00	0.00	0.00	3.0	0.00
CRIT. ORGAN(MREM)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
		LIVER	LIVER	LIVER	LIVER		LIVER

RESULTS BASED UPON:
ODCM ANNEX
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MARCH 1989

DRESDEN UNIT TWO
INFANT RECEPTOR

1992 ANNUAL REPORT
PROJECTED DOSE AT NEAREST COMMUNITY WATER SYSTEM *
PERIOD OF RELEASE - 01/01/92 TO 12/31/92 CALCULATED 02/24/93

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL	1.09E-05	9.95E-06	5.41E-06	2.21E-06	2.85E-05
BODY					
INTERNAL	2.67E-05	2.65E-05	6.43E-06	3.22E-06	6.29E-05
ORGAN					
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1992

COMPLIANCE STATUS - 40 CFR 141

TYPE	ANNUAL LIMIT	% OF LIMIT
TOTAL	4.0 (MREM)	0.001
BODY		
INTERNAL	4.0 (MREM)	0.002
ORGAN		
		LIVER

* THIS CALCULATION OF DOSE IS BASED ON TECHNIQUES DESCRIBED IN THE COMMONWEALTH EDISON OFFSITE DOSE CALCULATION MANUAL. THESE TECHNIQUES DIFFER FROM THOSE DESCRIBED IN 40 CFR 141.

RESULTS BASED UPON
ODCM ANNEX
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MARCH 1989

DRESDEN UNIT TWO
ADULT RECEPTOR

1992 ANNUAL REPORT
MAXIMUM DOSES (MREM) RESULTING FROM LIQUID EFFLUENTS
PERIOD OF RELEASE - 01/01/92 TO 12/31/92 CALCULATED 02/24/93

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	3.51E-05	3.70E-05	3.91E-06	2.76E-06	7.87E-05
INTERNAL ORGAN	5.23E-05	5.47E-05	5.01E-06	3.83E-06	1.16E-04
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1992

COMPLIANCE STATUS - 10 CFR 50 APP. I

		----- 1 OF APP I. -----					
	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-NOV	YPLY OBJ	1 OF APP.
TOTAL BODY (MREM)	1.5	0.00	0.00	0.00	0.00	3.0	0.0
CRIT. ORGAN(MREM)	5.0	0.00	0.00	0.00	0.00	10.0	0.0
		LIVER	LIVER	LIVER	LIVER		LIVER

RESULTS BASED UI
ODCM ANNEX
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MARCH 1989

DRESDEN UNIT TWO
ADULT RECEPTOR

1992 ANNUAL REPORT
PROJECTED DOSE AT NEAREST COMMUNITY WATER SYSTEM *
PERIOD OF RELEASE - 01/01/92 TO 12/31/92 CALCULATED 02/24/93

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL	4.94E-06	5.00E-06	1.93E-06	8.46E-07	1.27E-05
BODY					
INTERNAL	7.03E-06	5.90E-06	2.03E-06	9.11E-07	1.48E-05
ORGAN					
	GI-LLI	LIVER	GI-LLI	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1992

COMPLIANCE STATUS - 40 CFR 141

TYPE	ANNUAL LIMIT	% OF LIMIT
TOTAL	4.0 (MREM)	0.000
BODY		
INTERNAL	4.0 (MREM)	0.000
ORGAN		
		LIVER

* THIS CALCULATION OF DOSE IS BASED ON TECHNIQUES DESCRIBED IN THE COMMONWEALTH EDISON OFFSITE DOSE CALCULATION MANUAL. THESE TECHNIQUES DIFFER FROM THOSE DESCRIBED IN 40 CFR 141.

RESULTS BASED ON
ODCM ANNEX
REVISION 0
MARCH 1989

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DRESDEN UNIT THREE
INFANT RECEPTOR

1992 ANNUAL REPORT
MAXIMUM DOSES (MREM) RESULTING FROM LIQUID EFFLUENTS
PERIOD OF RELEASE - 01/01/92 TO 12/31/92 CALCULATED 02/24/93

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL	1.19E-05	1.00E-05	5.38E-06	2.19E-06	2.95E-05
BODY					
INTERNAL	3.03E-05	2.66E-05	6.31E-06	2.69E-06	6.60E-05
ORGAN					
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1992
COMPLIANCE STATUS - 10 CFR 50 APP. I

		1 OF APP I.				YRLY OBJ	% OF APP.
QTPLY OBJ		1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-NOV		
TOTAL BODY (MREM)	1.5	0.00	0.00	0.00	0.00	3.0	0.0
CRIT. ORGAN(MREM)	5.0	0.00	0.00	0.00	0.00	10.0	0.0
		LIVER	LIVER	LIVER	LIVER		LIVER

RESULTS BASED U
ODCH ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT THREE
INFANT RECEPTOR

1992 ANNUAL REPORT
PROJECTED DOSE AT NEAREST COMMUNITY WATER SYSTEM •
PERIOD OF RELEASE - 01/01/92 TO 12/31/92 CALCULATED 02/24/93

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL	1.19E-05	1.00E-05	5.39E-06	2.19E-06	2.95E-05
BCDY					
INTERNAL	3.03E-05	2.66E-05	6.31E-06	2.69E-06	6.60E-05
ORGAN					
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1992

COMPLIANCE STATUS - 40 CFR 141

TYPE	ANNUAL LIMIT	% OF LIMIT
TOTAL	4.0 (MREM)	0.001
BODY		
INTERNAL	4.0 (MREM)	0.002
ORGAN		LIVER

• THIS CALCULATION OF DOSE IS BASED ON TECHNIQUES DESCRIBED IN THE COMMONWEALTH EDISON OFFSITE DOSE CALCULATION MANUAL. THESE TECHNIQUES DIFFER FROM THOSE DESCRIBED IN 40 CFR 141.

RESULTS BASED UPC
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DRESDEN UNIT THREE
ADULT RECEPTOR

1992 ANNUAL REPORT
MAXIMUM DOSES (MREM) RESULTING FROM LIQUID EFFLUENTS
PERIOD OF RELEASE - 01/01/92 TO 12/31/92 CALCULATED 02/24/93

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	4.11E-05	3.71E-05	3.71E-06	1.78E-06	8.39E-05
INTERNAL ORGAN	6.16E-05	5.49E-05	4.72E-06	2.34E-06	1.24E-04
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1992

COMPLIANCE STATUS - 10 CFR 50 APP. I

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-NOV	YRLY OBJ	% OF APP.
TOTAL BODY (MREM)	1.5	0.00	0.00	0.00	0.00	3.0	0.0
CRIT. ORGAN (MREM)	5.0	0.00	0.00	0.00	0.00	10.0	0.0
		LIVER	LIVER	LIVER	LIVER		LIVER

RESULTS BASED UI
ODCM ANNEX
REVISION 0
MARCH 1989

**DRESDEN UNIT THREE
ADULT RECEPTOR**

**1992 ANNUAL REPORT
PROJECTED DOSE AT NEAREST COMMUNITY WATER SYSTEM *
PERIOD OF RELEASE - 01/01/92 TO 12/31/92 CALCULATED 02/24/93**

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL	5.44E-06	5.03E-06	1.91E-06	7.86E-07	1.32E-05
BODY					
INTERNAL	8.49E-06	5.91E-06	2.00E-06	8.56E-07	1.55E-05
ORGAN					
	GI-LLI	LIVER	GI-LLI	GI-LLI	GI-LLI

THIS IS A REPORT FOR THE CALENDAR YEAR 1992

COMPLIANCE STATUS - 40 CFR 141

TYPE	ANNUAL LIMIT	% OF LIMIT
TOTAL	4.0 (MREM)	0.000
BODY		
INTERNAL	4.0 (MREM)	0.000
ORGAN		
		GI-LLI

* THIS CALCULATION OF DOSE IS BASED ON TECHNIQUES DESCRIBED IN THE COMMONWEALTH EDISON OFFSITE DOSE CALCULATION MANUAL. THESE TECHNIQUES DIFFER FROM THOSE DESCRIBED IN 40 CFR 141.

RESULTS BASED UPO
ODCM ANNEX
REVISION 0
MARCH 1989

METEOROLOGICAL DATA

[illegible]

SECRET

[illegible]

0-25-114000-9

[illegible]

DECLASSIFIED: 10/10/2012 BY 60322
 2011 10/10/2012

001121418 0000 000 00000 0000 00 00
001121418 0000 000 00000 0000 00 00

WIND OBSERVATION STATION
100 FT. WIND SPEED AND WIND DIRECTION

July-September 1992
100-25 FT. DIFFERENTIAL TEMPERATURE

SPEED CLASS	WIND DIRECTION CLASSES																TOTAL	STABILITY CLASSES								TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	WW	WNW		CU	CS	SS	NS	ES				
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
1 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
2 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
3 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
4 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
5 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
6 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
7 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
8 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
9 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
10 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
11 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
12 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
13 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
14 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
15 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
16 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
17 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
18 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
19 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
20 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
21 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
22 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
23 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
24 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
25 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
26 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
27 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
28 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
29 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
30 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
31 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
32 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
33 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
34 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
35 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
36 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
37 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
38 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
39 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
40 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
41 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
42 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
43 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
44 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
45 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
46 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
47 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
48 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
49 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
50 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
51 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
52 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
53 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
54 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
55 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
56 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
57 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
58 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
59 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
60 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
61 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
62 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
63 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
64 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
65 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
66 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
67 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
68 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
69 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
70 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
71 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
72 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
73 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
74 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
75 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
76 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
77 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
78 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
79 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00									
80 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00</										

6 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
7 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
8 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
9 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
10 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
11 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
12 BU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	

TOT 1.00

Wind Direction by Stability

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	WW	WNW	TOTAL	STABILITY CLASSES
.77	.54	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	2.83	Extremely unstable
.45	.33	.23	.32	.34	.27	.27	.34	.28	.25	.25	.23	.23	.23	.23	.23	4.40	Moderately unstable
.23	.41	.41	.33	.38	.23	.22	.45	.35	.32	1.24	1.24	.32	.33	.33	.33	6.88	Slightly unstable
1.81	1.83	1.81	1.83	1.35	1.45	1.41	1.34	1.38	2.81	2.82	2.48	3.24	1.35	1.35	2.24	28.81	Neutral
1.50	1.50	.54	1.54	1.45	1.50	2.43	2.48	3.12	1.35	2.18	2.58	2.58	1.38	1.32	1.45	28.58	Slightly stable
.27	.34	1.34	.34	.32	.33	1.38	.31	.32	.38	.31	1.31	1.31	.27	.27	1.22	12.15	Moderately stable
.45	.35	.41	.35	.35	.35	.23	.32	.34	.38	.45	.27	.32	.35	.35	.35	3.58	Extremely stable

Wind Direction by Wind Speed

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	WW	WNW	TOTAL	WIND SPEED CLASSES
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.0 - 1.9 mph
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.0 - 3.9 mph
1.25	.82	.81	.77	1.24	.84	.88	1.12	1.31	.88	1.35	1.42	1.54	1.12	1.12	1.22	16.55	4.0 - 7.9 mph
1.77	1.55	1.81	2.72	1.72	1.78	2.48	2.55	3.85	2.72	2.54	2.45	2.54	2.18	2.57	2.54	35.41	8.0 - 11.9 mph
2.38	2.37	1.52	.33	.38	1.52	2.81	2.88	2.81	2.45	3.17	2.72	3.35	2.18	1.59	2.83	35.22	12.0 - 15.9 mph
.34	.33	.38	.35	.35	.27	.38	.38	1.27	1.81	1.18	.38	.37	.35	.33	.32	15.15	16.0 - 24.9 mph
.00	.00	.00	.00	.00	.00	.00	.00	.00	.23	.34	.35	.34	.35	.35	.35	.73	> 24.9 mph

October-December 1932
193-34 12. CONFIDENTIAL. FROTHBART

Wind Direction and Speed

Using Surveys to Find Out

[illegible]

October-December 1992
356-38 °F. SURFACE TEMPERATURE

Was Directed by Stanley

Wind direction by wind speed

0	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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