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Dresden Nuclear Power Station
R.R. #1
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Telephone 815/942-2920

August 15, 1992

CWS LTR #: 92-424

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 corrected Radioactive Effluent Report for July through December, 1991 for Dresden Nuclear Power Station. Projected data for Sr-89, Sr-90, Fe55, H-3 and Gross Alpha for October through December was replaced with actual sample results.

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

Sincerely Yours,

L. F. Hamm for 8/27/92

Charles W. Schroeder
Station Manager
Dresden Nuclear Power Station

CWS:MG:dk

Enclosure

cc: M. Gagnon
File/NRC
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Nuclear Quality Programs Superintendent
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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 500 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 mixed mode release point.

Dose, Noble Gases

This Specification is provided to implement the requirements of Sections II.B, III.A and IV.A of Appendix I, 10 CFR Part 50. The Limiting Conditions For Operation implement the guides set forth in Section II.3 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 gaseous effluents will be kept "as low as is reasonably achievable." The Surveillance Requirements implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I 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 I," 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 doses 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.

Dose, Radioiodines, 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 ODCM 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 ODCM 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 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I", 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. These equations also provide for determining the actual doses based upon the historical average atmospheric conditions. The release rate specifications for radioiodines, 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 milk animals graze with consumption of the milk by man.

Gaseous Waste Treatment

The OPERABILITY 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 50.36a, General Design Criterion 60 of Appendix A to 10 CFR Part 50, and design objective Section II.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 II, Column 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.

Dose

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 ODCM 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 ODCM 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 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I", Revision 1, October 1977 and Regulatory Guide 1.113, "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 1.113.

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.

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

NUCLIDE	MPC(uCi/ml)*
Kr-85m	2.0E-04
Kr-85	5.0E-04
Kr-87	4.0E-05
Kr-88	9.0E-05
Ar-41	7.0E-05
Xe-131m	7.0E-04
Xe-133m	5.0E-04
Xe-133	6.0E-04
Xe-135m	2.0E-04
Xe-135	2.0E-04

* Computed from Equation 20 of ICRP Publication 2 (1959), adjusted for infinite cloud submersion in water, and R = 0.01 rem/week, density = 1.0 g/cc and Pw/Pt = 1.0.

AVERAGE ENERGY

The average energy of fission and activation gases was calculated for the gaseous effluents released from the site. The average energy is based on the percentage of each fission gas nuclide present and its average energy per disintegration ($\bar{E}$ in MeV/dis) for gamma and beta emissions separately.

$\bar{E}_G$ = 1.95E+00 MeV/dis

$\bar{E}_B$ = 3.49E-01 MeV/dis

EQUIPMENT OUT-OF-SERVICE:

An Environmental Monitoring Station was inadvertantly without power from June 26, 1991 to July 13, 1991. This caused no air sample to be collected at station D-02 (0.3 miles at 50° from station). This power outage was due to construction activities at the station sewage treatment plant. It was not evident that power from the sewage treatment plant also fed the environmental monitoring station. All other (total of 16) station air samplers were operable during this period. The sampler was powered from a point upstream of a breaker for the sewage treatment plant in order to restore power to the sampler.

The Units 2 and 3 Reactor Building Vent SPING (System Particulate Iodine Noble Gas Monitor) was out of service from July 9, 1991 to October 1, 1991. This was due to maintenance work on the SPING to repair leaking valves and fittings. The Unit 2 and Unit 3 Reactor Building Vent Radiation Monitors and their respective Iodine and particulate samplers were utilized during this period.

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.

DRESDEN NUCLEAR POWER STATION
UNITS 1,2, AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through December 1991

GASEOUS EFFLUENTS

SUMMATION OF ALL RELEASES

Docket Numbers: 50-10
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TYPE OF RELEASE	UNITS	3rd QUARTER	4th QUARTER	EST.TOTAL ERROR,%
A. FISSION AND ACTIVATION GASES				
1. Total Release	Ci	8.94E+00	1.34E-05	7.31
2. Average Release Rate for Period	uCi/sec	1.12E+00	1.69E-06	
3. Percent of Technical Specification Limit	%	★	★	
B. IODINES				
1. Total Iodine-131	Ci	8.16E-04	2.08E-05	9.51
2. Average Release Rate of I-131 for Period	uCi/sec	1.03E-04	2.62E-06	
3. Percent of Technical Specification Limit	%	★	★	
4. Total Iodine-131,Iodine-133,and Iodine-135	Ci	7.45E-03	2.04E-03	
C. PARTICULATES				
1. Particulates with half-lives > 8 days	Ci	1.36E-02	5.46E-03	8.09
2. Average Release Rate for Period	uCi/sec	1.71E-03	6.89E-04	
3. Percent of Technical Specification Limit	%	★	★	
4. Gross Alpha Radioactivity	Ci	6.32E-06	5.86E-06	
D. TRITIUM				
1. Total Release	Ci	9.41E-01	7.88E-01	7.89
2. Average Release Rate for Period	uCi/sec	1.18E-01	9.91E-02	
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, iodines, particulates, and tritium.

DRESDEN NUCLEAR POWER STATION
UNITS 1,2, AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through December 1991

GASEOUS EFFLUENTS

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

SUMMATION OF ALL RELEASES

	LLD (uCi/cc)
1. FISSION GASES	
Xe-138	1.48E-07
Xe-135m	6.45E-08
Kr-87	3.46E-08
Kr-88	5.50E-08
Kr-85m	1.67E-08
Kr-85	4.19E-06
Xe-135	1.49E-08
Xe-133	4.06E-08
Ar-41	2.88E-08
Xe-133m	1.32E-07
2. IODINES	
I-131	5.52E-13
I-133	3.40E-12
I-135	4.51E-10
3. PARTICULATES	
Sr-89	1.60E-14
Sr-90	5.00E-15
Cr-51	3.61E-12
Mn-54	4.03E-13
Co-58	4.52E-13
Fe-55	3.00E-14
Fe-59	7.53E-13
Co-60	1.24E-12
Zr-95	7.31E-13
Nb-95	4.44E-13
Mo-99	5.78E-12
Ru-103	4.24E-13
Ag-110m	4.08E-13
Sb-124	4.70E-13
I-131	5.15E-13
Cs-134	5.05E-13
Cs-136	5.65E-13
Cs-137	5.16E-13
Ba-140	1.78E-12
La-140	8.78E-13
Ce-141	6.89E-13
Ce-144	2.72E-12
Zn-65	7.28E-13
Ba-133	5.42E-13
Sb-125	1.15E-12
Others:	
Gross Alpha	7.00E-15

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DRESDEN NUCLEAR POWER STATION
UNIT 1
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through December 1991

D1 Chimney GASEOUS EFFLUENTS

_____ GROUND LEVEL RELEASES

Docket Number: 50-10

_____ SEMI-ELEVATED RELEASES

XX ELEVATED RELEASES

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	3rd QUARTER	4th QUARTER	3rd QUARTER	4th QUARTER
FISSION GASES					
Xe-138	Ci	*	*		
Xe-135m	Ci	*	*		
Kr-87	Ci	*	*		
Kr-88	Ci	*	*		
Kr-85m	Ci	*	*		
Kr-85	Ci	*	*		
Xe-135	Ci	*	*		
Xe-133	Ci	*	*		
TOTAL	Ci			NONE	NONE
IODINES					
I-131	Ci	*	*		
I-133	Ci	*	*		
I-135	Ci	*	*		
TOTAL	Ci			NONE	NONE
PARTICULATES					
[illegible]r-89	Ci	*	4.64E-06		
[illegible]r-90	Ci	5.43E-08	9.05E-07		
Cr-51	Ci	*	*		
Mn-54	Ci	7.51E-07	*		
Co-58	Ci	*	*		
Fe-59	Ci	*	*		
Co-60	Ci	3.50E-05	2.14E-05		
Zr-95	Ci	*	*		
Nb-95	Ci	*	*		
Mo-99	Ci	*	*		
Ru-103	Ci	2.05E-03	9.39E-04		
Ag-110m	Ci	*	*		
Sb-124	Ci	*	*		
I-131	Ci	*	*		
Cs-134	Ci	*	*		
Cs-136	Ci	*	*		
Cs-137	Ci	2.52E-05	2.96E-06		
Ba-140	Ci	*	*		
La-140	Ci	*	*		
Ce-141	Ci	*	*		
Ce-144	Ci	*	*		
Zn-65	Ci	*	*		
Ba-133	Ci	*	*		
Sb-125	Ci	*	*		
Fe-55	Ci	7.83E-07	1.14E-5		
TOTAL	Ci	2.10E-03	9.80E-04	NONE	NONE

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

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DRESDEN NUCLEAR POWER STATION
UNIT 1
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through September 1991

D1 Chimney GASEOUS EFFLUENTS

_____ GROUND LEVEL RELEASES

Docket Number: 50-10

_____ SEMI-ELEVATED RELEASES

XX ELEVATED RELEASES

CONTINUOUS MODE

NUCLIDES RELEASED	UNIT	JULY	AUGUST	SEPTEMBER	3rd QUARTER TOTAL
FISSION GASES					
Xe-138	Ci	*	*	*	*
Xe-135m	Ci	*	*	*	*
Kr-87	Ci	*	*	*	*
Kr-88	Ci	*	*	*	*
Kr-85m	Ci	*	*	*	*
Kr-85	Ci	*	*	*	*
Xe-135	Ci	*	*	*	*
Xe-133	Ci	*	*	*	*
TOTAL	Ci				
IODINES					
I-131	Ci	*	*	*	*
I-133	Ci	*	*	*	*
I-135	Ci	*	*	*	*
TOTAL	Ci				
ARTICULATES					
r-89	Ci	*	*	*	*
Sr-90	Ci	4.53E-09	4.98E-08	*	5.43E-08
Cr-51	Ci	*	*	*	*
Mn-54	Ci	7.51E-07	*	*	7.51E-07
Co-58	Ci	*	*	*	*
Fe-59	Ci	*	*	*	*
Co-60	Ci	2.51E-05	6.14E-06	3.77E-06	3.50E-05
Zr-95	Ci	*	*	*	*
Nb-95	Ci	*	*	*	*
Mo-99	Ci	*	*	*	*
Ru-103	Ci	6.42E-04	7.03E-04	7.01E-04	2.05E-03
Ag-110m	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	*	*	*	*
Cs-134	Ci	*	*	*	*
Cs-136	Ci	*	*	*	*
Cs-137	Ci	2.52E-05	*	*	2.52E-05
Ba-140	Ci	*	*	*	*
La-140	Ci	*	*	*	*
Ce-141	Ci	*	*	*	*
Ce-144	Ci	*	*	*	*
Zn-65	Ci	*	*	*	*
Ba-133	Ci	*	*	*	*
Sb-125	Ci	*	*	*	*
Fe-55	Ci	*	*	7.83E-07	7.83E-07
TAL	Ci	6.93E-04	7.09E-04	7.05E-04	2.10E-03

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

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DRESDEN NUCLEAR POWER STATION
UNIT 1
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
October Through December 1991

D1 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	Ci	*	*	*	*
Xe-135m	Ci	*	*	*	*
Kr-87	Ci	*	*	*	*
Kr-88	Ci	*	*	*	*
Kr-85m	Ci	*	*	*	*
Kr-85	Ci	*	*	*	*
Xe-135	Ci	*	*	*	*
Xe-133	Ci	*	*	*	*
TOTAL	Ci				
IODINES					
I-131	Ci	*	*	*	*
I-133	Ci	*	*	*	*
I-135	Ci	*	*	*	*
TOTAL	Ci				
PARTICULATES					
[illegible]-89	Ci	*	2.65E-06	1.99E-06	4.64E-06
[illegible]-90	Ci	*	5.12E-07	3.93E-07	9.05E-7
Cr-51	Ci	*	*	*	*
Mn-54	Ci	*	*	*	*
Co-58	Ci	*	*	*	*
Fe-59	Ci	*	*	*	*
Co-60	Ci	1.15E-05	7.57E-06	2.35E-06	2.14E-05
Zr-95	Ci	*	*	*	*
Nb-95	Ci	*	*	*	*
Ru-103	Ci	5.25E-04	4.14E-04	*	9.39E-04
Ag-110m	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	*	*	*	*
Cs-134	Ci	*	*	*	*
Cs-136	Ci	*	*	*	*
Cs-137	Ci	*	1.77E-06	1.19E-06	2.96E-06
Ba-140	Ci	*	*	*	*
La-140	Ci	*	*	*	*
Ce-141	Ci	*	*	*	*
Ce-144	Ci	*	*	*	*
Zn-65	Ci	*	*	*	*
Ba-133	Ci	*	*	*	*
Sb-125	Ci	*	*	*	*
Fe-55	Ci	1.87E-06	5.76E-06	3.74E-06	1.14E-05
TOTAL	Ci	5.38E-04	4.32E-04	9.66E-06	9.80E-04

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

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DRESDEN NUCLEAR POWER STATION
UNITS 2 and 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through December 1991

D2/3 Chimney GASEOUS EFFLUENTS

_____ GROUND LEVEL RELEASES

Docket Numbers: 50-237
50-249

_____ SEMI-ELEVATED RELEASES

XX ELEVATED RELEASES

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	3rd QUARTER	4th QUARTER	3rd QUARTER	4th QUARTER
FISSION GASES					
Xe-138	Ci	*	*		
Xe-135m	Ci	*	*		
Kr-87	Ci	*	*		
Kr-88	Ci	2.13E+00	*		
Kr-85m	Ci	*	*		
Kr-85	Ci	8.82E-04	1.34E-05		
Xe-135	Ci	1.54E-01	*		
Xe-133	Ci	*	*		
TOTAL	Ci	2.29E+00	1.34E-05	None	None
IODINES					
I-131	Ci	2.40E-04	2.08E-05		
I-133	Ci	1.24E-03	6.41E-05		
I-135	Ci	5.30E-03	1.95E-03		
TOTAL	Ci	6.78E-03	2.03E-03	None	None
PARTICULATES					
[illegible]r-89	Ci	1.16E-04	1.82E-05		
[illegible]r-90	Ci	1.59E-06	2.42E-06		
Cr-51	Ci	*	*		
Mn-54	Ci	6.50E-05	7.66E-05		
Co-58	Ci	*	*		
Fe-59	Ci	*	2.92E-05		
Co-60	Ci	3.78E-04	1.99E-04		
Zr-95	Ci	*	*		
Nb-95	Ci	*	*		
Ru-103	Ci	3.13E-03	7.80E-04		
Ag-110m	Ci	*	*		
Sb-124	Ci	*	*		
I-131	Ci	*	*		
Cs-134	Ci	*	*		
Cs-136	Ci	*	*		
Cs-137	Ci	7.12E-05	3.89E-05		
Ba-140	Ci	3.73E-04	*		
La-140	Ci	5.13E-04	*		
Ce-141	Ci	*	*		
Ce-144	Ci	*	*		
Zn-65	Ci	*	*		
Ba-133	Ci	*	*		
Sb-125	Ci	*	*		
Fe-55	Ci	5.74E-04	6.86E-04		
TOTAL	Ci	5.22E-03	1.83E-03	None	None

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

ZCWSLT/92

DRESDEN NUCLEAR POWER STATION
UNITS 2 AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through September 1991

D2/3 Chimney GASEOUS EFFLUENTS

_____ GROUND LEVEL RELEASES

Docket Numbers: 50-237
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_____ SEMI-ELEVATED RELEASES

XX ELEVATED RELEASES

CONTINUOUS MODE

NUCLIDES RELEASED	UNIT	JULY	AUGUST	SEPTEMBER	3rd QUARTER TOTAL
FISSION GASES					
Xe-138	Ci	*	*	*	*
Xe-135m	Ci	*	*	*	*
Kr-87	Ci	*	*	*	*
Kr-88	Ci	6.62E-01	1.47E+00	*	2.13E+00
Kr-85m	Ci	*	*	*	*
Kr-85	Ci	4.32E-04	3.84E-04	6.62E-05	8.82E-04
Xe-135	Ci	1.54E-01	*	*	1.54E-01
Xe-133	Ci	*	*	*	*
TOTAL	Ci	8.16E-01	1.47E+00	6.62E-05	2.29E+00
IODINES					
I-131	Ci	7.71E-05	8.12E-05	8.19E-05	2.40E-04
I-133	Ci	5.73E-04	4.31E-04	2.35E-04	1.24E-03
I-135	Ci	3.11E-04	2.33E-03	2.66E-03	5.30E-03
TOTAL	Ci	9.61E-04	2.84E-03	2.98E-03	6.78E-03
PARTICULATES					
[illegible]-89	Ci	6.16E-05	4.62E-05	7.87E-06	1.16E-04
[illegible]-90	Ci	6.52E-07	5.66E-07	3.72E-07	1.59E-06
Cr-51	Ci	*	*	*	*
Mn-54	Ci	3.20E-05	2.33E-05	9.70E-06	6.50E-05
Co-58	Ci	*	*	*	*
Fe-59	Ci	*	*	*	*
Co-60	Ci	1.71E-04	9.22E-05	1.15E-04	3.78E-04
Zr-95	Ci	*	*	*	*
Nb-95	Ci	*	*	*	*
Ru-103	Ci	6.15E-04	1.13E-03	1.39E-03	3.13E-03
Ag-110m	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	*	*	*	*
Cs-134	Ci	*	*	*	*
Cs-136	Ci	*	*	*	*
Cs-137	Ci	3.21E-05	2.20E-05	1.71E-05	7.12E-05
Ba-140	Ci	1.66E-04	1.54E-04	5.28E-05	3.73E-04
La-140	Ci	2.57E-04	2.05E-04	5.05E-05	5.13E-04
Ce-141	Ci	*	*	*	*
Ce-144	Ci	*	*	*	*
Zn-65	Ci	*	*	*	*
Ba-133	Ci	*	*	*	*
Sb-125	Ci	*	*	*	*
Fe-55	Ci	3.06E-04	7.68E-05	1.91E-04	5.74E-04
TOTAL	Ci	1.64E-03	1.75E-03	1.83E-03	5.22E-03

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

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DRESDEN NUCLEAR POWER STATION
UNITS 2 and 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
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D2/3 Chimney GASEOUS EFFLUENTS

GROUND LEVEL RELEASES

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XX ELEVATED RELEASES

CONTINUOUS MODE

NUCLIDES RELEASED	UNIT	October	November	December	4th QUARTER TL
FISSION GASES					
Xe-138	Ci	*	*	*	*
Xe-135m	Ci	*	*	*	*
Kr-87	Ci	*	*	*	*
Kr-88	Ci	*	*	*	*
Kr-85m	Ci	*	*	*	*
Kr-85	Ci	1.34E-05	*	*	1.34E-05
Xe-135	Ci	*	*	*	*
Xe-133	Ci	*	*	*	*
TOTAL	Ci	1.34E-05	*	*	1.34E-05
IODINES					
I-131	Ci	2.08E-05	*	*	2.08E-05
I-133	Ci	6.41E-05	*	*	6.41E-05
I-135	Ci	4.07E-04	1.54E-03	*	1.95E-03
TOTAL	Ci	4.92E-04	1.54E-03	*	2.03E-03
PARTICULATES					
[illegible]r-89	Ci	1.04E-05	4.54E-06	3.27E-06	1.82E-05
[illegible]r-90	Ci	7.46E-07	9.21E-07	7.49E-07	2.42E-06
Cr-51	Ci	*	*	*	*
Mn-54	Ci	6.66E-05	5.55E-06	4.45E-06	7.66E-05
Co-58	Ci	*	*	*	*
Fe-59	Ci	2.92E-05	*	*	2.92E-05
Co-60	Ci	1.56E-04	2.65E-05	1.62E-05	1.99E-04
Zr-95	Ci	*	*	*	*
Nb-95	Ci	*	*	*	*
Ru-103	Ci	4.98E-04	2.82E-04	*	7.80E-04
Ag-110m	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	*	*	*	*
Cs-134	Ci	*	*	*	*
Cs-136	Ci	*	*	*	*
Cs-137	Ci	6.06E-06	1.03E-05	2.25E-05	3.89E-05
Ba-140	Ci	*	*	*	*
La-140	Ci	*	*	*	*
Ce-141	Ci	*	*	*	*
Ce-144	Ci	*	*	*	*
Zn-65	Ci	*	*	*	*
Ba-133	Ci	*	*	*	*
Sb-125	Ci	*	*	*	*
Fe-55	Ci	3.86E-04	2.62E-04	3.80E-05	6.86E-04
TOTAL	Ci	1.15E-03	5.92E-04	8.52E-05	1.83E-03

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

ZCWSLT/92

DRESDEN NUCLEAR POWER STATION
UNITS 2 AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through December 1991

D2/3 Rx Building Vent GASEOUS EFFLUENTS

_____ GROUND LEVEL RELEASES

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XX SEMI-ELEVATED RELEASES

_____ ELEVATED RELEASES

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	3rd QUARTER	4th QUARTER	3rd QUARTER	4th QUARTER
FISSION GASES					
Xe-138	Ci	*	*		
Xe-135m	Ci	*	*		
Kr-87	Ci	*	*		
Kr-88	Ci	6.65E+00	*		
Kr-85m	Ci	*	*		
Kr-85	Ci	*	*		
Xe-135	Ci	*	*		
Xe-133	Ci	*	*		
TOTAL	Ci	6.65E+00		NONE	NONE
IODINES					
I-131	Ci	5.68E-04	*		
I-133	Ci	3.32E-04	1.09E-05		
I-135	Ci	2.70E-04	*		
TOTAL	Ci	6.59E-04	1.09E-05	NONE	NONE
PARTICULATES					
Sr-89	Ci	3.80E-06	5.19E-06		
[illegible]r-90	Ci	2.26E-07	9.26E-06		
[illegible]r-51	Ci	3.70E-04	5.21E-05		
Mn-54	Ci	4.06E-04	1.23E-04		
Co-58	Ci	1.35E-04	1.27E-05		
Fe-59	Ci	3.93E-05	2.92E-05		
Co-60	Ci	1.54E-03	5.71E-04		
Zr-95	Ci	*	*		
Nb-95	Ci	*	*		
Ru-103	Ci	1.01E-04	7.80E-04		
Ag-110m	Ci	*	*		
Sb-124	Ci	*	*		
I-131	Ci	8.41E-06	*		
Cs-134	Ci	*	*		
Cs-136	Ci	*	*		
Cs-137	Ci	*	7.28E-08		
Ba-140	Ci	*	*		
La-140	Ci	*	*		
Ce-141	Ci	*	*		
Ce-144	Ci	*	*		
Zn-65	Ci	8.47E-06	*		
Ba-133	Ci	*	*		
Mo-99	Ci	1.93E-04	4.27E-05		
Sb-125	Ci	*	*		
Fe-55	Ci	3.44E-03	1.04E-03		
TOTAL	Ci	6.25E-03	2.67E-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
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D2/3 Rx Building Vent GASEOUS EFFLUENTS

GROUND LEVEL RELEASES

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XX SEMI-ELEVATED RELEASES

ELEVATED RELEASES

		CONTINUOUS MODE			BATCH MODE
NUCLIDES RELEASED	UNIT	JULY	AUGUST	SEPTEMBER	3rd QUARTER
FISSION GASES					
Xe-138	Ci	*	*	*	*
Xe-135m	Ci	*	*	*	*
Kr-87	Ci	*	*	*	*
Kr-88	Ci	*	*	6.65E+00	6.65E+00
Kr-85m	Ci	*	*	*	*
Kr-85	Ci	*	*	*	*
Xe-135	Ci	*	*	*	*
Xe-133	Ci	*	*	*	*
TOTAL	Ci			6.65E+00	6.65E+00
IODINES					
I-131	Ci	3.42E-05	2.26E-05	*	5.68E-05
I-133	Ci	2.27E-04	1.05E-04	5.51E-08	3.32E-04
I-135	Ci	2.70E-04	*	*	2.70E-04
TOTAL	Ci	5.31E-04	1.28E-04	5.51E-08	6.59E-04
PARTICULATES					
Sr-89	Ci	1.60E-06	1.46E-06	7.42E-07	3.80E-06
Sr-90	Ci	1.04E-07	4.98E-08	7.25E-08	2.26E-07
Cr-51	Ci	6.40E-05	2.97E-04	9.14E-06	3.70E-04
Mn-54	Ci	1.55E-04	1.54E-04	9.74E-05	4.06E-04
Co-58	Ci	5.30E-05	7.06E-05	1.10E-05	1.35E-04
Fe-59	Ci	4.08E-06	2.84E-05	6.83E-06	3.93E-05
Co-60	Ci	5.28E-04	6.88E-04	3.27E-04	1.54E-03
Zr-95	Ci	*	*	*	*
Nb-95	Ci	*	*	*	*
Ru-103	Ci	9.83E-06	2.12E-05	7.00E-05	1.01E-04
Ag-110m	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	6.22E-06	2.19E-06	*	8.41E-06
Cs-134	Ci	*	*	*	*
Cs-136	Ci	*	*	*	*
Cs-137	Ci	*	*	*	*
Ba-140	Ci	*	*	*	*
La-140	Ci	*	*	*	*
Ce-141	Ci	*	*	*	*
Ce-144	Ci	*	*	*	*
Zn-65	Ci	8.47E-06	*	*	8.47E-06
Ba-133	Ci	*	*	*	*
Mo-99	Ci	7.33E-05	9.51E-05	2.46E-05	1.93E-04
Sb-125	Ci	*	*	*	*
Fe-55	Ci	1.11E-03	1.23E-03	1.10E-03	3.44E-03
TOTAL	Ci	2.01E-03	2.59E-03	1.65E-03	6.25E-03

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

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DRESDEN NUCLEAR POWER STATION
UNITS 2 and 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
October Through December 1991

D 2/3 Rx Building Vent GASEOUS EFFLUENTS

GROUND LEVEL RELEASES

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XX SEMI-ELEVATED RELEASES

ELEVATED RELEASES

CONTINUOUS MODE

NUCLIDES RELEASED	UNIT	OCTOBER	NOVEMBER	DECEMBER	4th QUARTER TOTAL
FISSION GASES					
Xe-138	Ci	*	*	*	*
Xe-135m	Ci	*	*	*	*
Kr-87	Ci	*	*	*	*
Kr-88	Ci	*	*	*	*
Kr-85m	Ci	*	*	*	*
Kr-85	Ci	*	*	*	*
Xe-135	Ci	*	*	*	*
Xe-133	Ci	*	*	*	*
TOTAL	Ci				
IODINES					
I-131	Ci	*	*	*	*
I-133	Ci	1.09E-05	*	*	1.09E-05
I-135	Ci	*	*	*	*
TOTAL	Ci	1.09E-05	*	*	1.09E-05
PARTICULATES					
Sr-89	Ci	*	3.50E-06	1.69E-06	5.19E-06
Sr-90	Ci	*	6.24E-06	3.02E-06	9.26E-06
Cr-51	Ci	5.21E-05	*	*	5.21E-05
Mn-54	Ci	1.07E-04	1.25E-05	3.33E-06	1.23E-04
Co-58	Ci	1.27E-05	*	*	1.27E-05
Fe-59	Ci	1.64E-05	1.28E-05	*	2.92E-05
Co-60	Ci	4.91E-04	6.33E-05	1.69E-05	5.71E-04
Zr-95	Ci	*	*	*	*
Nb-95	Ci	*	*	*	*
Ru-103	Ci	1.90E-04	5.90E-04	*	7.80E-04
Ag-110m	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	*	*	*	*
Cs-134	Ci	*	*	*	*
Cs-136	Ci	*	*	*	*
Cs-137	Ci	*	*	7.28E-08	7.28E-08
Ba-140	Ci	*	*	*	*
La-140	Ci	*	*	*	*
Ce-141	Ci	*	*	*	*
Ce-144	Ci	*	*	*	*
Zn-65	Ci	*	*	*	*
Ba-133	Ci	*	*	*	*
Mo-99	Ci	4.27E-05	*	*	4.27E-05
Sb-125	Ci	*	*	*	*
Fe-55	Ci	6.67E-04	3.31E-04	4.50E-05	1.04E-03
TOTAL	Ci	1.58E-03	1.02E-03	7.00E-05	2.67E-03

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

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DRESDEN NUCLEAR POWER STATION
UNITS 1, 2, and 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through December 1991
LIQUID EFFLUENTS

SUMMATION OF ALL RELEASES

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50-249

	UNITS	3rd QUARTER	4th QUARTER	EST.TOTAL ERROR,%
A. FISSION AND ACTIVATION PRODUCTS				
1. Total Release (not incl. tritium, gases, alpha)	Ci	2.43E-02	1.85E-02	5.58
2. Average Diluted Conc. During Period	uCi/mL	5.85E-10	6.03E-09	
3. Percent of Applicable Limit	%	★	★	
B. TRITIUM				
1. Total Release	Ci	4.13E+00	2.69E+00	7.75
2. Average Diluted Conc. During Period	uCi/mL	9.93E-08	8.76E-07	
3. Percent of Applicable Limit	%	★	★	
C. DISSOLVED AND ENTRAINED GASES				
1. Total Release	Ci	1.71E-04	< LLD	5.58
2. Average Diluted Conc. During Period	uCi/mL	4.11E-12	< LLD	
3. Percent of Applicable Limit	%	★	★	
D. GROSS ALPHA RADIOACTIVITY				
1. Total Release	Ci	< LLD	< LLD	15.1
E. VOLUME OF WASTE RELEASED (prior to dilution)	Liters	7.54E+06	5.15E+06	5.00
F. VOLUME OF DILUTION WATER USED DURING PERIOD	liters	4.16E+10	3.07E+09	5.00

★ 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.

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DRESDEN NUCLEAR POWER STATION
UNITS 1, 2, AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
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TABLE OF LOWER LIMITS OF DETECTABILITY FOR LIQUID EFFLUENTS

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NUCLIDE	LLD (uCi/mL)
Sr-89	3.00E-08
Sr-90	8.00E-09
Mn-54	6.13E-08
Co-58	4.89E-08
Fe-59	9.81E-08
Co-60	1.18E-07
Zn-65	1.18E-07
Sb-124	1.13E-07
I-131	6.75E-08
Cs-134	5.86E-08
Cs-137	5.72E-08
Ba-140	2.27E-07
La-140	5.56E-08
Ce-141	9.67E-08
Xe-133	1.58E-06
Xe-135	5.65E-08
Cr-51	5.06E-07
Fe-55	1.30E-07
Cs-138	2.24E-07
H-3	2.00E-06
Gross Alpha	3.00E-07 *
Zr-95	1.58E-07
Kr-87	1.54E-07
Kr-88	5.48E-07
I-135	1.85E-07
I-132	1.01E-07
Ag-110m	6.60E-08
Ba-133	8.08E-08
Ce-144	4.23E-07
Cs-136	7.05E-08
I-133	5.79E-08
I-134	7.16E-07
Kr-85	1.29E-05
Mo-99	4.03E-07
Nb-95	6.01E-08
Np-239	3.44E-07
Ru-103	5.26E-08
Sb-125	1.65E-07
Xe-131m	2.34E-06
Xe-133m	4.92E-07
Xe-138	3.03E-06

* This value was reported as a MDA by the Off-site vendor for the monthly Unit 2 Service Water grab sample taken on October 22, 1991. All other MDAs for Gross Alpha during this report period for Radwaste, CCSW and Service Water grab samples were less than or equal to 1.40E-08 uCi/mL.

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DRESDEN NUCLEAR POWER STATION
UNITS 1, 2, AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
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Radwaste LIQUID EFFLUENTS Docket Numbers: 50-10
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1. Number of Batch Releases: 136
2. Total Time Period for Batch Releases: 3.83E+04 min
3. Maximum Time Period for a Batch Release: 4.12E+02 min
4. Average Time Period for Batch Releases: 2.82E+02 min
5. Minimum Time Period for a Batch Release: 2.30E+02 min
6. Average Stream Flow During Periods of Release of Effluent into a Flowing Stream: 1.16E+06 L/min

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	3rd QUARTER	4th QUARTER	3rd QUARTER	4th QUARTER
Sr-89	Ci			*	*
Sr-90	Ci			4.22E-05	6.11E-05
Mn-54	Ci			3.73E-03	2.59E-03
Co-58	Ci			3.47E-05	1.20E-05
Fe-59	Ci			1.88E-05	3.36E-05
Co-60	Ci			1.40E-02	8.70E-03
Zn-65	Ci			*	*
Ru-103	Ci			1.74E-04	*
Ag-110m	Ci			2.69E-06	*
Sb-124	Ci			*	*
I-131	Ci			*	*
Cs-134	Ci			*	*
Cs-137	Ci			3.72E-03	5.07E-03
Ba-140	Ci			*	*
La-140	Ci			6.89E-06	*
Ce-141	Ci			*	*
Cs-138	Ci			*	2.77E-05
Fe-55	Ci			1.09E-03	2.06E-03
Zr-95	Ci			*	*
I - 132	Ci			*	*
I - 134	Ci			3.01E-05	*
As-76	Ci			3.56E-05	*
(above) Total For Period	Ci	NONE	NONE	2.29E-02	1.85E-02
Xe-133	Ci			7.71E-05	*
Xe-135	Ci			9.41E-05	*
Kr-88	Ci			*	*

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

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DRESDEN NUCLEAR POWER STATION
UNITS 1, 2, AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through September 1991

Radwaste LIQUID EFFLUENTS Docket Numbers: 50-10
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BATCH MODE

NUCLIDES RELEASED	UNIT	JULY	AUGUST	SEPTEMBER	3rd QUARTER TOTAL
Sr-89	Ci	*	*	*	*
Sr-90	Ci	4.52E-06	4.83E-06	3.28E-05	4.22E-05
Mn-54	Ci	1.15E-03	1.07E-03	1.51E-03	3.73E-03
Co-58	Ci	3.11E-05	*	3.64E-06	3.47E-05
Fe-59	Ci	1.54E-05	3.40E-06	*	1.88E-05
Co-60	Ci	3.89E-03	3.95E-03	6.19E-03	1.40E-02
Zn-65	Ci	*	*	*	*
Ru-103	Ci	*	*	1.74E-04	1.74E-04
Ag-110m	Ci	*	*	2.69E-06	2.69E-06
Sb-124	Ci	*	*	*	*
I-131	Ci	*	*	*	*
Cs-134	Ci	*	*	*	*
Cs-137	Ci	7.71E-04	9.91E-04	1.96E-03	3.72E-03
Ba-140	Ci	*	*	*	*
La-140	Ci	6.89E-06	*	*	6.89E-06
Cs-138	Ci	*	*	*	*
Fe-55	Ci	2.83E-04	1.60E-04	6.44E-04	1.09E-03
I-132	Ci	*	*	*	*
I-134	Ci	*	*	3.01E-05	3.01E-05
[illegible]-76	Ci	3.56E-05	*	*	3.56E-05
(above) Total For Period	Ci	6.19E-03	6.18E-03	1.06E-02	2.29E-02
Xe-133	Ci	7.71E-05	*	*	7.71E-05
Xe-135	Ci	9.41E-05	*	*	9.41E-05

* 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
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Radwaste LIQUID EFFLUENTS Docket Numbers: 50-10
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BATCH MODE

NUCLIDES RELEASED	UNIT	OCTOBER	NOVEMBER †	DECEMBER	4th QUARTER TOTAL
Sr-89	Ci	*	0	*	*
Sr-90	Ci	5.08E-05	0	1.03E-05	6.11E-05
Mn-54	Ci	1.18E-03	0	1.41E-03	2.59E-03
Co-58	Ci	*	0	1.20E-05	1.20E-05
Fe-59	Ci	*	0	3.36E-05	3.36E-05
Co-60	Ci	3.88E-03	0	4.82E-03	8.70E-03
Zn-65	Ci	*	0	*	*
Sb-124	Ci	*	0	*	*
I-131	Ci	*	0	*	*
Cs-134	Ci	*	0	*	*
Cs-137	Ci	3.78E-03	0	1.29E-03	5.07E-03
Ba-140	Ci	*	0	*	*
La-140	Ci	*	0	*	*
Ce-141	Ci	*	0	*	*
Cs-138	Ci	2.77E-05	0	*	2.77E-05
Fe-55	Ci	1.23E-03	0	8.32E-04	2.06E-03
I-132	Ci	*	0	*	*
	Ci				
	Ci				
(above) Total For Period	Ci	1.01E-02	0	8.41E-03	1.85E-02
Xe-133	Ci	*	0	*	*
Xe-135	Ci	*	0	*	*

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

† There were no liquid effluents via this pathway during November 1991.

DRESDEN NUCLEAR POWER STATION
UNITS 2 AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
July Through December 1991

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

1. Number of Batch Releases: 38
2. Total Time Period for Batch Releases: 4.71E+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: 2.82E+06 L/min

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	3rd QUARTER	4th QUARTER	3rd QUARTER	4th QUARTER
Sr-89	Ci			2.23E-07	*
Sr-90	Ci			2.14E-07	3.45E-07
Mn-54	Ci			*	*
Co-58	Ci			*	*
Fe-59	Ci			*	*
Co-60	Ci			1.64E-05	3.97E-06
Zn-65	Ci			*	*
Sb-122	Ci			*	*
Sb-124	Ci			*	*
I-131	Ci			*	*
I-132	Ci			*	*
I-135	Ci			*	*
Cs-134	Ci			9.24E-07	*
Cs-137	Ci			6.30E-06	*
Ba-140	Ci			*	*
La-140	Ci			*	*
Cs-138	Ci			*	*
Fe-55	Ci			*	*
	Ci				
	Ci				
	Ci				
	Ci				
(above) Total For Period	Ci	NONE	NONE	2.41E-05	4.32E-06
Xe-133	Ci			*	*
Xe-135	Ci			*	*

* 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 1991

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

BATCH MODE

NUCLIDES RELEASED	UNIT	JULY	AUGUST	SEPTEMBER	3rd QUARTER TOTAL
Sr-89	Ci	*	2.23E-07	*	2.23E-07
Sr-90	Ci	*	*	2.14E-07	2.14E-07
Mn-54	Ci	*	*	*	*
Co-58	Ci	*	*	*	*
Fe-59	Ci	*	*	*	*
Co-60	Ci	5.17E-06	6.63E-06	4.62E-06	1.64E-05
Zn-65	Ci	*	*	*	*
Sb-122	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	*	*	*	*
I-132	Ci	*	*	*	*
I-135	Ci	*	*	*	*
Cs-134	Ci	9.24E-07	*	*	9.24E-07
Cs-137	Ci	1.99E-06	3.79E-06	5.16E-07	6.30E-06
Ba-140	Ci	*	*	*	*
La-140	Ci	*	*	*	*
Cs-138	Ci	*	*	*	*
Fe-55	Ci	*	*	*	*
	Ci				
	Ci				
	Ci				
	Ci				
(above) Total For Period	Ci	8.08E-06	1.06E-05	5.35E-06	2.41E-05
Xe-133	Ci	*	*	*	*
Xe-135	Ci	*	*	*	*

* 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 1991

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

BATCH MODE

NUCLIDES RELEASED	UNIT	OCTOBER	NOVEMBER	DECEMBER	4th QUARTER TOTAL
Sr-89	Ci	*	*	*	*
Sr-90	Ci	1.07E-07	2.38E-07	*	3.45E-07
Mn-54	Ci	*	*	*	*
Co-58	Ci	*	*	*	*
Fe-59	Ci	*	*	*	*
Co-60	Ci	1.13E-06	1.66E-06	1.18E-06	3.97E-06
Zn-65	Ci	*	*	*	*
Sb-122	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	*	*	*	*
I-132	Ci	*	*	*	*
I-135	Ci	*	*	*	*
Cs-134	Ci	*	*	*	*
Cs-137	Ci	*	*	*	*
Ba-140	Ci	*	*	*	*
La-140	Ci	*	*	*	*
Cs-138	Ci	*	*	*	*
Fe-55	Ci	*	*	*	*
	Ci				
	Ci				
	Ci				
	Ci				
(above) Total For Period	Ci	1.24E-06	1.90E-06	1.18E-06	4.32E-06
Xe-133	Ci	*	*	*	*
Xe-135	Ci	*	*	*	*

* 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 Through December 1991

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

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

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

1. Type of Waste	Unit	6-month period	Est Tot. Error,%
a. Spent resins, filter sludges, evaporator bottoms, etc.	m3	1.10E+02	
	Ci	5.41E+02	12.4
b. Dry compressible waste, contaminated equip., etc.	m^3	1.08E+03	
	Ci	6.46E+00	16.6
c. Irradiated components, control rods, etc.	m^3	0.00E+00	
	Ci	0.00E+00	16.6
d. Other (describe)	m^3	0.00E+00	
	Ci	0.00E+00	

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

		%	Ci
a.	Co-60	62.7	3.39E+02
	Fe-55	21.8	1.18E+02
	Mn-54	7.15	3.87E+01
	Cs-137	7.15	3.87E+01
b.	Co-60	21.2	1.37E+00
	Fe-55	64.4	4.16E+00
	Mn-54	6.15	3.97E-01
	Ni-59	1.32	8.53E-02
	Ni-63	1.02	6.59E-02
	Cs-137	5.14	3.32E-01

3. Solid Waste Disposition

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
26	Motor freight (exclusive use only)	CNSI, Barnwell, SC
10	Motor freight (exclusive use only)	Quadrex, Oak Ridge, TN
4	Motor freight (exclusive use only)	CNSI, Channahon, IL
5	Motor freight (exclusive use only)	Westinghouse DDR, Madison, PA
1	Motor freight (exclusive use only)	US Ecology, Richland, WA

B. IRRADIATED FUEL SHIPMENTS (Disposition)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
None		

ZCWSLT/92

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

July Through December 1991

ABNORMAL RELEASES

A. LIQUID

1. Number of Releases: 1

2. Total Activity Released: 1.41E-03

B. GASEOUS

1. Number of Releases: 2

2. Total Activity Released: 2.87E-05

TOTAL 3

One abnormal release of liquid occurred on September 8, 1991. Approximately 5 gallons of water spilled from a cask onto the ground on site. The cask was not secured to the trailer during transport onsite of a liner half full of uncontaminated resin. The cask fell from the trailer and spilled the contaminated water, but the liner remained intact and did not spill its contents. Corrective actions include requirements to secure a cask and its lid during movements, and to inspect casks for water when a liner is removed. (DVR #12-2/3-91-160)

Mn-54	4.16E-04Ci
Co-60	9.84E-04Ci
Cs-137	4.54E-06Ci
Sb-125	3.22E-06Ci

One abnormal release of airborne effluents occurred on September 13, 1991. The release was through a normal pathway (Unit 2 Reactor Building Vent) but was unmonitored for 30 minutes for particulates and Iodine due to a disconnected valve on the back-up sampler in use. The valve was removed beyond an out-of-service boundary during work on a sample pump. Removal of the closed valve allowed air from the immediate area to be drawn through the operating sample pump rather than from the Reactor Building Vent only. Noble gas monitoring was available and indicated no change in release during this time period. Corrective actions include personnel disciplinary action for the individual involved, an article written for stationwide presentation on Out-of-Service practices, a review of the event in continuous training, and an effort to improve availability of primary sampling system. (DVR #12-2-91-166) Particulates and Iodines were estimated from highest Unit 2 Reactor Building Vent release rates from this year.

Cr-51	5.79E-07Ci	Mo-99	1.21E-07Ci
Mn-54	1.50E-07Ci	I-133	5.51E-08Ci
Co-58	9.16E-08Ci	Fe-55	2.83E-07Ci
Fe-59	7.48E-08Ci	Sr-89	7.30E-10Ci
Co-60	5.79E-07Ci		

ZCWSLT/92

DRESDEN NUCLEAR POWER STATION
UNITS 1, 2 AND 3
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT
July Through December 1991
ABNORMAL RELEASES

A ground level release of airborne effluents was discovered and stopped on November 29, 1991. This release was on the return line to the Unit 2/3 chimney from the Illinois Department of Nuclear Safety chimney sampler. This release was of unknown duration and the effect on the public is insignificant compared to the much higher flow through the chimney. The activity released from January 1, 1991 through November 29, 1991 is listed below.

H-3	1.21E-05Ci
Kr-85	1.88E-08Ci
Kr-88	5.46E-06Ci
Xe-135	9.43E-06Ci
Sr-89	1.26E-09Ci
Sr-90	1.42E-11Ci
Mn-54	7.78E-10Ci
Fe-59	8.55E-11Ci
Co-60	3.21E-09Ci
Ru-103	1.33E-08Ci
Ag-110m	4.63E-11Ci
Cs-137	4.39E-10Ci
Ba-140	3.91E-09Ci
La-140	5.22E-09Ci
Fe-55	8.46E-09Ci

RADIOLOGICAL IMPACT ON MAN

DRESDEN UNIT ONE

1991 ANNUAL REPORT
MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
PERIOD OF RELEASE - 01/01/91 TO 12/31/91 CALCULATED 08/26/92
INFANT 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	4.13E-05	9.75E-05	8.88E-05	4.00E-05	2.67E-04
(MREM)	(SE)	(SE)	(SE)	(SE)	(SE)
	LIVER	LIVER	LIVER	LUNG	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1991

COMPLIANCE STATUS - 10 CFR 50 APP. I
INFANT RECEPTOR

	QTRLY OBJ	% OF APP I. 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	0.00	0.00	0.00	0.00	15.0	0.00
		LIVER	LIVER	LIVER	LUNG		LIVER

RESULTS BASED UPON
ODCM ANNEX
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DRESDEN UNIT ONE

1991 ANNUAL REPORT
MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
PERIOD OF RELEASE - 01/01/91 TO 12/31/91 CALCULATED 08/26/92
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	3.94E-05	2.35E-04	4.30E-04	1.43E-04	8.39E-04
(MREM)	(SE)	(NE)	(NE)	(NE)	(NE)
	LIVER	GI-LLI	GI-LLI	GI-LLI	GI-LLI

THIS IS A REPORT FOR THE CALENDAR YEAR 1991

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	0.00	0.00	0.01	0.00	15.0	0.01
		LIVER	GI-LLI	GI-LLI	GI-LLI		GI-LLI

RESULTS BASED UPON
ODCM ANNEX
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MARCH 1989

DRESDEN UNIT TWO

1991 ANNUAL REPORT
MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
PERIOD OF RELEASE - 01/01/91 TO 12/31/91 CALCULATED 08/26/92
INFANT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	2.95E-06 (NE)	7.78E-07 (NE)	2.81E-03 (NE)	1.79E-12 (NE)	2.81E-03 (NE)
BETA AIR (MRAD)	6.22E-07 (N)	1.64E-07 (N)	2.05E-03 (NNE)	3.22E-11 (N)	2.05E-03 (NNE)
TOT. BODY (MREM)	1.24E-06 (NE)	3.27E-07 (NE)	1.66E-03 (NE)	8.62E-13 (NE)	1.66E-03 (NE)
SKIN (MREM)	2.71E-06 (NE)	7.15E-07 (NE)	3.83E-03 (NNE)	2.33E-11 (N)	3.84E-03 (NNE)
ORGAN (MREM)	1.09E-03 (NNE)	1.88E-03 (NNE)	3.36E-03 (NNE)	5.60E-03 (NNE)	1.19E-02 (NNE)
	LUNG	THYROID	THYROID	LUNG	LUNG

THIS IS A REPORT FOR THE CALENDAR YEAR 1991

COMPLIANCE STATUS - 10 CFR 50 APP. I
INFANT RECEPTOR

	QTRLY OBJ	% OF APP I. 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	0.06	0.00	10.0	0.03
BETA AIR (MRAD)	10.0	0.00	0.00	0.02	0.00	20.0	0.01
TOT. BODY (MREM)	2.5	0.00	0.00	0.07	0.00	5.0	0.03
SKIN (MREM)	7.5	0.00	0.00	0.05	0.00	15.0	0.03
ORGAN (MREM)	7.5	0.01	0.03	0.04	0.07	15.0	0.08
		LUNG	THYROID	THYROID	LUNG		LUNG

RESULTS BASED UPON
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DRESDEN UNIT TWO

1991 ANNUAL REPORT
MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
PERIOD OF RELEASE - 01/01/91 TO 12/31/91 CALCULATED 08/26/92
ADULT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR	2.95E-06	7.78E-07	2.81E-03	1.79E-12	2.81E-03
(MRAD)	(NE)	(NE)	(NE)	(NE)	(NE)
BETA AIR	6.22E-07	1.64E-07	2.05E-03	3.22E-11	2.05E-03
(MRAD)	(N)	(N)	(NNE)	(N)	(NNE)
TOT. BODY	1.24E-06	3.27E-07	1.66E-03	8.62E-13	1.66E-03
(MREM)	(NE)	(NE)	(NE)	(NE)	(NE)
SKIN	2.71E-06	7.15E-07	3.83E-03	2.33E-11	3.84E-03
(MREM)	(NE)	(NE)	(NNE)	(N)	(NNE)
ORGAN	1.10E-03	2.10E-03	4.25E-03	6.51E-03	1.39E-02
(MREM)	(NNE)	(NNE)	(NNE)	(NNE)	(NNE)
	LUNG	GI-LLI	GI-LLI	GI-LLI	GI-LLI

THIS IS A REPORT FOR THE CALENDAR YEAR 1991

COMPLIANCE STATUS - 10 CFR 50 APP. I
ADULT RECEPTOR

	QTRLY OBJ	% OF APP I. 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	0.06	0.00	10.0	0.03
BETA AIR (MRAD)	10.0	0.00	0.00	0.02	0.00	20.0	0.01
TOT. BODY (MREM)	2.5	0.00	0.00	0.07	0.00	5.0	0.03
SKIN (MREM)	7.5	0.00	0.00	0.05	0.00	15.0	0.03
ORGAN (MREM)	7.5	0.01	0.03	0.06	0.09	15.0	0.09
		LUNG	GI-LLI	GI-LLI	GI-LLI		GI-LLI

RESULTS BASED UPON
ODCM ANNEX
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DRESDEN UNIT THREE

1991 ANNUAL REPORT
MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
PERIOD OF RELEASE - 01/01/91 TO 12/31/91 CALCULATED 08/24/92
INFANT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	4.40E-05 (NE)	4.63E-06 (NE)	1.95E-04 (NE)	0.00E+00 ( )	2.44E-04 (NE)
BETA AIR (MRAD)	9.27E-06 (N)	9.77E-07 (N)	6.69E-06 (N)	0.00E+00 ( )	1.69E-05 (N)
TOT. BODY (MREM)	1.85E-05 (NE)	1.94E-06 (NE)	1.17E-04 (NE)	0.00E+00 ( )	1.37E-04 (NE)
SKIN (MREM)	4.04E-05 (NE)	4.25E-06 (NE)	1.56E-04 (NE)	0.00E+00 ( )	2.01E-04 (NE)
ORGAN (MREM)	1.32E-02 (NNE)	1.52E-02 (NNE)	1.27E-02 (NNE)	4.97E-04 (NNE)	4.13E-02 (NNE)
	LUNG	THYROID	THYROID	LUNG	LUNG

THIS IS A REPORT FOR THE CALENDAR YEAR 1991

COMPLIANCE STATUS - 10 CFR 50 APP. I
INFANT RECEPTOR

	QTRLY OBJ	% OF APP I. 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	0.18	0.20	0.17	0.01	15.0	0.28
		LUNG	THYROID	THYROID	LUNG		LUNG

RESULTS BASED UPON
ODCM ANNEX
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MARCH 1989

DRESDEN UNIT THREE

1991 ANNUAL REPORT
MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
PERIOD OF RELEASE - 01/01/91 TO 12/31/91 CALCULATED 08/24/92
ADULT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR	4.40E-05	4.63E-06	1.95E-04	0.00E+00	2.44E-04
(MRAD)	(NE)	(NE)	(NE)	( )	(NE)
BETA AIR	9.27E-06	9.77E-07	6.69E-06	0.00E+00	1.69E-05
(MRAD)	(N)	(N)	(N)	( )	(N)
TOT. BODY	1.85E-05	1.94E-06	1.17E-04	0.00E+00	1.37E-04
(MREM)	(NE)	(NE)	(NE)	( )	(NE)
SKIN	4.04E-05	4.25E-06	1.56E-04	0.00E+00	2.01E-04
(MREM)	(NE)	(NE)	(NE)	( )	(NE)
ORGAN	1.34E-02	1.70E-02	1.48E-02	5.00E-04	4.48E-02
(MREM)	(NNE)	(NNE)	(NNE)	(NNE)	(NNE)
	LUNG	GI-LLI	GI-LLI	LUNG	GI-LLI

THIS IS A REPORT FOR THE CALENDAR YEAR 1991

COMPLIANCE STATUS - 10 CFR 50 APP. I
ADULT RECEPTOR

	QTRLY OBJ	% OF APP I. 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	0.18	0.23	0.20	0.01	15.0	0.30
		LUNG	GI-LLI	GI-LLI	LUNG		GI-LLI

RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT TWO
INFANT RECEPTOR

1991 ANNUAL REPORT
MAXIMUM DOSES (MREM) RESULTING FROM LIQUID EFFLUENTS
PERIOD OF RELEASE - 01/01/91 TO 12/31/91 CALCULATED 08/24/92

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	2.19E-04	9.93E-05	2.36E-05	1.98E-05	3.61E-04
INTERNAL ORGAN	8.01E-04	2.51E-04	4.44E-05	5.13E-05	1.15E-03
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1991
COMPLIANCE STATUS - 10 CFR 50 APP. I

		---------- % OF APP I. ----------					
	QTRLY 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	0.01	0.01	0.00	0.00	3.0	0.01
CRIT. ORGAN(MREM)	5.0	0.02	0.01	0.00	0.00	10.0	0.01
		LIVER	LIVER	LIVER	LIVER		LIVER

RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT TWO
INFANT RECEPTOR

1991 ANNUAL REPORT
PROJECTED DOSE AT NEAREST COMMUNITY WATER SYSTEM *
PERIOD OF RELEASE - 01/01/91 TO 12/31/91 CALCULATED 08/24/92

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	2.19E-04	9.93E-05	2.36E-05	1.98E-05	3.61E-04
INTERNAL ORGAN	8.01E-04	2.51E-04	4.44E-05	5.13E-05	1.15E-03
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1991

COMPLIANCE STATUS - 40 CFR 141

TYPE	ANNUAL LIMIT	% OF LIMIT
TOTAL BODY	4.0 (MREM)	0.009
INTERNAL ORGAN	4.0 (MREM)	0.029
		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
REVISION 0
MARCH 1989

DRESDEN UNIT TWO
ADULT RECEPTOR

1991 ANNUAL REPORT
MAXIMUM DOSES (MREM) RESULTING FROM LIQUID EFFLUENTS
PERIOD OF RELEASE - 01/01/91 TO 12/31/91 CALCULATED 08/24/92

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	1.34E-03	3.68E-04	5.55E-05	7.66E-05	1.84E-03
INTERNAL ORGAN	2.01E-03	5.52E-04	7.99E-05	1.12E-04	2.75E-03
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1991

COMPLIANCE STATUS - 10 CFR 50 APP. I

		% OF APP I.					
	QTRLY 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	0.09	0.02	0.00	0.01	3.0	0.06
CRIT. ORGAN(MREM)	5.0	0.04	0.01	0.00	0.00	10.0	0.03
		LIVER	LIVER	LIVER	LIVER		LIVER

RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT TWO
ADULT RECEPTOR

1991 ANNUAL REPORT
PROJECTED DOSE AT NEAREST COMMUNITY WATER SYSTEM *
PERIOD OF RELEASE - 01/01/91 TO 12/31/91 CALCULATED 08/24/92

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	1.26E-04	4.18E-05	9.86E-06	1.00E-05	1.88E-04
INTERNAL ORGAN	1.90E-04	1.14E-04	1.32E-05	1.09E-05	3.26E-04
	GI-LLI	GI-LLI	GI-LLI	BONE	GI-LLI

THIS IS A REPORT FOR THE CALENDAR YEAR 1991

COMPLIANCE STATUS - 40 CFR 141

TYPE	ANNUAL LIMIT	% OF LIMIT
TOTAL BODY	4.0 (MREM)	0.005
INTERNAL ORGAN	4.0 (MREM)	0.008
		GI-LLI

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RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT THREE
INFANT RECEPTOR

1991 ANNUAL REPORT
MAXIMUM DOSES (MREM) RESULTING FROM LIQUID EFFLUENTS
PERIOD OF RELEASE - 01/01/91 TO 12/31/91 CALCULATED 08/24/92

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	2.19E-04	9.94E-05	3.66E-05	2.68E-05	3.82E-04
INTERNAL ORGAN	8.01E-04	2.51E-04	6.80E-05	6.95E-05	1.19E-03
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1991
COMPLIANCE STATUS - 10 CFR 50 APP. I

		% OF APP I.					
	QTRLY 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	0.01	0.01	0.00	0.00	3.0	0.01
CRIT. ORGAN(MREM)	5.0	0.02	0.01	0.00	0.00	10.0	0.01
		LIVER	LIVER	LIVER	LIVER		LIVER

RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT THREE
INFANT RECEPTOR

1991 ANNUAL REPORT
PROJECTED DOSE AT NEAREST COMMUNITY WATER SYSTEM *
PERIOD OF RELEASE - 01/01/91 TO 12/31/91 CALCULATED 08/24/92

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	2.19E-04	9.94E-05	3.66E-05	2.68E-05	3.82E-04
INTERNAL ORGAN	8.01E-04	2.51E-04	6.80E-05	6.95E-05	1.19E-03
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1991

COMPLIANCE STATUS - 40 CFR 141

TYPE	ANNUAL LIMIT	% OF LIMIT
TOTAL BODY	4.0 (MREM)	0.010
INTERNAL ORGAN	4.0 (MREM)	0.030
		LIVER

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RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT THREE
ADULT RECEPTOR

1991 ANNUAL REPORT
MAXIMUM DOSES (MREM) RESULTING FROM LIQUID EFFLUENTS
PERIOD OF RELEASE - 01/01/91 TO 12/31/91 CALCULATED 08/24/92

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	1.34E-03	3.69E-04	8.54E-05	1.04E-04	1.90E-03
INTERNAL ORGAN	2.01E-03	5.53E-04	1.23E-04	1.52E-04	2.84E-03
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1991

COMPLIANCE STATUS - 10 CFR 50 APP. I

		% OF APP I.					
	QTRLY 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	0.09	0.02	0.01	0.01	3.0	0.06
CRIT. ORGAN(MREM)	5.0	0.04	0.01	0.00	0.00	10.0	0.03
		LIVER	LIVER	LIVER	LIVER		LIVER

RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT THREE
ADULT RECEPTOR

1991 ANNUAL REPORT
PROJECTED DOSE AT NEAREST COMMUNITY WATER SYSTEM *
PERIOD OF RELEASE - 01/01/91 TO 12/31/91 CALCULATED 08/24/92

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	1.26E-04	4.19E-05	1.54E-05	1.37E-05	1.97E-04
INTERNAL ORGAN	1.90E-04	1.14E-04	1.98E-05	1.49E-05	3.35E-04
	GI-LLI	GI-LLI	GI-LLI	BONE	GI-LLI

THIS IS A REPORT FOR THE CALENDAR YEAR 1991

COMPLIANCE STATUS - 40 CFR 141

TYPE	ANNUAL LIMIT	% OF LIMIT
TOTAL BODY	4.0 (MREM)	0.005
INTERNAL ORGAN	4.0 (MREM)	0.008
		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 UPON
ODCM ANNEX
REVISION 0
MARCH 1989

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

METEOROLOGICAL DATA

CECo DRESDEN STATION
35 ft. WIND SPEED and WIND DIRECTION

July-September 1991
150-35 ft. DIFFERENTIAL TEMPERATURE

NUMBER OF OBSERVATIONS = 2207
VALUES ARE PERCENT OCCURRENCE

SPEED	WIND DIRECTION CLASSES																	STABILITY CLASSES							
CLASS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	EU	MU	SU	N	SS	MS	ES	TOTAL
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
C SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
A N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00				
L SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.05					.05			
M MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.05	.00	.00	.00	.09							.09	
																									.14
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
1 SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.05			.05					
- N	.09	.09	.14	.00	.00	.09	.00	.09	.14	.18	.23	.14	.09	.09	.14	.14	1.63				1.63				
3 SS	.54	.41	.63	.50	.63	.14	.45	.27	.14	.23	.14	.05	.32	.09	.59	.18	5.30					5.30			
MS	.45	.50	.59	.59	.41	.41	.32	.45	.63	.82	1.04	.59	.36	.41	1.00	.63	9.20						9.20		
ES	.41	.14	.09	.14	.05	.23	.27	.09	.14	.41	.36	.27	.05	.27	.86	.82	4.58							4.58	
																									20.75
EU	1.22	1.04	.05	.05	.27	.18	.00	.14	.00	.27	.27	.36	.14	.14	.59	1.00	5.71	5.71							
MU	.00	.27	.09	.00	.23	.23	.09	.09	.27	.23	.18	.36	.00	.05	.09	.23	2.40		2.40						
4 SU	.05	.18	.27	.00	.23	.09	.27	.09	.18	.14	.14	.14	.09	.05	.14	.14	2.17			2.17					
- N	.14	.27	1.09	1.22	1.63	.95	.63	.72	.72	.54	.72	.50	.59	.14	.18	.27	10.33				10.33				
7 SS	.68	.91	1.27	2.85	2.67	3.08	1.59	1.04	1.36	1.18	.86	.54	.72	1.54	.63	.72	21.66					21.66			
MS	.14	.05	.09	.00	.14	.91	.50	.50	.72	1.36	1.18	.50	.72	.50	.18	.36	7.84						7.84		
ES	.00	.00	.00	.00	.05	.14	.18	.09	.05	.27	.32	.05	.00	.05	.09	.18	1.45							1.45	
																									51.56
EU	.50	.14	.23	.09	.41	.41	.14	.18	.23	.54	.82	.86	.09	.27	.54	.82	6.25	6.25							
MU	.00	.00	.18	.00	.09	.05	.05	.05	.18	.18	.09	.27	.09	.09	.09	.00	1.40		1.40						
8 SU	.00	.00	.05	.00	.05	.09	.09	.32	.05	.09	.00	.09	.05	.18	.00	.14	1.18			1.18					
- N	.05	.05	.32	.14	.27	.36	.27	1.13	.36	.50	.50	.63	.41	.23	.36	.32	5.89				5.89				
1 SS	.18	.14	.27	.05	.36	.50	.27	.50	.45	.77	.95	.41	.41	.63	.54	.54	6.98					6.98			
2 MS	.00	.00	.00	.00	.00	.05	.00	.09	.05	.36	.05	.05	.05	.00	.00	.00	.68						.68		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.05							.05	
																									22.43
EU	.00	.00	.00	.00	.00	.00	.00	.09	.05	.72	.63	.45	.09	.36	.23	.00	2.63	2.63							
1 MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.05	.05	.00	.09	.05	.00	.32		.32						
3 SU	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.23	.09	.05	.05	.00	.05	.50			.50					
- N	.00	.00	.00	.00	.00	.00	.00	.05	.05	.27	.18	.32	.09	.14	.00	.00	1.09				1.09				
1 SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.14	.00	.00	.00	.05	.27					.27			
MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																									4.80

CECo DRESDEN STATION
35 ft. WIND SPEED and WIND DIRECTION

July-September 1991
150-35 ft. DIFFERENTIAL TEMPERATURE

SPEED / CLASS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	EU	MU	SU	N	SS	MS	ES	TOTAL
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.14	.00	.00	.00	.00	.18	.18							
1 MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.09		.09						
9 SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
- N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.05				.05				
2 SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					.00			
4 MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																									.32
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
G MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
T SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00				
2 SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					.00			
4 MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																									.00
TOT	4.44	4.17	5.35	5.62	7.48	7.88	5.12	6.03	5.80	9.29	9.06	6.98	4.44	5.39	6.34	6.62	100.00	14.77	4.21	3.90	18.99	34.25	17.72	6.16	100.00

Wind Direction by Stability

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-STABILITY CLASSES-
1.72	1.18	.27	.14	.68	.59	.14	.41	.27	1.54	1.77	1.81	.32	.77	1.36	1.81	14.77	Extremely Unstable
.00	.27	.27	.00	.32	.27	.14	.14	.45	.59	.32	.68	.09	.23	.23	.23	4.21	Moderately Unstable
.05	.18	.32	.00	.27	.18	.36	.45	.23	.23	.36	.32	.18	.27	.14	.36	3.90	Slightly Unstable
.27	.41	1.54	1.36	1.90	1.40	.91	1.99	1.27	1.54	1.63	1.59	1.18	.59	.68	.72	18.99	Neutral
1.40	1.45	2.17	3.40	3.67	3.72	2.31	1.81	1.95	2.17	2.04	1.13	1.45	2.27	1.81	1.50	34.25	Slightly Stable
.59	.54	.68	.59	.54	1.36	.82	1.04	1.40	2.54	2.27	1.13	1.13	.91	1.18	1.00	17.72	Moderately Stable
.41	.14	.09	.14	.09	.36	.45	.18	.23	.68	.68	.32	.09	.36	.95	1.00	6.16	Extremely Stable

Wind Direction by Wind Speed

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-WIND SPEED CLASSES-
.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.05	.00	.05	.00	.14	C A L M
1.50	1.13	1.45	1.22	1.09	.86	1.04	.91	1.04	1.63	1.77	1.04	.82	.86	2.58	1.81	20.75	1.0 - 3.5 mph
2.22	2.72	2.85	4.12	5.21	5.57	3.26	2.67	3.31	3.99	3.67	2.45	2.27	2.45	1.90	2.90	51.56	3.6 - 7.5 mph
.72	.32	1.04	.27	1.18	1.45	.82	2.27	1.31	2.45	2.40	2.31	1.09	1.45	1.54	1.81	22.43	7.6 - 12.5 mph
.00	.00	.00	.00	.00	.00	.00	.18	.09	1.09	1.18	1.04	.23	.63	.27	.09	4.80	12.6 - 18.5 mph
.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.05	.14	.00	.00	.00	.00	.32	18.6 - 24.5 mph
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	> 24.5 mph

CECo DRESDEN STATION
300 ft. WIND SPEED and WIND DIRECTION

July-September 1991
300-35 ft. DIFFERENTIAL TEMPERATURE

NUMBER OF OBSERVATIONS = 2207
VALUES ARE PERCENT OCCURRENCE

SPEED	WIND DIRECTION CLASSES																	STABILITY CLASSES							
CLASS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	EU	MU	SU	N	SS	MS	ES	TOTAL
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
C SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
A N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00				
L SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					.00			
M MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																									.00
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
1 SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
- N	.00	.09	.00	.05	.00	.00	.00	.14	.00	.14	.05	.05	.00	.05	.00	.14	.68				.68				
3 SS	.05	.05	.00	.00	.05	.05	.00	.09	.05	.00	.00	.00	.09	.05	.00	.00	.45					.45			
MS	.00	.05	.00	.00	.05	.09	.14	.09	.05	.05	.00	.09	.05	.14	.09	.05	.91						.91		
ES	.00	.00	.05	.00	.00	.00	.00	.05	.05	.00	.05	.05	.05	.05	.00	.00	.32							.32	
																									2.36
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
MU	.05	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.14		.14						
4 SU	.18	.09	.00	.14	.09	.05	.00	.05	.00	.09	.00	.14	.05	.05	.05	.09	1.04			1.04					
- N	.18	.36	.54	.63	.54	.82	.54	.41	.63	.82	.77	.82	.41	.23	.18	.50	8.38				8.38				
7 SS	.14	.14	.23	.45	.27	.41	.27	.18	.32	.32	.18	.14	.27	.14	.23	.27	3.94					3.94			
MS	.05	.00	.00	.32	.32	.18	.14	.27	.23	.27	.23	.23	.23	.14	.09	.05	2.72						2.72		
ES	.09	.09	.14	.14	.09	.00	.00	.00	.09	.00	.05	.09	.09	.00	.09	.05	1.00							1.00	
																									17.22
EU	.27	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.23	.59	.59							
MU	.27	.41	.00	.05	.18	.00	.05	.00	.00	.05	.09	.00	.00	.00	.00	.36	1.45		1.45						
8 SU	.41	.54	.27	.05	.32	.14	.05	.09	.00	.36	.14	.27	.00	.00	.18	.18	2.99			2.99					
- N	.27	.41	.91	1.36	1.54	1.09	1.04	1.09	.86	1.27	.86	.95	.54	.36	.54	.27	13.37				13.37				
1 SS	.32	.68	.68	1.68	1.77	.77	1.36	.91	.63	.77	.72	.77	.86	.45	.54	.09	13.00					13.00			
2 MS	.41	.23	.63	.41	.68	.14	.27	.27	.45	.09	.32	.77	.32	.36	.18	.09	5.62						5.62		
ES	.14	.23	.23	.00	.09	.00	.05	.00	.00	.00	.23	.09	.18	.00	.00	.09	1.31							1.31	
																									38.33
EU	.32	.18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.59	.59							
1 MU	.18	.09	.09	.00	.05	.00	.00	.00	.00	.00	.14	.05	.00	.00	.14	.14	.86		.86						
3 SU	.05	.05	.18	.05	.00	.09	.00	.05	.09	.32	.27	.27	.00	.09	.14	.27	1.90			1.90					
- N	.18	.45	.59	.45	.63	.32	.41	.72	.27	.54	.82	.95	.50	.36	.36	.41	7.97				7.97				
1 SS	.77	.50	.72	.63	1.04	1.27	.77	.86	.91	1.40	1.63	.41	.59	.95	.91	.63	14.00					14.00			
MS	.63	.14	.09	.05	.05	.27	.27	.23	.32	.54	1.13	.23	.36	.41	.32	.14	5.17						5.17		
S	.32	.27	.00	.00	.00	.00	.00	.00	.09	.00	.54	.23	.09	.05	.00	.18	1.77							1.77	
																									32.26

CECo DRESDEN STATION
300 ft. WIND SPEED and WIND DIRECTION

July-September 1991
300-35 ft. DIFFERENTIAL TEMPERATURE

SPD / CLASS	WIND DIRECTION CLASSES: N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	STABILITY CLASSES: EU	MU	SU	N	SS	MS	ES	TOTAL
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.05	.05							
1 MU	.05	.00	.05	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.05	.14	.05	.41		.41						
9 SU	.00	.00	.09	.05	.00	.00	.00	.05	.00	.27	.23	.09	.05	.14	.00	.14	1.09			1.09					
- N	.09	.00	.09	.00	.00	.00	.00	.14	.05	.05	.54	.41	.18	.68	.14	.09	2.45				2.45				
2 SS	.32	.00	.05	.05	.05	.09	.05	.14	.23	.50	.50	.27	.00	.18	.54	.32	3.26					3.26			
4 MS	.00	.00	.00	.00	.00	.00	.05	.05	.09	.50	.59	.14	.00	.18	.00	.00	1.59						1.59		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.05	.05	.05	.00	.05	.00	.00	.00	.18							.18	
																									9.02
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
G MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
T SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.09			.09					
N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.18	.14	.32	.05	.00	.00	.00	.68				.68				
2 SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.05					.05			
4 MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																									.82
TOT	5.71	5.17	5.62	6.52	7.79	5.75	5.44	5.85	5.44	8.56	10.33	7.93	4.98	5.07	4.98	4.85	100.00	1.22	2.85	7.11	33.53	34.71	15.99	4.58	100.00

Wind Direction by Stability

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-STABILITY CLASSES-
.59	.27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.23	1.22	Extremely Unstable
.54	.54	.14	.05	.23	.00	.05	.00	.00	.05	.32	.05	.00	.05	.27	.59	2.85	Moderately Unstable
.63	.68	.54	.27	.41	.27	.05	.23	.09	1.04	.63	.86	.09	.27	.36	.68	7.11	Slightly Unstable
.72	1.31	2.13	2.49	2.72	2.22	1.99	2.49	1.81	2.99	3.17	3.49	1.68	1.68	1.22	1.40	33.53	Neutral
1.59	1.36	1.68	2.81	3.17	2.58	2.45	2.17	2.13	2.99	3.04	1.63	1.81	1.77	2.22	1.31	34.71	Slightly Stable
1.09	.41	.72	.77	1.09	.68	.86	.91	1.13	1.45	2.27	1.45	.95	1.22	.68	.32	15.99	Moderately Stable
.54	.59	.41	.14	.18	.00	.05	.05	.27	.05	.91	.45	.45	.09	.09	.32	4.58	Extremely Stable

Wind Direction by Wind Speed

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-WIND SPEED CLASSES-
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	C A L M
.05	.18	.05	.05	.09	.14	.14	.36	.14	.18	.09	.18	.18	.27	.09	.18	2.36	1.0 - 3.5 mph
.68	.72	.91	1.68	1.31	1.45	.95	.91	1.27	1.50	1.22	1.40	1.04	.54	.63	1.00	17.22	3.6 - 7.5 mph
2.08	2.58	2.72	3.53	4.58	2.13	2.81	2.36	1.95	2.54	2.36	2.85	1.90	1.18	1.45	1.31	38.33	7.6 - 12.5 mph
2.45	1.68	1.68	1.18	1.77	1.95	1.45	1.86	1.68	2.81	4.53	2.13	1.54	1.86	1.95	1.77	32.26	12.6 - 18.5 mph
.45	.00	.27	.09	.05	.09	.09	.36	.41	1.36	1.99	.91	.27	1.22	.86	.59	9.02	18.6 - 24.5 mph
.00	.00	.00	.00	.00	.00	.00	.00	.00	.18	.14	.45	.05	.00	.00	.00	.82	> 24.5 mph

CECo DRESDEN STATION
35 ft. WIND SPEED and WIND DIRECTION

October-December 1991
150-35 ft. DIFFERENTIAL TEMPERATURE

NUMBER OF OBSERVATIONS = 2192
VALUES ARE PERCENT OCCURRENCE

SPEED		WIND DIRECTION CLASSES																STABILITY CLASSES							
CLASS		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	EU	MU	SU	N	SS	MS	ES	TOTAL
	EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
	MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
C	SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
A	N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00				
L	SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					.00			
M	MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00		
	ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																										.00
	EU	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.05	.05							
	MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.05	.05	.09	.23		.23						
1	SU	.00	.00	.00	.00	.05	.00	.00	.00	.00	.05	.05	.09	.00	.00	.05	.05	.32			.32					
-	N	.09	.05	.14	.00	.09	.09	.18	.05	.00	.09	.00	.09	.14	.14	.18	.05	1.37				1.37				
3	SS	.18	.09	.18	.05	.14	.09	.18	.23	.09	.27	.41	.18	.32	.27	.14	.23	3.06					3.06			
	MS	.32	.14	.05	.05	.00	.14	.27	.32	.23	.14	.09	.00	.09	.36	.14	.23	2.55						2.55		
	ES	.09	.05	.00	.00	.00	.00	.05	.05	.05	.00	.09	.05	.05	.05	.00	.14	.64							.64	
																										8.21
	EU	.09	.00	.00	.00	.00	.00	.05	.00	.14	.05	.09	.23	.05	.14	.36	.18	1.37	1.37							
	MU	.00	.09	.05	.00	.00	.00	.32	.00	.05	.00	.00	.00	.00	.09	.14	.05	.78		.78						
4	SU	.00	.05	.09	.00	.05	.09	.18	.05	.05	.00	.00	.05	.14	.23	.09	.09	1.14			1.14					
-	N	.87	1.23	1.60	2.10	.55	.73	.78	.32	.27	.36	.59	.23	1.23	.96	1.00	.82	13.64				13.64				
7	SS	.55	.55	.64	.27	.27	.78	.55	1.41	1.78	1.28	.82	.36	1.28	.87	1.28	.96	13.64					13.64			
	MS	.09	.23	.05	.00	.05	.36	.68	.05	.82	.64	.87	.23	.23	.32	.18	.27	5.06						5.06		
	ES	.00	.00	.00	.00	.00	.05	.05	.00	.00	.00	.00	.00	.05	.05	.09	.23	.50							.50	
																										36.13
	EU	.68	.18	.09	.05	.00	.00	.05	.36	.23	.14	.23	.32	.59	.59	.23	.36	4.11	4.11							
	MU	.05	.00	.09	.09	.00	.09	.14	.05	.14	.18	.05	.14	.18	.14	.05	.00	1.37		1.37						
8	SU	.09	.05	.00	.05	.09	.05	.05	.09	.05	.05	.05	.18	.18	.18	.00	.14	1.28			1.28					
-	N	1.51	.91	.68	.41	.73	.73	.46	.68	1.00	1.05	1.09	.36	1.32	1.87	.91	.82	14.55				14.55				
1	SS	.32	.14	.27	.00	.00	.23	.46	.55	2.05	1.41	.91	.27	.91	.68	.50	.73	9.44					9.44			
2	MS	.00	.00	.00	.00	.00	.00	.09	.00	.23	.09	.00	.00	.00	.00	.00	.00	.41						.41		
	ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																										31.16
	EU	.09	.00	.00	.00	.00	.00	.00	.09	.09	.50	.27	.46	.09	.64	.14	.05	2.42	2.42							
1	MU	.00	.00	.00	.00	.00	.05	.00	.05	.05	.14	.14	.00	.46	.14	.05	.05	1.09		1.09						
3	SU	.00	.00	.00	.00	.00	.05	.00	.09	.09	.23	.05	.14	.18	.09	.05	.05	1.00			1.00					
-	N	.00	.00	.00	.00	.18	.55	.32	.82	1.92	1.05	.41	.27	2.19	1.28	.27	.09	9.35				9.35				
1	SS	.00	.00	.00	.00	.00	.78	.05	.36	1.09	.64	.32	.09	.41	.14	.00	.09	3.97					3.97			
[illegible]	MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.09						.09		
[illegible]	S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																										17.93

CECo DRESDEN STATION
35 ft. WIND SPEED and WIND DIRECTION

October-December 1991
150-35 ft. DIFFERENTIAL TEMPERATURE

SPEED CLASS	WIND DIRECTION CLASSES: N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
EU	.00	.00	.00	.00	.00	.00	.00	.00	.05	.18	.09	.00	.00	.00	.00	.05	.36
1 MU	.00	.00	.00	.00	.00	.00	.00	.00	.14	.05	.23	.00	.05	.00	.00	.00	.46
9 SU	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.09	.18	.05	.05	.00	.00	.41
- N	.00	.00	.00	.00	.00	.00	.00	.18	.68	.91	.00	.55	.82	.23	.05	.00	3.42
2 SS	.00	.00	.00	.00	.00	.14	.05	.05	.41	.09	.09	.00	.05	.05	.00	.00	.91
4 MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

STABILITY CLASSES: EU	MU	SU	N	SS	MS	ES	TOTAL
.36							
	.46						
		.41					
			3.42				
				.91			
					.00		
						.00	
							5.57

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.14
G MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.09
T SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.05
N	.00	.00	.00	.00	.00	.00	.00	.00	.14	.14	.14	.23	.05	.00	.00	.00	.68
2 SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.05
4 MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

EU	.14					
MU		.09				
SU			.05			
N				.68		
SS					.05	
MS						.00
ES						.00
						1.00

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
TOT	5.02	3.74	3.92	3.06	2.19	4.97	4.93	5.89	11.86	9.90	7.44	4.70	11.09	9.58	5.93	5.79	100.00

TOT	8.44	4.01	4.20	43.02	31.07	8.12	1.14	100.00
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Wind Direction by Stability

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-STABILITY CLASSES-
.87	.18	.09	.05	.00	.00	.09	.50	.50	.87	.82	1.00	.73	1.37	.73	.64	8.44	Extremely Unstable
.05	.09	.14	.09	.00	.14	.46	.09	.36	.41	.50	.14	.68	.41	.27	.18	4.01	Moderately Unstable
.09	.09	.09	.05	.18	.18	.23	.23	.23	.32	.27	.64	.55	.55	.18	.32	4.20	Slightly Unstable
2.46	2.19	2.42	2.51	1.55	2.10	1.73	2.05	4.01	3.60	2.24	1.73	5.75	4.47	2.42	1.78	43.02	Neutral
1.05	.78	1.09	.32	.41	2.01	1.28	2.60	5.43	3.74	2.55	.91	2.97	2.01	1.92	2.01	31.07	Slightly Stable
.41	.36	.09	.05	.05	.50	1.05	.36	1.28	.96	.96	.23	.32	.68	.32	.50	8.12	Moderately Stable
.09	.05	.00	.00	.00	.05	.09	.05	.05	.00	.09	.05	.09	.09	.09	.36	1.14	Extremely Stable

Wind Direction by Wind Speed

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-WIND SPEED CLASSES-
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	C A L M
.68	.32	.36	.09	.27	.32	.68	.68	.36	.59	.64	.41	.59	.87	.55	.78	8.21	1.0 - 3.5 mph
1.60	2.14	2.42	2.37	.91	2.01	2.60	1.82	3.10	2.33	2.37	1.09	2.97	2.65	3.15	2.60	36.13	3.6 - 7.5 mph
2.65	1.28	1.14	.59	.82	1.09	1.23	1.73	3.70	2.92	2.33	1.28	3.19	3.47	1.69	2.05	31.16	7.6 - 12.5 mph
.09	.00	.00	.00	.18	1.41	.36	1.41	3.24	2.65	1.19	.96	3.33	2.28	.50	.32	17.93	12.6 - 18.5 mph
.00	.00	.00	.00	.00	.14	.05	.23	1.32	1.23	.50	.73	.96	.32	.05	.05	5.57	18.6 - 24.5 mph
.00	.00	.00	.00	.00	.00	.00	.00	.14	.18	.41	.23	.05	.00	.00	.00	1.00	> 24.5 mph

CECo DRESDEN STATION
300 ft. WIND SPEED and WIND DIRECTION

October-December 1991
300-35 ft. DIFFERENTIAL TEMPERATURE

NUMBER OF OBSERVATIONS = 2202
VALUES ARE PERCENT OCCURRENCE

SPEED CLASS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	EU	MU	SU	N	SS	MS	ES	TOTAL
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
C SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
A N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00				
L SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					.00			
M MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																									.00
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
1 SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
- N	.05	.09	.14	.05	.00	.05	.00	.05	.14	.05	.05	.05	.05	.05	.00	.00	.77				.77				
3 SS	.05	.00	.09	.00	.09	.00	.00	.05	.05	.05	.00	.09	.09	.00	.05	.00	.59					.59			
MS	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.14						.14		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																									1.50
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.05		.05						
4 SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
- N	.14	.14	.18	.09	.09	.32	.82	.18	.27	.27	.27	.36	.23	.64	.54	.32	4.86				4.86				
7 SS	.14	.14	.05	.18	.09	.00	.27	.09	.09	.05	.14	.09	.41	.05	.18	.18	2.13					2.13			
MS	.00	.00	.09	.05	.05	.05	.00	.14	.27	.09	.00	.00	.00	.00	.05	.00	.77						.77		
ES	.09	.00	.00	.05	.05	.00	.05	.05	.00	.00	.05	.00	.09	.05	.00	.09	.54							.54	
																									8.36
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.05	.09	.09							
MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
8 SU	.32	.00	.00	.00	.00	.00	.05	.05	.00	.00	.00	.00	.00	.05	.05	.00	.50			.50					
- N	.54	.82	1.09	1.95	.32	.27	.68	.50	.23	.18	.45	.50	1.14	.95	.73	.82	11.17				11.17				
1 SS	.77	.64	.41	.36	.23	.00	.32	.50	.36	.82	1.09	.68	.77	.54	.54	1.09	9.13					9.13			
2 MS	.09	.18	.14	.00	.05	.14	.14	.27	.27	.32	.18	.14	.05	.09	.14	.05	2.23						2.23		
ES	.05	.05	.05	.00	.00	.00	.00	.00	.00	.09	.05	.00	.00	.00	.00	.05	.32							.32	
																									23.43
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.09	.09							
1 MU	.05	.05	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14		.14						
3 SU	.27	.09	.05	.00	.00	.00	.00	.09	.00	.00	.00	.05	.09	.09	.05	.00	.77			.77					
- N	1.63	1.04	1.32	.86	.59	.45	.09	.64	.68	1.00	1.23	.36	1.32	1.77	.86	.64	14.49				14.49				
1 SS	.45	.54	.64	.41	.23	.05	.45	1.04	1.14	2.95	2.32	.41	.95	1.63	.68	1.18	15.08					15.08			
MS	.14	.05	.14	.00	.00	.05	.14	.23	.32	.86	.50	.23	.18	.23	.23	.14	3.41						3.41		
ES	.05	.05	.00	.00	.00	.00	.00	.00	.09	.05	.05	.00	.00	.00	.00	.05	.32							.32	
																									34.29

CECo DRESDEN STATION
300 ft. WIND SPEED and WIND DIRECTION

October-December 1991
300-35 ft. DIFFERENTIAL TEMPERATURE

SPEED CLASS	WIND DIRECTION CLASSES																STABILITY CLASSES							
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	EU	MU	SU	N	SS	MS	ES	TOTAL
EU	.05	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.14							
1 MU	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.09		.09						
9 SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.05	.14			.14					
N	.41	.09	.05	.05	.27	.54	.09	.36	.54	.86	.64	.45	1.73	2.00	.32	.18	8.58				8.58				
2 SS	.09	.14	.18	.00	.05	.50	.50	.54	1.73	2.63	.95	.32	.77	.73	.50	.23	9.85					9.85			
4 MS	.05	.05	.00	.00	.00	.00	.05	.00	.05	.45	.09	.00	.00	.18	.00	.05	.95						.95		
ES	.05	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.14							.14	
																									19.89
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
G MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
T SU	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.05			.05					
N	.00	.00	.00	.00	.00	.05	.00	.05	.54	.73	.64	.86	1.36	.91	.27	.09	5.50				5.50				
2 SS	.00	.00	.00	.00	.00	.50	.41	.36	2.36	1.41	.73	.18	.68	.23	.00	.05	6.90					6.90			
4 MS	.00	.00	.00	.00	.00	.00	.00	.00	.05	.05	.00	.00	.00	.00	.00	.00	.09						.09		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																									12.53
TOT	5.59	4.22	4.59	4.04	2.09	2.95	4.09	5.18	9.22	12.99	9.40	4.77	9.99	10.26	5.22	5.40	100.00	.32	.27	1.45	45.37	43.69	7.58	1.32	100.00

Wind Direction by Stability

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-STABILITY CLASSES-
.05	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.14	.32	Extremely Unstable
.09	.05	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.05	.00	.05	.27	Moderately Unstable
.59	.09	.05	.00	.00	.00	.05	.14	.05	.00	.00	.05	.18	.14	.09	.05	1.45	Slightly Unstable
2.77	2.18	2.77	3.00	1.27	1.68	1.68	1.77	2.41	3.09	3.27	2.59	5.81	6.31	2.72	2.04	45.37	Neutral
1.50	1.45	1.36	.95	.68	1.04	1.95	2.59	5.72	7.90	5.22	1.77	3.68	3.18	1.95	2.72	43.69	Slightly Stable
.36	.27	.36	.05	.09	.23	.32	.64	.95	1.77	.77	.36	.23	.50	.45	.23	7.58	Moderately Stable
.23	.09	.05	.05	.05	.00	.05	.05	.09	.23	.14	.00	.09	.05	.00	.18	1.32	Extremely Stable

Wind Direction by Wind Speed

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-WIND SPEED CLASSES-
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	C A L M
.18	.09	.23	.05	.09	.05	.00	.09	.18	.09	.05	.14	.14	.05	.09	.00	1.50	1.0 - 3.5 mph
.36	.27	.32	.36	.27	.36	1.14	.45	.64	.41	.45	.45	.73	.77	.77	.59	8.36	3.6 - 7.5 mph
1.77	1.68	1.68	2.32	.59	.41	1.18	1.32	.86	1.41	1.77	1.32	1.95	1.68	1.45	2.04	23.43	7.6 - 12.5 mph
2.59	1.82	2.13	1.27	.82	.54	.73	2.00	2.23	4.86	4.09	1.04	2.54	3.72	1.82	2.09	34.29	12.6 - 18.5 mph
.68	.36	.23	.05	.32	1.04	.64	.91	2.32	4.04	1.68	.77	2.59	2.91	.82	.54	19.89	18.6 - 24.5 mph
.00	.00	.00	.00	.00	.54	.41	.41	3.00	2.18	1.36	1.04	2.04	1.14	.27	.14	12.53	> 24.5 mph

CECo DRESDEN STATION
35 ft. WIND SPEED and WIND DIRECTION

January-December 1991
150-35 ft. DIFFERENTIAL TEMPERATURE

NUMBER OF OBSERVATIONS = 8705
VALUES ARE PERCENT OCCURRENCE

SPEED	WIND DIRECTION CLASSES																	STABILITY CLASSES							
CLASS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	EU	MU	SU	N	SS	MS	ES	TOTAL
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
C SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
A N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00				
L SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01					.01			
M MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.01	.00	.01	.00	.03							.03	
																									.05
EU	.01	.00	.00	.00	.00	.00	.00	.01	.00	.01	.00	.00	.00	.00	.03	.01	.08	.08							
MU	.01	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.01	.02	.02	.08		.08						
1 SU	.00	.00	.00	.00	.01	.00	.00	.00	.00	.01	.02	.02	.00	.01	.02	.03	.14			.14					
- N	.09	.14	.17	.07	.09	.10	.06	.09	.10	.11	.11	.08	.13	.15	.15	.11	1.77				1.77				
3 SS	.30	.24	.37	.26	.38	.15	.32	.32	.23	.23	.23	.17	.31	.15	.20	.20	4.06					4.06			
MS	.29	.23	.22	.29	.23	.23	.25	.29	.29	.32	.46	.23	.18	.25	.33	.26	4.35						4.35		
ES	.16	.10	.02	.05	.05	.09	.08	.05	.06	.14	.16	.10	.02	.10	.29	.29	1.76							1.76	
																									12.23
U	.48	.37	.06	.02	.11	.15	.07	.09	.11	.15	.15	.22	.09	.18	.34	.48	3.09	3.09							
MU	.05	.11	.07	.00	.20	.15	.14	.02	.09	.08	.07	.15	.05	.06	.13	.16	1.52		1.52						
4 SU	.09	.08	.10	.01	.17	.09	.20	.05	.07	.07	.11	.09	.10	.11	.08	.09	1.53			1.53					
- N	.59	.56	1.24	1.44	1.13	.92	.68	.67	.54	.45	.67	.46	.76	.48	.65	.74	11.96				11.96				
7 SS	.57	.93	1.08	1.61	1.69	1.36	.85	1.19	1.41	1.24	.96	.48	1.13	1.02	.69	.84	17.06					17.06			
MS	.06	.11	.08	.00	.13	.61	.46	.23	.67	.77	.79	.33	.30	.24	.14	.17	5.09						5.09		
ES	.00	.00	.00	.00	.01	.10	.06	.02	.01	.08	.11	.03	.02	.02	.06	.14	.68							.68	
																									40.92
EU	.52	.29	.20	.08	.31	.28	.20	.18	.24	.30	.47	.46	.51	.52	.57	.69	5.80	5.80							
MU	.08	.03	.10	.03	.20	.11	.11	.02	.08	.13	.14	.21	.14	.15	.06	.07	1.67		1.67						
8 SU	.14	.09	.01	.03	.07	.08	.13	.10	.05	.15	.11	.16	.13	.17	.06	.13	1.61			1.61					
- N	.75	.43	.77	.70	.90	.72	.41	.85	.75	.94	.85	.56	.96	1.05	.91	.65	12.20				12.20				
1 SS	.22	.25	.43	.21	.43	.57	.41	.64	1.24	1.11	1.10	.25	.53	.60	.36	.44	8.79					8.79			
2 MS	.00	.00	.00	.00	.00	.01	.03	.02	.08	.22	.05	.02	.01	.00	.00	.00	.45						.45		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01	.00	.00	.02							.02	
																									30.53
EU	.16	.05	.02	.00	.00	.08	.22	.16	.15	.52	.38	.30	.15	.61	.44	.13	3.35	3.35							
1 MU	.07	.02	.00	.00	.00	.03	.01	.06	.01	.10	.14	.08	.13	.17	.11	.05	.99		.99						
3 SU	.02	.00	.00	.00	.06	.03	.03	.05	.07	.15	.09	.10	.07	.13	.05	.06	.91			.91					
- N	.00	.02	.01	.00	.28	.30	.14	.41	.87	.74	.48	.37	.98	.60	.16	.10	5.46				5.46				
1 SS	.00	.01	.00	.00	.10	.24	.07	.17	.44	.43	.22	.15	.13	.07	.02	.06	2.10					2.10			
MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.05						.05		
S	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.01							.01	
																									12.87

CECo DRESDEN STATION
35 ft. WIND SPEED and WIND DIRECTION

January-December 1991
150-35 ft. DIFFERENTIAL TEMPERATURE

SPEED / CLASS	WIND DIRECTION CLASSES: N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	STABILITY CLASSES: EU	MU	SU	N	SS	MS	ES	TOTAL
EU	.00	.00	.00	.00	.00	.05	.00	.00	.03	.14	.08	.08	.02	.03	.06	.01	.51	.51							
1 MU	.00	.00	.00	.00	.00	.00	.00	.00	.05	.05	.07	.02	.01	.00	.01	.01	.22		.22						
9 SU	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.02	.07	.07	.01	.00	.00	.20			.20					
- N	.00	.00	.00	.00	.00	.01	.03	.13	.26	.33	.14	.22	.36	.07	.01	.00	1.56				1.56				
2 SS	.00	.00	.00	.00	.00	.03	.01	.01	.16	.07	.05	.00	.07	.01	.00	.00	.41					.41			
4 MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																									2.89
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.03	.00	.00	.00	.00	.07	.07							
G MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.06	.00	.00	.00	.00	.08		.08						
T SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01	.00	.00	.00	.02			.02					
N	.00	.00	.00	.00	.00	.00	.02	.00	.05	.07	.03	.09	.03	.00	.00	.00	.30				.30				
2 SS	.00	.00	.00	.00	.00	.00	.00	.00	.01	.02	.00	.00	.00	.00	.00	.00	.03					.03			
4 MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																									.51
TOT	4.65	4.08	4.95	4.80	6.52	6.51	5.00	5.86	8.16	9.18	8.35	5.63	7.40	7.00	5.97	5.94	100.00	12.90	4.55	4.40	33.25	32.46	9.94	2.50	100.00

Wind Direction by Stability

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-STABILITY CLASSES-
1.17	.70	.28	.10	.43	.55	.48	.45	.54	1.11	1.11	1.09	.77	1.34	1.45	1.32	12.90	Extremely Unstable
.21	.17	.17	.03	.39	.30	.26	.10	.23	.37	.44	.52	.32	.39	.33	.31	4.55	Moderately Unstable
.25	.17	.11	.05	.31	.21	.36	.20	.21	.38	.38	.45	.38	.44	.21	.31	4.40	Slightly Unstable
1.42	1.15	2.19	2.21	2.39	2.06	1.34	2.15	2.57	2.64	2.29	1.78	3.22	2.34	1.88	1.61	33.25	Neutral
1.09	1.44	1.87	2.08	2.60	2.35	1.67	2.34	3.49	3.10	2.56	1.06	2.16	1.85	1.28	1.53	32.46	Slightly Stable
.34	.34	.30	.29	.36	.85	.75	.54	1.03	1.36	1.30	.59	.49	.49	.47	.44	9.94	Moderately Stable
.16	.10	.02	.05	.06	.20	.14	.08	.08	.22	.28	.15	.06	.14	.36	.43	2.50	Extremely Stable

Wind Direction by Wind Speed

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-WIND SPEED CLASSES-
.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.01	.00	.02	.00	.05	C A L M
.86	.71	.78	.67	.76	.57	.71	.76	.68	.84	.99	.61	.64	.68	1.05	.93	12.23	1.0 - 3.5 mph
1.84	2.17	2.63	3.08	3.43	3.38	2.45	2.27	2.91	2.84	2.87	1.77	2.45	2.13	2.09	2.62	40.92	3.6 - 7.5 mph
1.70	1.09	1.50	1.06	1.90	1.78	1.30	1.83	2.44	2.85	2.72	1.68	2.27	2.49	1.95	1.98	30.53	7.6 - 12.5 mph
.25	.10	.03	.00	.44	.69	.47	.86	1.54	1.98	1.31	1.00	1.45	1.57	.78	.39	12.87	12.6 - 18.5 mph
.00	.00	.00	.00	.00	.09	.05	.14	.53	.59	.36	.39	.53	.13	.08	.02	2.89	18.6 - 24.5 mph
.00	.00	.00	.00	.00	.00	.02	.00	.06	.09	.10	.18	.05	.00	.00	.00	.51	› 24.5 mph

CECo DRESDEN STATION
300 ft. WIND SPEED and WIND DIRECTION

January-December 1991
300-35 ft. DIFFERENTIAL TEMPERATURE

NUMBER OF OBSERVATIONS = 8690
VALUES ARE PERCENT OCCURRENCE

SPEED CLASS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	STABILITY CLASSES EU	MU	SU	N	SS	MS	ES	TOTAL
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
C SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
A N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00				
L SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					.00			
M MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																									.00
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
MU	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01		.01						
1 SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
- N	.03	.06	.07	.03	.01	.02	.02	.07	.06	.08	.05	.06	.09	.09	.05	.06	.85				.85				
3 SS	.02	.05	.05	.02	.05	.05	.02	.07	.02	.02	.03	.02	.07	.01	.02	.01	.54					.54			
MS	.03	.01	.01	.00	.01	.03	.03	.03	.02	.02	.01	.02	.02	.03	.05	.01	.37						.37		
ES	.00	.00	.01	.00	.00	.00	.00	.01	.01	.00	.01	.01	.01	.01	.00	.00	.08							.08	
																									1.85
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01	.01							
MU	.03	.01	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.01	.00	.03	.10		.10						
4 SU	.08	.02	.00	.03	.02	.02	.05	.02	.02	.03	.01	.05	.01	.02	.01	.06	.47			.47					
- N	.21	.29	.25	.32	.38	.56	.60	.32	.36	.38	.40	.46	.29	.35	.33	.32	5.82				5.82				
7 SS	.13	.13	.16	.39	.31	.20	.20	.16	.24	.16	.16	.20	.29	.09	.18	.22	3.21					3.21			
MS	.01	.00	.05	.17	.13	.06	.06	.15	.15	.10	.13	.10	.14	.06	.03	.02	1.36						1.36		
ES	.05	.02	.03	.05	.06	.02	.02	.01	.02	.00	.02	.02	.05	.03	.03	.03	.48							.48	
																									11.46
EU	.07	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01	.02	.08	.09	.31	.31							
MU	.07	.10	.00	.01	.05	.00	.05	.00	.00	.01	.03	.00	.02	.05	.02	.09	.51		.51						
8 SU	.20	.16	.08	.02	.10	.03	.03	.06	.00	.10	.06	.09	.05	.03	.07	.12	1.21			1.21					
- N	.66	.45	.91	1.42	.85	.70	.79	.64	.63	.68	.74	.82	.61	.64	.62	.54	11.70				11.70				
1 SS	.49	.49	.49	1.40	.91	.37	.58	.72	.54	.81	.92	.68	.92	.60	.52	.60	11.05					11.05			
2 MS	.14	.12	.28	.37	.28	.09	.20	.31	.29	.24	.29	.33	.23	.16	.12	.06	3.49						3.49		
ES	.06	.07	.08	.00	.05	.00	.01	.00	.00	.03	.10	.05	.09	.02	.01	.03	.61							.61	
																									28.87
EU	.12	.05	.00	.00	.00	.01	.07	.00	.01	.00	.00	.00	.01	.06	.07	.15	.54	.54							
1 MU	.06	.09	.02	.00	.01	.05	.10	.01	.06	.00	.03	.05	.05	.02	.08	.06	.69		.69						
3 SU	.13	.12	.09	.02	.01	.03	.07	.07	.06	.18	.12	.09	.07	.12	.10	.14	1.42			1.42					
- N	1.09	.77	1.00	.92	.86	.45	.33	.59	.46	.90	1.10	.66	1.00	.93	.92	.78	12.77				12.77				
1 SS	.45	.67	.81	.84	.96	.76	.63	.96	1.04	2.09	1.74	.67	.97	1.04	.70	.67	14.97					14.97			
MS	.23	.08	.09	.01	.03	.24	.26	.21	.26	.58	.78	.33	.23	.22	.14	.08	3.79						3.79		
ES	.09	.08	.00	.00	.00	.00	.00	.00	.07	.01	.18	.06	.03	.01	.00	.06	.60							.60	
																									34.78

CECo DRESDEN STATION
300 ft. WIND SPEED and WIND DIRECTION

January-December 1991
300-35 ft. DIFFERENTIAL TEMPERATURE

SPEED / CLASS	WIND DIRECTION CLASSES: N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	STABILITY CLASSES: EU	MU	SU	N	SS	MS	ES	TOTAL
EU	.06	.02	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.01	.00	.06	.05	.21	.21							
1 MU	.02	.00	.03	.00	.00	.00	.00	.00	.00	.02	.07	.00	.00	.02	.06	.03	.26		.26						
9 SU	.03	.03	.06	.01	.00	.01	.02	.01	.01	.12	.10	.02	.03	.12	.03	.05	.67			.67					
- N	.39	.17	.30	.09	.38	.37	.13	.29	.36	.60	.56	.45	.75	1.22	.43	.31	6.79				6.79				
2 SS	.10	.18	.14	.05	.18	.54	.30	.33	.84	1.48	.97	.39	.33	.55	.33	.20	6.93					6.93			
4 MS	.03	.02	.00	.00	.00	.01	.03	.01	.07	.31	.36	.06	.01	.12	.01	.01	1.06						1.06		
ES	.01	.00	.00	.00	.00	.00	.00	.00	.01	.03	.01	.01	.01	.00	.00	.00	.09							.09	
																									16.01
EU	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01							
G MU	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02		.02						
T SU	.00	.00	.00	.00	.00	.01	.00	.00	.01	.00	.02	.03	.00	.02	.01	.00	.12			.12					
N	.01	.05	.00	.00	.08	.08	.08	.16	.32	.47	.30	.61	.66	.53	.31	.06	3.72				3.72				
2 SS	.00	.01	.00	.00	.12	.13	.10	.14	.84	.67	.35	.20	.41	.10	.00	.02	3.08					3.08			
4 MS	.00	.00	.00	.00	.00	.00	.00	.00	.03	.03	.00	.00	.00	.00	.00	.00	.07						.07		
ES	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.01							.01	
																									7.03
TOT	5.11	4.36	5.02	6.19	5.83	4.89	4.81	5.37	6.84	10.18	9.67	6.55	7.48	7.32	5.42	4.96	100.00	1.08	1.60	3.88	41.66	39.78	10.13	1.88	100.00

Wind Direction by Stability

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-STABILITY CLASSES-
.24	.09	.00	.00	.00	.02	.07	.00	.02	.00	.00	.01	.03	.08	.22	.29	1.08	Extremely Unstable
.18	.22	.06	.01	.06	.07	.16	.01	.06	.03	.14	.05	.07	.10	.16	.22	1.60	Moderately Unstable
.44	.33	.23	.09	.14	.12	.17	.16	.10	.44	.31	.29	.16	.31	.23	.36	3.88	Slightly Unstable
2.39	1.78	2.53	2.78	2.57	2.19	1.96	2.07	2.19	3.11	3.15	3.05	3.39	3.76	2.66	2.07	41.66	Neutral
1.20	1.53	1.65	2.70	2.52	2.04	1.83	2.38	3.52	5.24	4.17	2.15	2.99	2.39	1.76	1.71	39.78	Slightly Stable
.45	.23	.43	.55	.45	.44	.59	.71	.83	1.29	1.57	.85	.63	.59	.35	.18	10.13	Moderately Stable
.21	.17	.13	.05	.10	.02	.03	.03	.12	.08	.33	.15	.20	.08	.05	.13	1.88	Extremely Stable

Wind Direction by Wind Speed

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-WIND SPEED CLASSES-
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	C A L M
.09	.13	.14	.06	.07	.10	.08	.18	.12	.13	.10	.12	.20	.15	.12	.08	1.85	1.0 - 3.5 mph
.51	.47	.49	.97	.90	.86	.93	.67	.79	.68	.72	.83	.77	.56	.61	.69	11.46	3.6 - 7.5 mph
1.68	1.42	1.84	3.22	2.23	1.20	1.66	1.74	1.46	1.88	2.14	1.98	1.93	1.53	1.44	1.53	28.87	7.6 - 12.5 mph
2.16	1.85	2.01	1.80	1.88	1.54	1.47	1.83	1.96	3.76	3.96	1.85	2.36	2.39	2.01	1.93	34.78	12.6 - 18.5 mph
.66	.44	.53	.15	.56	.93	.48	.64	1.30	2.57	2.07	.93	1.15	2.03	.92	.64	16.01	18.6 - 24.5 mph
.01	.06	.00	.00	.20	.25	.18	.31	1.21	1.17	.67	.84	1.07	.66	.32	.08	7.03	› 24.5 mph