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Dresden Nuclear Power Station
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Telephone 815/942-2920

February 22, 1991

EDE LTR #: 91-072

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 January through June 1990 for Dresden Nuclear Power Station. The final data for Sr-89, Sr-90, Fe-55, Tritium, and gross alpha have been included in this report. A copy of this report will be furnished to the NRC Resident Inspector.

Sincerely Yours,

J. F. Mowrey for

E. D. Eenigenburg
Station Manager
Dresden Nuclear Power Station

EDE:SK:dll

Enclosure

cc: S. Kovall
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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, 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.

$\bar{E}_G$ = 3.85E-01 MeV/dis

$\bar{E}_B$ = 3.05E-01 MeV/dis

MEASUREMENTS AND APPROXIMATIONS

A. Fission and activation gases: The D-1 chimney, D2/3 chimney and D2/3 Reactor Building Vent are sampled weekly via a grab sample. The samples are analyzed for specific isotopes present in the release using a Hyper-Pure Germanium (HP Ge) Spectrometry System. Tritium is sampled monthly via a grab sample on the D-1 chimney, D2/3 Chimney, and D2/3 Reactor Building vent and analyzed using a Liquid Scintillation Counter. Krypton-85 is estimated in the D2/3 chimney using a recoil or non-recoil calculation using the fission per second plot and the sum of Kr-85m, Kr-87, Kr-88, Xe-133, Xe-135, and Xe 138 activities present in Reactor Off-Gas.

B. Iodine and Particulate: Iodine and particulate samples from the D-1 Chimney, D2/3 Chimney and the D2/3 Reactor Building Vent are collected for a maximum seven day period. These samples are analyzed for specific nuclides present in the release using a HP Ge spectrometry system. When iodine or particulate samples are not used for reporting the release rate due to management decision that the sample may not be representative, an average of the preceding sample and the following sample is used to calculate the release. A monthly composite of the particulate samples is sent to a vendor to be analyzed for Fe-55, Sr-89, Sr-90, and Gross Alpha activity.

C. Liquid Effluents: Analyzed for specific isotopes present in the release using a HP Ge spectrometry system. A composite of all batches for the month is sent to a vendor to be analyzed for Sr-89, Sr-90, Fe-55, H-3, and Gross Alpha activity. A sample of each Containment Cooling Service Water (CCSW) system is analyzed each month for specific isotopes present in the release using a HP Ge spectrometry system. A sample of each CCSW system is sent each month to a vendor to be analyzed for Sr-89, Sr-90, Fe-55, H-3, and Gross Alpha activity.

D. Estimation of Overall Errors: The methods used for estimating overall errors associated with radioactivity measurements vary with discharge path and form of isotopes. Factors that contribute to the error include such items as calibration of counting equipment, counting statistics, sampling error, discharge volume, and flow rate monitors.

E. Estimation of Vendor Analyzed Information: The vendor analyzed data for Sr-89, Sr-90, Fe-55, H-3, and Gross Alpha was projected, where applicable, for the months of May and June using April data for liquid effluents. The vendor analyzed data for gaseous effluents was projected, where applicable, for the months of April, May, and June using March data. The data in this corrected Effluent Report reflects final vendor analyzed information.

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DRESDEN NUCLEAR POWER STATION
UNITS 1,2, AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
January Through June 1990

GASEOUS EFFLUENTS
SUMMATION OF ALL RELEASES

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

TYPE OF RELEASE	UNITS	1st QUARTER	2nd QUARTER	EST. TOTAL ERROR, %
A. FISSION AND ACTIVATION GASES				
1. Total Release	Ci	3.49E+00	9.06E+00	7.31
2. Average Release Rate for Period	uCi/sec	4.49E-01	1.15E+00	
3. Percent of Technical Specification Limit	%	*	*	
B. IODINES				
1. Total Iodine-131	Ci	4.66E-04	1.18E-03	9.51
2. Average Release Rate of I-131 for Period	uCi/sec	5.99E-01	1.50E-04	
3. Percent of Technical Specification Limit	%	*	*	
4. Total Iodine-131, Iodine-133, and Iodine-135	Ci	6.27E-03	2.31E-02	
C. PARTICULATES				
1. Particulates with half-lives > 8 days	Ci	6.57E-02	1.09E-02	8.09
2. Average Release Rate for Period	uCi/sec	8.45E-03	1.39E-03	
3. Percent of Technical Specification Limit	%	*	*	
4. Gross Alpha Radioactivity	Ci	4.86E-06	4.18E-06	
D. TRITIUM				
1. Total Release	Ci	3.19E+00	4.05E+00	7.89
2. Average Release Rate for Period	uCi/sec	4.10E-01	5.15E-01	
3. Percent of Technical Specification Limit	%	*	*	

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

ZEDE91/37

DRESDEN NUCLEAR POWER STATION
UNITS 1,2, AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
January Through June 1990

GASEOUS EFFLUENTS — Docket Numbers: 50-10, 50-237, 50-249

SUMMATION OF ALL RELEASES

		LLD (uCi/cc)
1.	FISSION GASES	
	Xe-138	1.47E-07
	Xe-135m	6.36E-08
	Kr-87	3.62E-08
	Kr-88	5.80E-08
	Kr-85m	1.80E-08
	Kr-85	4.36E-06
	Xe-135	1.63E-08
	Xe-133	4.08E-08
	Ar-41	2.29E-08
2.	IODINES	
	I-131	8.08E-13
	I-133	5.19E-12
	I-135	9.32E-10
3.	PARTICULATES	
	Sr-89	5.00E-15
	Sr-90	1.70E-15
	Cr-51	6.23E-13
	Mn-54	7.77E-14
	Co-58	6.37E-14
	Fe-55	1.10E-13
	Fe-59	1.38E-13
	Co-60	1.94E-13
	Zr-95	1.37E-13
	Nb-95	7.65E-14
	Mo-99	1.02E-12
	Ru-103	7.71E-14
	Ag-110m	7.06E-14
	Sb-124	7.70E-14
	I-131	9.38E-14
	Cs-134	7.21E-14
	Cs-136	7.67E-14
	Cs-137	8.52E-14
	Ba-140	3.11E-13
	La-140	1.17E-13
	Ce-141	1.13E-13
	Ce-144	4.47E-13
	Zn-65	1.13E-13
	Ba-133	9.51E-14
	Sb-125	1.93E-13
	Others:	
	Gross Alpha	3.00E-15

ZEDE91/37

DRESDEN NUCLEAR POWER STATION
UNIT 1
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
January Through June 1990

DI Chimney GASEOUS EFFLUENTS

_____ GROUND LEVEL RELEASES

Docket Number: 50-10

_____ SEMI-ELEVATED RELEASES

XX ELEVATED RELEASES

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	1st QUARTER	2nd QUARTER	1ST QUARTER	2nd 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					
Sr-89	Ci	*	1.34E-05		
Sr-90	Ci	1.58E-07	6.56E-08		
Cr-51	Ci	*	*		
Mn-54	Ci	*	*		
Co-58	Ci	*	*		
Fe-59	Ci	*	*		
Co-60	Ci	9.47E-06	5.38E-06		
Zr-95	Ci	*	*		
Nb-95	Ci	*	*		
Ru-103	Ci	*	*		
Ag-110m	Ci	*	*		
Sb-124	Ci	*	*		
I-131	Ci	*	*		
Cs-134	Ci	*	*		
Cs-136	Ci	*	*		
Cs-137	Ci	8.08E-06	9.91E-06		
Ba-140	Ci	*	*		
Ce-141	Ci	*	*		
Ce-144	Ci	*	*		
Zn-65	Ci	*	*		
Ba-133	Ci	*	*		
Sb-125	Ci	*	*		
Fe-55	Ci	3.29E-07	6.15E-06		
TOTAL	Ci	1.80E-05	3.49E-05	NONE	NONE

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

ZEDE91/37

DRESDEN NUCLEAR POWER STATION
UNIT 1
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
January Through March 1990

01 Chimney GASEOUS EFFLUENTS

_____ GROUND LEVEL RELEASES

Docket Number: 50-10

_____ SEMI-ELEVATED RELEASES

XX ELEVATED RELEASES

CONTINUOUS MODE

NUCLIDES RELEASED	UNIT	JANUARY	FEBRUARY	MARCH	1st 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					
Sr-89	Ci	*	*	*	*
Sr-90	Ci	1.41E-07	*	1.70E-08	1.58E-07
Cr-51	Ci	*	*	*	*
Mn-54	Ci	*	*	*	*
Co-58	Ci	*	*	*	*
Fe-59	Ci	*	*	*	*
Co-60	Ci	6.26E-07	6.04E-06	2.80E-06	9.47E-06
Zr-95	Ci	*	*	*	*
Nb-95	Ci	*	*	*	*
Ru-103	Ci	*	*	*	*
Ag-110m	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	*	*	*	*
Cs-134	Ci	*	*	*	*
Cs-136	Ci	*	*	*	*
Cs-137	Ci	2.87E-06	4.30E-06	9.05E-07	8.08E-06
Ba-140	Ci	*	*	*	*
Ce-141	Ci	*	*	*	*
Ce-144	Ci	*	*	*	*
Zn-65	Ci	*	*	*	*
Ba-133	Ci	*	*	*	*
Sb-125	Ci	*	*	*	*
Fe-55	Ci	*	*	3.29E-07	3.29E-07
TOTAL	Ci	3.64E-06	1.03E-05	4.05E-06	1.80E-05

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

2EDE91/37

DRESDEN NUCLEAR POWER STATION
UNIT 1
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
April Through June 1990

D1 Chimney GASEOUS EFFLUENTS

_____ GROUND LEVEL RELEASES

Docket Number: 50-10

_____ SEMI-ELEVATED RELEASES

XX ELEVATED RELEASES

CONTINUOUS MODE

NUCLIDES RELEASED	UNIT	APRIL	MAY	JUNE	2nd 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					
Sr-89	Ci	*	*	1.34E-05	1.34E-05
Sr-90	Ci	2.21E-08	4.35E-08	*	6.56E-08
Cr-51	Ci	*	*	*	*
Mn-54	Ci	*	*	*	*
Co-58	Ci	*	*	*	*
Fe-59	Ci	*	*	*	*
Co-60	Ci	4.79E-06	8.36E-08	5.04E-07	5.38E-06
Zr-95	Ci	*	*	*	*
Nb-95	Ci	*	*	*	*
Ru-103	Ci	*	*	*	*
Ag-110m	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	*	*	*	*
Cs-134	Ci	*	*	*	*
Cs-136	Ci	*	*	*	*
Cs-137	Ci	2.32E-06	6.92E-06	6.73E-07	9.91E-06
Ba-140	Ci	*	*	*	*
Ce-141	Ci	*	*	*	*
Ce-144	Ci	*	*	*	*
Zn-65	Ci	*	*	*	*
Ba-133	Ci	*	*	*	*
Sb-125	Ci	*	*	*	*
Fe-55	Ci	4.29E-07	9.62E-07	4.76E-06	6.15E-06
TOTAL	Ci	7.56E-06	3.01E-06	1.93E-05	3.49E-05

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

ZEDE91/37

DRESDEN NUCLEAR POWER STATION
UNITS 2 AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
January Through June 1990

D2/3 Chimney GASEOUS EFFLUENTS

_____ GROUND LEVEL RELEASES

_____ SEMI-ELEVATED RELEASES

XX ELEVATED RELEASES

Docket Numbers: 50-237
50-249

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	1st QUARTER	2nd QUARTER	1st QUARTER	2nd QUARTER
FISSION GASES					
Xe-138	Ci	*	*		
Xe-135m	Ci	6.18E-01	*		
Kr-87	Ci	*	*		
Kr-88	Ci	*	8.76E-01		
Kr-85m	Ci	*	*		
Kr-85	Ci	8.22E-03	2.34E-03		
Xe-135	Ci	2.66E+00	8.12E+00		
Xe-133	Ci	*	*		
Ar-41	Ci	*	6.22E-02		
TOTAL	Ci	3.49E+00	9.06E+00	NONE	NONE
IODINES					
I-131	Ci	3.79E-04	1.08E-03		
I-133	Ci	2.20E-03	6.15E-03		
I-135	Ci	2.27E-03	1.32E-02		
TOTAL	Ci	4.85E-03	2.04E-02	NONE	NONE
PARTICULATES					
Sr-89	Ci	1.25E-04	5.92E-05		
Sr-90	Ci	1.97E-06	3.22E-07		
Cr-51	Ci	*	*		
Mn-54	Ci	2.73E-05	8.16E-06		
Co-58	Ci	*	*		
Fe-59	Ci	*	*		
Co-60	Ci	1.83E-04	1.30E-04		
Zr-95	Ci	*	*		
Nb-95	Ci	*	*		
Ru-103	Ci	*	*		
Ag-110m	Ci	*	*		
Sb-124	Ci	*	*		
I-131	Ci	4.23E-05	1.56E-04		
Cs-134	Ci	*	*		
Cs-136	Ci	*	*		
Cs-137	Ci	4.64E-06	8.43E-05		
Ba-140	Ci	2.40E-02	8.57E-04		
La-140	Ci	2.93E-03	1.45E-03		
Ce-141	Ci	*	*		
Zn-65	Ci	*	*		
Ba-133	Ci	*	*		
Sb-125	Ci	*	*		
Fe-55	Ci	3.61E-04	3.74E-04		
TOTAL	Ci	2.77E-02	3.12E-03	NONE	NONE

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

ZEDE91/37

DRESDEN NUCLEAR POWER STATION
UNITS 2 AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
January Through March 1990

D2/3 Chimney GASEOUS EFFLUENTS

_____ GROUND LEVEL RELEASES

Docket Numbers: 50-237
50-249

_____ SEMI-ELEVATED RELEASES

XX ELEVATED RELEASES

CONTINUOUS MODE

NUCLIDES RELEASED	UNIT	JANUARY	FEBRUARY	MARCH	1st QUARTER TOTAL
FISSION GASES					
Xe-138	Ci	*	*	*	*
Xe-135m	Ci	*	*	8.18E-01	8.18E-01
Kr-87	Ci	*	*	*	*
Kr-88	Ci	*	*	*	*
Kr-85m	Ci	*	*	*	*
Kr-85	Ci	1.42E-04	5.79E-04	7.50E-03	8.22E-03
Xe-135	Ci	*	*	2.66E+00	2.66E+00
Xe-133	Ci	*	*	*	*
Ar-41	Ci	*	*	*	*
TOTAL	Ci	1.42E-04	5.79E-04	3.49E+00	3.49E+00
IODINES					
I-131	Ci	4.05E-05	2.54E-05	3.13E-04	3.79E-04
I-133	Ci	2.14E-04	4.14E-04	1.57E-03	2.20E-03
I-135	Ci	*	*	2.27E-03	2.27E-03
TOTAL	Ci	2.55E-04	4.39E-04	4.15E-03	4.85E-03
PARTICULATES					
Sr-89	Ci	1.80E-05	5.52E-05	5.13E-05	1.25E-04
Sr-90	Ci	1.72E-07	1.03E-06	7.65E-07	1.97E-06
Cr-51	Ci	*	*	*	*
Mn-54	Ci	2.31E-05	*	4.16E-06	2.73E-05
Co-58	Ci	*	*	*	*
Fe-59	Ci	*	*	*	*
Co-60	Ci	5.14E-05	5.24E-05	7.94E-05	1.83E-04
Zr-95	Ci	*	*	*	*
Nb-95	Ci	*	*	*	*
Ru-103	Ci	*	*	*	*
Ag-110m	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	2.40E-06	*	3.99E-05	4.23E-05
Cs-134	Ci	*	*	*	*
Cs-136	Ci	*	*	*	*
Cs-137	Ci	4.64E-06	*	*	4.64E-06
Ba-140	Ci	4.73E-05	1.13E-04	2.38E-02	2.40E-02
La-140	Ci	4.73E-05	1.58E-04	2.72E-03	2.93E-03
Ce-141	Ci	*	*	*	*
Zn-65	Ci	*	*	*	*
Ba-133	Ci	*	*	*	*
Sb-125	Ci	*	*	*	*
Fe-55	Ci	1.94E-04	1.02E-04	6.46E-05	3.61E-04
TOTAL	Ci	3.88E-04	4.82E-04	2.68E-02	2.77E-02

* 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

Docket Numbers: 50-237
50-249

_____ SEMI-ELEVATED RELEASES

XX ELEVATED RELEASES

CONTINUOUS MODE

NUCLIDES RELEASED	UNIT	APRIL	MAY	JUNE	2nd QUARTER TOTAL
FISSION GASES					
Xe-138	Ci	*	*	*	*
Xe-135m	Ci	*	*	*	*
Kr-87	Ci	*	*	*	*
Kr-88	Ci	8.76E-01	*	*	8.76E-01
Kr-85m	Ci	*	*	*	*
Kr-85	Ci	6.63E-04	9.11E-04	7.68E-04	2.34E-03
Xe-135	Ci	3.48E+00	1.81E+00	2.83E+00	8.12E+00
Xe-133	Ci	*	*	*	*
Ar-41	Ci	*	6.22E-02	*	6.22E-02
TOTAL	Ci	4.36E+00	1.87E+00	2.83E+00	9.06E+00
IODINES					
I-131	Ci	3.22E-04	4.27E-04	3.34E-04	1.08E-03
I-133	Ci	1.84E-03	2.50E-03	1.81E-03	6.15E-03
I-135	Ci	6.08E-03	4.43E-03	2.69E-03	1.32E-02
TOTAL	Ci	8.24E-03	7.36E-03	4.83E-03	2.04E-02
PARTICULATES					
Sr-89	Ci	1.31E-05	3.22E-05	1.39E-05	5.92E-05
Sr-90	Ci	*	2.69E-07	5.33E-08	3.22E-07
Cr-51	Ci	*	*	*	*
Mn-54	Ci	8.16E-06	*	*	8.16E-06
Co-58	Ci	*	*	*	*
Fe-59	Ci	*	*	*	*
Co-60	Ci	7.99E-05	3.23E-05	1.76E-05	1.30E-04
Zr-95	Ci	*	*	*	*
Nb-95	Ci	*	*	*	*
Ru-103	Ci	*	*	*	*
Ag-110m	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	3.65E-05	8.89E-05	3.05E-05	1.56E-04
Cs-134	Ci	*	*	*	*
Cs-136	Ci	*	*	*	*
Cs-137	Ci	2.78E-05	4.67E-05	9.75E-06	8.43E-05
Ba-140	Ci	2.52E-04	3.38E-04	2.67E-04	8.57E-04
La-140	Ci	4.82E-04	6.17E-04	3.48E-04	1.45E-03
Ce-141	Ci	*	*	*	*
Zn-65	Ci	*	*	*	*
Ba-133	Ci	*	*	*	*
Sb-125	Ci	*	*	*	*
Fe-55	Ci	4.39E-05	2.67E-04	6.34E-05	3.74E-04
TOTAL	Ci	9.43E-04	1.42E-03	7.50E-04	3.12E-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
January Through June 1990

D2/3 Reactor Building Vent GASEOUS EFFLUENTS

_____ GROUND LEVEL RELEASES
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_____ ELEVATED RELEASES

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	1st QUARTER	2nd QUARTER	1st QUARTER	2nd 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	8.66E-05	1.03E-04		
I-133	Ci	8.36E-04	4.43E-04		
I-135	Ci	4.99E-04	2.11E-03		
TOTAL	Ci	1.42E-03	2.66E-03	NONE	NONE
PARTICULATES					
Sr-89	Ci	9.39E-05	6.55E-05		
Sr-90	Ci	1.88E-06	4.49E-07		
Cr-51	Ci	7.32E-03	1.44E-04		
Mn-54	Ci	2.81E-03	7.54E-04		
Co-58	Ci	8.53E-04	1.88E-04		
Fe-59	Ci	1.58E-03	1.66E-04		
Co-60	Ci	6.74E-03	2.08E-03		
Zr-95	Ci	*	*		
Nb-95	Ci	*	*		
Ru-103	Ci	*	*		
Ag-110m	Ci	1.25E-04	*		
Sb-124	Ci	1.40E-04	*		
I-131	Ci	*	1.41E-05		
Cs-134	Ci	*	*		
Cs-136	Ci	*	*		
Cs-137	Ci	*	*		
Ba-140	Ci	4.18E-04	1.51E-05		
La-140	Ci	5.43E-04	1.51E-05		
Ce-141	Ci	*	*		
Zn-65	Ci	2.85E-04	*		
Mo-99	Ci	2.97E-03	8.59E-04		
Sb-125	Ci	*	*		
Fe-55	Ci	1.50E-02	3.49E-03		
TOTAL	Ci	3.89E-02	7.79E-03	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 2 AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
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D2/3 Reactor Building Vent GASEOUS EFFLUENTS

_____ GROUND LEVEL RELEASES
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_____ ELEVATED RELEASES

CONTINUOUS MODE

NUCLIDES RELEASED	UNIT	JANUARY	FEBRUARY	MARCH	1st 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	3.08E-05	4.18E-05	1.40E-05	8.66E-05
I-133	Ci	4.17E-04	3.64E-04	5.52E-05	8.36E-04
I-135	Ci	4.99E-04	*	*	4.99E-04
TOTAL	Ci	9.47E-04	4.06E-04	6.92E-05	1.42E-03
PARTICULATES					
Sr-89	Ci	2.51E-05	3.09E-05	3.79E-05	9.39E-05
Sr-90	Ci	1.49E-06	1.21E-07	2.70E-07	1.88E-06
Cr-51	Ci	3.52E-03	3.75E-03	5.02E-05	7.32E-03
Mn-54	Ci	1.83E-03	7.23E-04	2.58E-04	2.81E-03
Co-58	Ci	4.92E-04	2.78E-04	8.26E-05	8.53E-04
Fe-59	Ci	9.80E-04	5.73E-04	2.54E-05	1.58E-03
Co-60	Ci	3.55E-03	2.37E-03	8.18E-04	6.74E-03
Zr-95	Ci	*	*	*	*
Nb-95	Ci	*	*	*	*
Ru-103	Ci	*	*	*	*
Ag-110m	Ci	6.30E-05	6.23E-05	*	1.25E-04
Sb-124	Ci	1.40E-04	*	*	1.40E-04
I-131	Ci	*	*	*	*
Cs-134	Ci	*	*	*	*
Cs-136	Ci	*	*	*	*
Cs-137	Ci	*	*	*	*
Ba-140	Ci	1.13E-04	3.05E-04	*	4.18E-04
La-140	Ci	1.13E-04	4.30E-04	*	5.43E-04
Ce-141	Ci	*	*	*	*
Zn-65	Ci	1.75E-04	1.10E-04	*	2.85E-04
Mo-99	Ci	6.44E-04	2.11E-03	2.13E-04	2.97E-03
Sb-125	Ci	*	*	*	*
Fe-55	Ci	8.74E-03	5.03E-03	1.24E-03	1.50E-02
TOTAL	Ci	2.04E-02	1.58E-02	2.73E-03	3.89E-02

* 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 Reactor Building Vent GASEOUS EFFLUENTS

_____ GROUND LEVEL RELEASES

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_____ ELEVATED RELEASES

CONTINUOUS MODE

NUCLIDES RELEASED	UNIT	APRIL	MAY	JUNE	2nd 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	2.89E-05	2.40E-05	5.01E-05	1.03E-04
I-133	Ci	8.98E-05	1.05E-04	2.48E-04	4.43E-04
I-135	Ci	*	1.88E-03	2.32E-04	2.11E-03
TOTAL	Ci	1.19E-04	2.01E-03	5.30E-04	2.66E-03
PARTICULATES					
Sr-89	Ci	5.57E-05	2.12E-06	7.70E-06	6.55E-05
Sr-90	Ci	4.49E-07	*	*	4.49E-07
Cr-51	Ci	*	*	1.44E-04	1.44E-04
Mn-54	Ci	2.06E-04	1.51E-04	3.97E-04	7.54E-04
Co-58	Ci	5.55E-05	6.24E-05	6.99E-05	1.88E-04
Fe-59	Ci	2.89E-05	6.00E-10	1.37E-04	1.66E-04
Co-60	Ci	7.58E-04	6.42E-04	6.78E-04	2.08E-03
Zr-95	Ci	*	*	*	*
Nb-95	Ci	*	*	*	*
Ru-103	Ci	*	*	*	*
Ag-110m	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	*	*	1.41E-05	1.41E-05
Cs-134	Ci	*	*	*	*
Cs-136	Ci	*	*	*	*
Cs-137	Ci	*	*	*	*
Ba-140	Ci	1.51E-05	*	*	1.51E-05
La-140	Ci	1.51E-05	*	*	1.51E-05
Ce-141	Ci	*	*	*	*
Zn-65	Ci	*	*	*	*
Mo-99	Ci	2.64E-04	2.73E-04	3.22E-04	8.59E-04
Sb-125	Ci	*	*	*	*
Fe-55	Ci	7.40E-04	5.58E-04	2.19E-03	3.49E-03
TOTAL	Ci	2.14E-03	1.69E-03	3.96E-03	7.79E-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 2
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
January Through June 1990

D2 Isolation Condenser GASEOUS EFFLUENTS

XX GROUND LEVEL RELEASES

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_____ SEMI-ELEVATED RELEASES

_____ ELEVATED RELEASES

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	1st QUARTER	2nd QUARTER	1st QUARTER	2nd 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		NONE
IODINES					
I-131	Ci			*	
I-133	Ci			*	
I-135	Ci			*	
TOTAL	Ci	NONE	NONE		NONE
PARTICULATES					
Sr-89	Ci			*	
Sr-90	Ci			*	
Cr-51	Ci			*	
Mn-54	Ci			*	
Co-58	Ci			*	
Fe-59	Ci			*	
Co-60	Ci			4.99E-05	
Zr-95	Ci			*	
Nb-95	Ci			*	
Ru-103	Ci			*	
Ag-110m	Ci			*	
Sb-124	Ci			*	
I-131	Ci			*	
Cs-134	Ci			*	
Cs-136	Ci			*	
Cs-137	Ci			*	
Ba-140	Ci			*	
La-140	Ci			*	
Ce-141	Ci			*	
Zn-65	Ci			*	
Ba-133	Ci			*	
Sb-125	Ci			*	
Fe-55	Ci			*	
TOTAL	Ci	NONE	NONE	4.99E-05	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 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
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D3 Isolation Condenser GASEOUS EFFLUENTS

XX GROUND LEVEL RELEASES

Docket Number: 50-249

SEMI-ELEVATED RELEASES

ELEVATED RELEASES

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	1st QUARTER	2nd QUARTER	1st QUARTER	2nd 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		NONE
IODINES					
I-131	Ci			*	
I-133	Ci			*	
I-135	Ci			*	
TOTAL	Ci	NONE	NONE		NONE
PARTICULATES					
Sr-89	Ci			*	
Sr-90	Ci			*	
Cr-51	Ci			*	
Mn-54	Ci			1.48E-05	
Co-58	Ci			*	
Fe-59	Ci			*	
Co-60	Ci			4.35E-05	
Zr-95	Ci			*	
Nb-95	Ci			*	
Ru-103	Ci			*	
Ag-110m	Ci			*	
Sb-124	Ci			*	
I-131	Ci			*	
Cs-134	Ci			*	
Cs-136	Ci			*	
Cs-137	Ci			*	
Ba-140	Ci			*	
La-140	Ci			*	
Ce-141	Ci			*	
Zn-65	Ci			*	
Na-24	Ci			2.71E-06	
Sb-125	Ci			*	
Fe-55	Ci			1.32E-04	
TOTAL	Ci	NONE	NONE	1.93E-04	NONE

* 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
January Through June 1990
LIQUID EFFLUENTS

SUMMATION OF ALL RELEASES

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50-249

	UNIT	1st QUARTER	2nd QUARTER	EST.TOTAL ERROR,%
A. FISSION AND ACTIVATION PRODUCTS				
1. Total Release (not incl. tritium, gases, alpha)	Ci	9.75E-02	1.31E-01	5.58
2. Average Diluted Conc. During Period	uCi/mL	1.53E-08	9.56E-09	
3. Percent of Applicable Limit	%	*	*	
B. TRITIUM				
1. Total Release	Ci	4.89E+00	3.87E+00	7.75
2. Average Diluted Conc. During Period	uCi/mL	7.69E-07	2.82E-07	
3. Percent of Applicable Limit	%	*	*	
C. DISSOLVED AND ENTRAINED GASES				
1. Total Release	Ci	0.00E+00	0.00E+00	5.58
2. Average Diluted Conc. During Period	uCi/mL	0.00E+00	0.00E+00	
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	9.04E+06	7.11E+06	5.00
F. VOLUME OF DILUTION WATER USED DURING PERIOD	liters	6.36E+09	1.37E+10	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
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TABLE OF LOWER LIMITS OF DETECTABILITY FOR LIQUID EFFLUENTS

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	LLD (uCi/mL)
Sr-89	2.00E-08
Sr-90	4.00E-09
Mn-54	5.82E-08
Co-58	4.73E-08
Fe-59	8.07E-08
Co-60	1.49E-07
Zn-65	1.40E-07
Sb-122	7.35E-08
Sb-124	1.09E-07
I-131	5.57E-08
Cs-134	6.74E-08
Cs-137	6.90E-08
Ba-140	2.35E-07
La-140	5.66E-08
Ce-141	1.00E-07
Xe-133	1.59E-06
Xe-135	6.01E-08
Cr-51	4.92E-07
Fe-55	3.00E-07
Cs-138	2.28E-07
H-3	7.00E-07
Gross Alpha	1.01E-08

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

January Through June 1990

Radwaste LIQUID EFFLUENTS Docket Numbers: 50-10
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50-249

1. Number of Batch Releases: 1.98E+02
2. Total Time Period for Batch Releases: 5.45E+04 min
3. Maximum Time Period for a Batch Release: 4.77E+02 min
4. Average Time Period for Batch Releases: 2.75E+02 min
5. Minimum Time Period for a Batch Release: 1.00E+00 min
6. Average Stream Flow During Periods of Release of Effluent into a Flowing Stream: 3.68E+05 L/min

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	1st QUARTER	2nd QUARTER	1st QUARTER	2nd QUARTER
Sr-89	Ci			*	*
Sr-90	Ci			2.31E-04	1.54E-04
Ar-41	Ci			*	*
Mn-54	Ci			1.26E-02	4.25E-03
Co-58	Ci			1.20E-04	*
Fe-59	Ci			9.85E-04	1.20E-04
Co-60	Ci			4.69E-02	1.31E-02
Zn-65	Ci			*	*
Sb-122	Ci			*	*
Sb-124	Ci			4.80E-06	*
I-131	Ci			*	*
I-133	Ci			*	*
I-135	Ci			*	*
Cs-134	Ci			8.05E-05	9.45E-04
Cs-137	Ci			2.58E-02	1.10E-01
Ba-140	Ci			*	*
La-140	Ci			*	*
Ce-141	Ci			*	*
Cu-64	Ci			*	*
Rb-88	Ci			*	*
Cs-138	Ci			*	*
Fe-55	Ci			1.07E-02	2.44E-03
Zr-95	Ci			*	5.62E-06
	Ci				
	Ci				
	Ci				
(above) Total For Period	Ci	NONE	NONE	9.74E-02	1.31E-01
Xe-133	Ci			*	*
Xe-135	Ci			*	*

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

ZEDE91/37

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

January Through March 1990

Radwaste LIQUID EFFLUENTS Docket Numbers: 50-10
50-237
50-249

BATCH MODE

NUCLIDES RELEASED	UNIT	JANUARY	FEBRUARY	MARCH	1st QUARTER TOTAL
Sr-89	Ci	*	*	*	*
Sr-90	Ci	1.56E-04	5.47E-05	1.98E-05	2.31E-04
Ar-41	Ci	*	*	*	*
Mn-54	Ci	7.58E-03	3.11E-03	1.89E-03	1.26E-02
Co-58	Ci	8.54E-05	3.48E-05	*	1.20E-04
Fe-59	Ci	3.83E-04	5.02E-04	1.00E-04	9.85E-04
Co-60	Ci	3.22E-02	7.97E-03	6.72E-03	4.69E-02
Zn-65	Ci	*	*	*	*
Sb-122	Ci	*	*	*	*
Sb-124	Ci	*	4.80E-06	*	4.80E-06
I-131	Ci	*	*	*	*
I-133	Ci	*	*	*	*
I-135	Ci	*	*	*	*
Cs-134	Ci	3.24E-05	4.81E-05	*	8.05E-05
Cs-137	Ci	1.64E-02	7.55E-03	1.83E-03	2.58E-02
Ba-140	Ci	*	*	*	*
La-140	Ci	*	*	*	*
Ce-141	Ci	*	*	*	*
Cu-64	Ci	*	*	*	*
Rb-88	Ci	*	*	*	*
Cs-138	Ci	*	*	*	*
Fe-55	Ci	8.25E-03	1.38E-03	1.11E-03	1.07E-02
	Ci				
	Ci				
	Ci				
	Ci				
(above) Total For Period	Ci	6.51E-02	2.07E-02	1.17E-02	9.74E-02
Xe-133	Ci	*	*	*	*
Xe-135	Ci	*	*	*	*

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

ZEDE91/37

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

April Through June 1990

Radwaste LIQUID EFFLUENTS Docket Numbers: 50-10
50-237
50-249

BATCH MODE

NUCLIDES RELEASED	UNIT	APRIL	MAY	JUNE	2nd QUARTER TOTAL
Sr-89	Ci	*	*	*	*
Sr-90	Ci	5.44E-05	5.48E-05	4.44E-05	1.54E-04
Ar-41	Ci	*	*	*	*
Mn-54	Ci	1.30E-03	2.22E-03	7.27E-04	4.25E-03
Co-58	Ci	*	*	*	*
Fe-59	Ci	7.36E-05	3.73E-05	8.70E-06	1.20E-04
Co-60	Ci	4.02E-03	6.02E-03	3.09E-03	1.31E-02
Zn-65	Ci	*	*	*	*
Sb-122	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	*	*	*	*
I-133	Ci	*	*	*	*
I-135	Ci	*	*	*	*
Cs-134	Ci	1.19E-04	5.53E-04	2.73E-04	9.45E-04
Cs-137	Ci	1.82E-02	5.93E-02	3.24E-02	1.10E-01
Ba-140	Ci	*	*	*	*
La-140	Ci	*	*	*	*
Ce-141	Ci	*	*	*	*
Cu-64	Ci	*	*	*	*
Rb-88	Ci	*	*	*	*
Cs-138	Ci	*	*	*	*
Fe-55	Ci	1.11E-03	8.93E-04	4.37E-04	2.44E-03
Zr-95	Ci	*	5.62E-06	*	5.62E-06
	Ci				
	Ci				
	Ci				
(above) Total For Period	Ci	2.49E-02	6.91E-02	3.70E-02	1.31E-01
Xe-133	Ci	*	*	*	*
Xe-135	Ci	*	*	*	*

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

ZEDE91/37

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

January Through June 1990

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

1. Number of Batch Releases: 6.00E+01
2. Total Time Period for Batch Releases: 7.44E+01 min
3. Maximum Time Period for a Batch Release: 1.24E+00 min
4. Average Time Period for Batch Releases: 1.24E+00 min
5. Minimum Time Period for a Batch Release: 1.24E+00 min
6. Average Stream Flow During Periods of Release of Effluent into a Flowing Stream: 3.68E+05 L/min

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	1st QUARTER	2nd QUARTER	1st QUARTER	2nd QUARTER
Sr-89	Ci			*	*
Sr-90	Ci			*	*
Ar-41	Ci			*	*
Mn-54	Ci			1.21E-05	2.24E-06
Co-58	Ci			*	*
Fe-59	Ci			*	*
Co-60	Ci			4.11E-05	2.68E-05
Zn-65	Ci			*	*
Sb-122	Ci			*	*
Sb-124	Ci			*	*
I-131	Ci			*	*
I-133	Ci			*	*
I-135	Ci			*	*
Cs-134	Ci			3.21E-06	4.00E-06
Cs-137	Ci			4.68E-06	1.91E-05
Ba-140	Ci			*	*
La-140	Ci			*	*
Ce-141	Ci			*	*
Cu-64	Ci			*	*
Rb-88	Ci			*	*
Cs-138	Ci			*	*
Fe-55	Ci			6.79E-05	1.09E-06
	Ci				
	Ci				
	Ci				
	Ci				
(above) Total For Period	Ci	NONE	NONE	1.29E-04	5.32E-05
Xe-133	Ci			*	*
Xe-135	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 2 AND 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

January Through March 1990

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

BATCH MODE

NUCLIDES RELEASED	UNIT	JANUARY	FEBRUARY	MARCH	1st QUARTER TOTAL
Sr-89	Ci	*	*	*	*
Sr-90	Ci	*	*	*	*
Ar-41	Ci	*	*	*	*
Mn-54	Ci	8.23E-06	3.89E-06	*	1.21E-05
Co-58	Ci	*	*	*	*
Fe-59	Ci	*	*	*	*
Co-60	Ci	1.73E-05	2.09E-05	2.95E-06	4.11E-05
Zn-65	Ci	*	*	*	*
Sb-122	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	*	*	*	*
I-133	Ci	*	*	*	*
I-135	Ci	*	*	*	*
Cs-134	Ci	*	2.79E-06	4.24E-07	3.21E-06
Cs-137	Ci	1.90E-06	*	2.78E-06	4.68E-06
Ba-140	Ci	*	*	*	*
La-140	Ci	*	*	*	*
Ce-141	Ci	*	*	*	*
Cu-64	Ci	*	*	*	*
Rb-88	Ci	*	*	*	*
Cs-138	Ci	*	*	*	*
Fe-55	Ci	3.32E-06	6.54E-06	5.80E-05	6.79E-05
	Ci				
	Ci				
	Ci				
	Ci				
(above) Total For Period	Ci	3.08E-05	3.41E-05	6.42E-05	1.29E-04
Xe-133	Ci	*	*	*	*
Xe-135	Ci	*	*	*	*

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

ZEDE91/37

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

April Through June 1990

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

		BATCH MODE			
NUCLIDES RELEASED	UNIT	APRIL	MAY	JUNE	2nd QUARTER TOTAL
Sr-89	Ci	*	*	*	*
Sr-90	Ci	*	*	*	*
Ar-41	Ci	*	*	*	*
Mn-54	Ci	*	7.91E-07	1.45E-06	2.24E-06
Co-58	Ci	*	*	*	*
Fe-59	Ci	*	*	*	*
Co-60	Ci	2.25E-06	4.09E-06	2.02E-05	2.68E-05
Zn-65	Ci	*	*	*	*
Sb-122	Ci	*	*	*	*
Sb-124	Ci	*	*	*	*
I-131	Ci	*	*	*	*
I-133	Ci	*	*	*	*
I-135	Ci	*	*	*	*
Cs-134	Ci	1.97E-07	1.30E-06	2.50E-06	4.00E-06
Cs-137	Ci	1.39E-06	3.52E-06	1.42E-05	1.91E-05
Ba-140	Ci	*	*	*	*
La-140	Ci	*	*	*	*
Ce-141	Ci	*	*	*	*
Cu-64	Ci	*	*	*	*
Rb-88	Ci	*	*	*	*
Cs-138	Ci	*	*	*	*
Fe-55	Ci	*	1.09E-06	*	1.09E-06
	Ci				
	Ci				
	Ci				
	Ci				
(above) Total For Period	Ci	3.84E-06	1.08E-05	3.84E-05	5.32E-05
Xe-133	Ci	*	*	*	*
Xe-135	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

January Through June 1990

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	1.35E+02	
	Ci	2.31E+02	12.4
b. Dry compressible waste, contaminated equip., etc.	m^3	1.02E+03	
	Ci	2.51E+01	16.6
c. Irradiated components, control rods, etc.	m^3	0	
	Ci	0	16.6
d. Other (describe)	m^3	0	
	Ci	0	

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

		%	Ci
a.	Co-60	45.1	1.04E+02
	Fe-55	18.0	4.16E+01
	Mn-54	16.5	3.81E+01
	Cs-137	11.3	2.61E+01
	Ni-63	5.41	1.25E+01
	Co-58	2.17	5.01E+00
	Other	1.52	3.51E+00
b.	Co-60	25.4	6.38E+00
	Fe-55	62.0	1.56E+01
	Mn-54	6.59	1.65E+00
	Cs-137	4.65	1.17E+00
	Other	1.36	3.41E-01
c.	Co-60	0	0.00E+00
	Fe-55	0	0.00E+00
	Mn-54	0	0.00E+00
	Cs-137	0	0.00E+00
	Other	0	0.00E+00

3. Solid Waste Disposition

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
49	Motor freight (exclusive use only)	Barnwell, SC
9	Motor freight (exclusive use only)	SEG, Oak Ridge, TN
6	Motor freight (exclusive use only)	CNSI, Channahon, IL
3	Motor freight (exclusive use only)	Westinghouse DDR, Madison, PA
1	Motor freight (exclusive use only)	Quadrex, Oak Ridge, TN

B. IRRADIATED FUEL SHIPMENTS (Disposition)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
None		

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

January Through June 1990

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

ABNORMAL RELEASES

A. LIQUID

1. Number of Releases: 0

2. Total Activity Released: 0

B. GASEOUS

1. Number of Releases: 3

One on 5 January 90, LER 90-001-050237 (Unit 2)
One on 16 January 90, LER 90-002-050237 (Unit 2)
One on 10 March 90, LER 90-005-050249 (Unit 3)

Use of the Isolation Condenser to cool the reactor subsequent to a reactor scram resulted in a release of steam in all three events. The steam contained trace amounts of radioactivity from previous uses of contaminated demineralized water as makeup water. In all of the above cases, clean demineralized water was used as makeup water.

2. Total Activity Released:

Nuclide	Activity (Ci)
Mn-54	1.48E-05
Fe-55	1.32E-04
Co-60	9.34E-05
Na-24	2.71E-06
Total	2.43E-04

ZEDE91/37

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

RADIOLOGICAL IMPACT ON MAN

DRESDEN UNIT ONE

1990 ANNUAL REPORT
MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 02/26/91
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	2.21E-05	1.73E-05	1.90E-05	3.00E-05	8.84E-05
(MREM)	(SE)	(SE)	(SE)	(SE)	(SE)
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

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	LIVER		LIVER

RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT ONE

1990 ANNUAL REPORT
MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 02/26/91
ADULT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	0.00E+00 ( )	0.00E+00 ( )	0.00E+00 ( )	0.00E+00 ( )	0.00E+00 ( )
BETA AIR (MRAD)	0.00E+00 ( )	0.00E+00 ( )	0.00E+00 ( )	0.00E+00 ( )	0.00E+00 ( )
TOT. BODY (MREM)	0.00E+00 ( )	0.00E+00 ( )	0.00E+00 ( )	0.00E+00 ( )	0.00E+00 ( )
SKIN (MREM)	0.00E+00 ( )	0.00E+00 ( )	0.00E+00 ( )	0.00E+00 ( )	0.00E+00 ( )
ORGAN (MREM)	2.00E-05 (SE)	2.66E-05 (SE)	4.27E-05 (SE)	4.71E-05 (SE)	1.20E-04 (SE)
	LIVER	BONE	LIVER	BONE	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

COMPLIANCE STATUS - 10 CFR 50 APP. I
ADULT RECEPTOR

	QTRLY OBJ	1ST QTR JAN-MAR (% OF APP I.)	2ND QTR APR-JUN (% OF APP I.)	3RD QTR JUL-SEP (% OF APP I.)	4TH QTR OCT-NOV (% OF APP I.)	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	BONE	LIVER	BONE		LIVER

RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT TWO

1990 ANNUAL REPORT
MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 02/26/91
INFANT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR	5.91E-06	3.17E-05	9.65E-06	0.00E+00	4.72E-05
(MRAD)	(NE)	(NE)	(NE)	( )	(NE)
BETA AIR	9.49E-07	4.52E-06	2.03E-06	0.00E+00	7.50E-06
(MRAD)	(N)	(N)	(N)	( )	(N)
TOT. BODY	2.58E-06	1.55E-05	4.06E-06	0.00E+00	2.21E-05
(MREM)	(NE)	(NE)	(NE)	( )	(NE)
SKIN	5.24E-06	2.77E-05	8.87E-06	0.00E+00	4.16E-05
(MREM)	(NE)	(NE)	(NE)	( )	(NE)
ORGAN	6.25E-02	3.84E-03	9.77E-03	3.31E-03	7.91E-02
(MREM)	(NNE)	(NNE)	(NNE)	(NNE)	(NNE)
	LUNG	THYROID	THYROID	LUNG	LUNG

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

COMPLIANCE STATUS - 10 CFR 50 APP. I
INFANT RECEPTOR

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-NOV	YRLY OBJ	% OF APP.I
		---------- % 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	0.83	0.05	0.13	0.04	15.0	0.53
		LUNG	THYROID	THYROID	LUNG		LUNG

RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT TWO

1990 ANNUAL REPORT
MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 02/26/91
ADULT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	5.91E-06 (NE)	3.17E-05 (NE)	9.65E-06 (NE)	0.00E+00 ( )	4.72E-05 (NE)
BETA AIR (MRAD)	9.49E-07 (N)	4.52E-06 (N)	2.03E-06 (N)	0.00E+00 ( )	7.50E-06 (N)
TOT. BODY (MREM)	2.58E-06 (NE)	1.55E-05 (NE)	4.06E-06 (NE)	0.00E+00 ( )	2.21E-05 (NE)
SKIN (MREM)	5.24E-06 (NE)	2.77E-05 (NE)	8.87E-06 (NE)	0.00E+00 ( )	4.18E-05 (NE)
ORGAN (MREM)	6.35E-02 (NNE)	4.30E-03 (NNE)	1.14E-02 (NNE)	3.37E-03 (NNE)	8.16E-02 (NNE)
	LUNG	THYROID	GI-LLI	LUNG	LUNG

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

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	0.85	0.06	0.15	0.04	15.0	0.54
		LUNG	THYROID	GI-LLI	LUNG		LUNG

RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT THREE

1990 ANNUAL REPORT
MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 02/26/91
INFANT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	4.73E-05 (NE)	1.83E-04 (NE)	8.62E-05 (NE)	5.50E-05 (NE)	3.71E-04 (NE)
BETA AIR (MRAD)	7.59E-06 (N)	2.32E-05 (N)	1.82E-05 (N)	1.60E-04 (NNE)	2.07E-04 (NNE)
TOT. BODY (MREM)	2.07E-05 (NE)	9.21E-05 (NE)	3.62E-05 (NE)	2.29E-05 (NE)	1.72E-04 (NE)
SKIN (MREM)	4.19E-05 (NE)	1.58E-04 (NE)	7.92E-05 (NE)	1.63E-04 (NNE)	4.41E-04 (NE)
ORGAN (MREM)	8.34E-03 (NNE)	1.92E-02 (NNE)	4.93E-02 (NNE)	5.84E-03 (NNE)	8.22E-02 (NNE)
	LUNG	THYROID	LUNG	THYROID	THYROID

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

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	0.11	0.26	0.66	0.08	15.0	0.55
		LUNG	THYROID	LUNG	THYROID		THYROID

RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT THREE

1990 ANNUAL REPORT
MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 02/26/91
ADULT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	4.73E-05 (NE)	1.83E-04 (NE)	8.62E-05 (NE)	5.50E-05 (NE)	3.71E-04 (NE)
BETA AIR (MRAD)	7.59E-06 (N)	2.32E-05 (N)	1.82E-05 (N)	1.60E-04 (NNE)	2.07E-04 (NNE)
TOT. BODY (MREM)	2.07E-05 (NE)	9.21E-05 (NE)	3.62E-05 (NE)	2.29E-05 (NE)	1.72E-04 (NE)
SKIN (MREM)	4.19E-05 (NE)	1.58E-04 (NE)	7.92E-05 (NE)	1.63E-04 (NNE)	4.41E-04 (NE)
ORGAN (MREM)	8.41E-03 (NNE)	2.18E-02 (NNE)	5.79E-02 (NNE)	6.65E-03 (NNE)	9.25E-02 (NNE)
	LUNG	THYROID	GI-LLI	LUNG	GI-LLI

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

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	0.11	0.29	0.77	0.09	15.0	0.62
		LUNG	THYROID	GI-LLI	LUNG		GI-LLI

RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT TWO
INFANT RECEPTOR

1990 ANNUAL REPORT
MAXIMUM DOSES (MREM) RESULTING FROM LIQUID EFFLUENTS
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 02/26/91

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	5.33E-05	1.05E-04	2.24E-04	1.16E-04	4.98E-04
INTERNAL ORGAN	1.87E-04	1.02E-03	2.19E-03	9.02E-04	4.31E-03
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1990
COMPLIANCE STATUS - 10 CFR 50 APP. I

	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
TOTAL BODY (MREM)	1.5	0.00	0.01	0.01	0.01	3.0	0.02
CRIT. ORGAN(MREM)	5.0	0.00	0.02	0.04	0.02	10.0	0.04
		LIVER	LIVER	LIVER	LIVER		LIVER

RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT TWO
INFANT RECEPTOR

1990 ANNUAL REPORT
PROJECTED DOSE AT NEAREST COMMUNITY WATER SYSTEM *
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 02/26/91

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	5.33E-05	1.05E-04	2.24E-04	1.16E-04	4.98E-04
INTERNAL ORGAN	1.87E-04	1.02E-03	2.19E-03	9.02E-04	4.31E-03
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

COMPLIANCE STATUS - 40 CFR 141

TYPE	ANNUAL LIMIT	% OF LIMIT
TOTAL BODY	4.0 (MREM)	0.012
INTERNAL ORGAN	4.0 (MREM)	0.108
		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

1990 ANNUAL REPORT
MAXIMUM DOSES (MREM) RESULTING FROM LIQUID EFFLUENTS
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 02/26/91

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	3.06E-04	1.84E-03	4.01E-03	1.61E-03	7.76E-03
INTERNAL ORGAN	4.54E-04	2.78E-03	6.06E-03	2.44E-03	1.17E-02
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

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	0.02	0.12	0.27	0.11	3.0	0.26
CRIT. ORGAN(MREM)	5.0	0.01	0.06	0.12	0.05	10.0	0.12
		LIVER	LIVER	LIVER	LIVER		LIVER

RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT TWO
ADULT RECEPTOR

1990 ANNUAL REPORT
PROJECTED DOSE AT NEAREST COMMUNITY WATER SYSTEM *
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 02/26/91

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	3.16E-05	1.29E-04	2.80E-04	1.16E-04	5.56E-04
INTERNAL ORGAN	3.88E-05	1.86E-04	3.93E-04	1.62E-04	7.77E-04
	BONE	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

COMPLIANCE STATUS - 40 CFR 141

TYPE	ANNUAL LIMIT	% OF LIMIT
TOTAL BODY	4.0 (MREM)	0.014
INTERNAL ORGAN	4.0 (MREM)	0.019
		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 THREE
INFANT RECEPTOR

1990 ANNUAL REPORT
MAXIMUM DOSES (MREM) RESULTING FROM LIQUID EFFLUENTS
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 02/26/91

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	9.45E-05	1.05E-04	2.13E-04	7.77E-05	4.90E-04
INTERNAL ORGAN	3.51E-04	1.02E-03	2.12E-03	6.02E-04	4.09E-03
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1990
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	0.01	0.01	3.0	0.02
CRIT. ORGAN(MREM)	5.0	0.01	0.02	0.04	0.01	10.0	0.04
		LIVER	LIVER	LIVER	LIVER		LIVER

RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT THREE
INFANT RECEPTOR

1990 ANNUAL REPORT
PROJECTED DOSE AT NEAREST COMMUNITY WATER SYSTEM *
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 02/26/91

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	9.45E-05	1.05E-04	2.13E-04	7.77E-05	4.90E-04
INTERNAL ORGAN	3.51E-04	1.02E-03	2.12E-03	6.02E-04	4.09E-03
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

COMPLIANCE STATUS - 40 CFR 141

TYPE	ANNUAL LIMIT	% OF LIMIT
TOTAL BODY	4.0 (MREM)	0.012
INTERNAL ORGAN	4.0 (MREM)	0.102
		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 THREE
ADULT RECEPTOR

1990 ANNUAL REPORT
MAXIMUM DOSES (MREM) RESULTING FROM LIQUID EFFLUENTS
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 02/26/91

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	5.83E-04	1.84E-03	3.86E-03	1.07E-03	7.36E-03
INTERNAL ORGAN	8.66E-04	2.78E-03	5.84E-03	1.63E-03	1.11E-02
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

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	0.04	0.12	0.26	0.07	3.0	0.25
CRIT. ORGAN(MREM)	5.0	0.02	0.06	0.12	0.03	10.0	0.11
		LIVER	LIVER	LIVER	LIVER		LIVER

RESULTS BASED UPON
ODCM ANNEX
REVISION 0
MARCH 1989

DRESDEN UNIT THREE
ADULT RECEPTOR

1990 ANNUAL REPORT
PROJECTED DOSE AT NEAREST COMMUNITY WATER SYSTEM *
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 02/26/91

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	5.80E-05	1.29E-04	2.69E-04	7.74E-05	5.33E-04
INTERNAL ORGAN	7.46E-05	1.86E-04	3.78E-04	1.08E-04	7.40E-04
	BONE	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

COMPLIANCE STATUS - 40 CFR 141

TYPE	ANNUAL LIMIT	% OF LIMIT
TOTAL BODY	4.0 (MREM)	0.013
INTERNAL ORGAN	4.0 (MREM)	0.018
		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 NUCLEAR POWER STATION DOCKET NOS. 50-10, 50-237, 50-249

METEOROLOGICAL DATA

(Includes hourly data for Abnormal Release dates on January 5, January 16, and March 10, 1990.)

2EDE91/37

CECo OYSTER STATION — January 1990 - March 1990
300 ft. WIND SPEED and WIND DIRECTION — 300-33 ft. DIFFERENTIAL TEMPERATURE
NUMBER OF OBSERVATIONS = 2116

SPEED CLASS	DIRECTION CLASS																	STABILITY CLASS							
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	C	A	B	D	E	F	TOTAL
1	.03	.04	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03							
2	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03		.03						
3	.03	.03	.03	.03	.03	.03	.03	.04	.03	.03	.03	.03	.03	.03	.03	.03	.03			.03					
4	.03	.14	.03	.04	.14	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03				.05				
5	.03	.03	.03	.04	.03	.03	.03	.03	.03	.04	.03	.03	.03	.03	.03	.03	.03					.03			
6	.03	.03	.03	.03	.03	.03	.03	.03	.03	.04	.03	.03	.03	.03	.03	.03	.03						.03		
7	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03							.03	
																									0.07
1	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03							
2	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03		.03						
3	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.14	.14	.31			.11					
4	.14	.28	.28	.24	.19	.19	.03	.28	.33	.28	.06	.47	.14	.24	.28	4.42					4.42				
5	.25	.09	.03	.14	.19	.19	.14	.14	.28	.14	.09	.24	.24	.24	.25	.14	3.03					3.03			
6	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.31						.31		
7	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03							.03	
																									0.22
1	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03							
2	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.14	.03	.28		.28						
3	.14	.19	.03	.03	.03	.03	.03	.09	.14	.24	.28	.03	.03	.03	.03	.03	1.34			1.34					
4	.47	.71	1.19	1.09	.33	.24	.19	.33	.03	.03	.47	.03	.71	.43	.19	1.39	9.02				9.02				
5	.19	.19	.19	.03	.28	.24	.33	.37	.03	.03	.43	.19	.24	.03	.33	.37	4.19					4.19			
6	.03	.19	.03	.03	.03	.03	.03	.24	.09	.03	.19	.47	.47	.03	.03	.03	1.83						1.83		
7	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03							.03	
																									10.33
1	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03							
2	.03	.03	.03	.03	.03	.09	.09	.03	.14	.03	.03	.03	.03	.03	.03	.33	.87		.87						
3	.03	.03	.03	.03	.03	.03	.03	.19	.03	.19	.03	.14	.28	.03	.28	.03	1.84			1.84					
4	.37	.37	1.19	1.38	1.65	.43	.28	.52	1.89	1.28	.03	.66	.83	7.87	7.51	.66	25.83				15.83				
5	.43	.47	.03	.03	.14	.33	.28	.93	1.66	2.22	1.51	.93	1.75	1.18	1.18	.81	13.75					13.75			
6	.28	.03	.03	.03	.03	.09	.14	.43	.37	.47	.37	.28	.33	.03	.03	.03	3.21						3.21		
7	.03	.03	.03	.03	.03	.03	.03	.03	.19	.09	.03	.03	.03	.03	.03	.03	.24							.24	
																									25.28
1	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03							
2	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03		.03						
3	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.07			.07					
4	.19	.03	.03	.03	.07	.14	.03	.03	1.51	1.18	.47	.33	.71	1.89	1.04	.19	10.07				10.07				
5	.09	.09	.19	.03	.09	.14	.24	.09	3.20	1.89	1.23	.01	1.13	.93	.43	.19	11.31					11.31			
6	.24	.03	.03	.03	.21	.03	.19	.03	.19	.14	.28	.09	.03	.03	.03	.03	1.34						1.34		
7	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03							.03	
																									23.14
1	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03							
2	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03		.03						
3	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03			.03					
4	.03	.19	.19	.19	.03	.03	.03	.14	.28	.09	.19	.03	.03	.03	.03	.28	1.87				1.87				
5	.03	.14	.03	.03	.03	.03	.03	.14	.03	2.17	1.47	.24	.03	.03	.39	.39	8.53					8.53			
6	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03						.03		
7	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03							.03	
																									9.11

CECo [illegible] STATION
300 Ft. WIND SPEED and WIND DIRECTION

January 1992 - March 1992
300-33 Ft. DIFFERENTIAL TEMPERATURE

SPEED CLASS	DIRECTION CLASS																	STABILITY CLASS						
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	1A	1B	2C	3D	4E	5F	TOTAL
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00					
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00				
4	.00	.00	.00	.00	.00	.00	.00	.00	.10	.10	.33	.00	.24	.20	.20	.10	1.16				1.16			
5	.00	.00	.00	.00	.00	.00	.00	.10	.24	.05	.09	.10	.12	.09	.05	.05	1.22					1.22		
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00	
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00
																								2.38
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00					
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00				
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.26	.00	.00	.01	.28				.28			
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.29					.29		
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00	
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00
																								.00
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00					
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00				
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00			
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					.00		
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00	
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00
																								.00
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00					
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00				
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00			
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					.00		
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00	
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00
																								.00
TOT	2.03	0.31	0.42	0.00	0.03	0.03	0.17	0.77	1.11	12.20	2.01	0.14	0.32	1.16	1.16	1.31	100.00	.01	.13	4.77	48.03	42.11	3.14	.16	100.00
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
2	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.14	.10	.10	.00							
3	.00	.00	.00	.00	.00	.00	.01	.10	.43	.02	.10	.01	.01	.03	.07	.01	4 **							
4	1.01	2.01	2.03	1.02	1.00	.00	.71	1.01	4.01	4.44	2.70	2.02	3.70	3.00	4.10	3.21	41.00							
5	.00	.01	.07	.20	.20	.02	1.23	2.12	6.11	6.21	3.42	2.22	6.42	3.21	2.27	1.11	42.00							
6	.10	.20	.20	.02	.10	.10	.20	.70	.01	.07	1.22	.01	.02	.10	.10	.21	7.20							
7	.00	.00	.00	.00	.00	.00	.00	.01	.10	.01	.00	.00	.00	.00	.00	.00	.01							

CECo DRESDEN STATION — April 1993 - June 1998
300 Ft. WIND SPEED and WIND DIRECTION — 300-33 Ft. DIFFERENTIAL TEMPERATURE
NUMBER OF OBSERVATIONS = 2175

SPEED CLASS	DIRECTION CLASS																	STABILITY CLASS							
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	1	2	3	4	5	6	7	TOTAL
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00				
5	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00	.25	.00	.00	.00	.00					.00			
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00		
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																	.10								.10
1	.01	.01	.02	.00	.00	.01	.01	.00	.00	.02	.00	.00	.00	.00	.00	.01	.01	.01							
2	.00	.10	.20	.03	.15	.03	.00	.10	.03	.00	.00	.00	.03	.00	.00	.02	1.20		1.06						
3	.00	.20	.25	.15	.02	.05	.00	.10	.00	.00	.00	.00	.05	.00	.00	.01	1.20			1.20					
4	.00	.00	.03	.10	.02	.03	.03	.02	.02	.01	.04	.00	.07	.03	.10	.03	4.02				4.02				
5	.01	.05	.01	.07	.07	.03	.03	.02	.04	.04	.04	.04	.07	.07	.10	.03	2.27					2.27			
6	.00	.01	.10	.05	.00	.00	.10	.05	.05	.01	.10	.10	.03	.10	.05	.05	1.15						1.15		
7	.00	.00	.00	.00	.00	.00	.00	.01	.01	.00	.01	.01	.10	.00	.00	.00	.37							.37	
																	10.03								10.03
1	.10	.10	.03	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.01	.10	.03	.07	.07							
2	.03	.05	.02	.05	.00	.03	.10	.00	.05	.05	.00	.00	.03	.03	.03	.03	1.75		1.75						
3	.00	.00	.03	.00	.00	.10	.00	.03	.03	.00	.00	.00	.00	.00	.00	.00	1.03			1.03					
4	.10	.02	1.20	.10	.10	.02	.01	.01	.00	.02	.00	.05	.10	.10	.02	.02	8.10				8.10				
5	.02	.00	.05	.01	.00	.10	.00	.00	.02	.10	.00	.00	.00	.02	.01	.10	2.40					2.40			
6	.03	.05	.10	.10	.03	.05	.00	.02	.10	.02	.03	.02	.07	.10	.00	.05	2.00						2.00		
7	.00	.00	.01	.00	.02	.00	.01	.00	.00	.00	.01	.10	.03	.00	.00	.00	.31							.31	
																	21.02								21.02
1	.00	.10	.00	.00	.00	.00	.01	.01	.01	.00	.01	.10	.01	.02	.01	.01	1.00	1.00							
2	.01	.10	.01	.00	.00	.02	.10	.10	.00	.03	.00	.00	.01	.01	.02	.03	2.21		2.21						
3	.00	.00	.10	.03	.00	.01	.00	.03	.02	.03	.10	.10	.02	.02	.01	.02	2.11			2.11					
4	.01	.01	1.07	.01	.01	.04	.01	1.03	1.09	.03	.06	.05	1.01	1.01	1.03	.01	13.15				13.15				
5	.01	.01	.01	.01	.02	.02	1.02	1.02	.01	1.01	.04	.02	1.01	.01	.06	.01	12.09					12.09			
6	.01	.01	.10	.03	.02	.10	.02	.03	.10	.03	.03	.04	.04	.04	.03	.05	2.02						2.02		
7	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.01							.01	
																	31.31								31.31
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01	.01							
2	.00	.00	.00	.00	.00	.00	.00	.00	.01	.10	.10	.00	.01	.02	.00	.10	1.24		1.24						
3	.00	.00	.00	.00	.00	.00	.00	.00	.01	.10	.01	.00	.00	.00	.00	.00	1.24			1.24					
4	.07	.00	.01	.00	.01	.07	.00	.00	.02	.10	.01	.00	.01	.00	.00	.00	0.02				0.02				
5	.01	.00	.10	.00	.00	.01	.03	.01	2.07	1.01	.01	.10	.01	.02	.00	.00	6.11					6.11			
6	.00	.01	.00	.00	.00	.00	.00	.00	.10	.00	.01	.02	.01	.00	.00	.00	.01						.01		
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																	9.11								9.11
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00							
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
3	.00	.00	.00	.00	.00	.00	.00	.00	.10	.10	.10	.00	.00	.01	.00	.00	.11			.11					
4	.00	.01	.02	.02	.02	.00	.02	.01	.03	1.10	.07	.03	.07	1.20	.01	.00	3.10				3.10				
5	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					.00			
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00		
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																	3.23								3.23

[illegible] METEOROLOGICAL STATION — April 1985 - June 1989
300 ft. WIND SPEED and WIND DIRECTION — 300-33 ft. DIFFERENTIAL TEMPERATURE

SPEED CLASS	DIRECTION CLASS													STABILITY CLASS						
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL %	C					
[illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						
1 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00					
2 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00				
3 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01	.02	.01	.01	.01	.02	.00	0.01				0.01			
4 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01	.02	.02	.01	.01	.02	.00	.01					.01		
5 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00	
[illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00
																	0.03							
[illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						
1 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00					
2 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00				
3 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00			
4 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01	.01	.00	.00	.00	.00	.00	.01					.01		
5 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00	
[illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00
																	.01							
[illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						
1 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00					
2 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00				
3 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00			
4 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					.00		
5 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00	
[illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00
																	.00							
[illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						
[illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00					
2 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00				
3 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00			
4 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					.00		
5 [illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00	
[illegible]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00
																	.00							
[illegible]	3.42	4.32	8.71	3.28	4.14	3.34	3.29	8.67	15.21	12.34	7.26	8.27	8.78	8.22	7.11	6.49	100.00	2.89	8.34	8.92	41.11	31.31	8.27	1.29	100.00
5 [illegible]	.33	.32	.00	.00	.14	.25	.14	.29	.14	.29	.25	.14	.29	.41	.48	.48	2.79							
6 [illegible]	.32	.37	1.21	.14	.21	.29	.18	.37	.37	.32	.28	.18	.32	.37	.37	.48	5.34							
8 [illegible]	.29	.48	.48	.18	.29	.23	.32	.51	.51	.82	.51	.78	.35	.48	.82	.51	8.32							
[illegible]	3.15	1.72	3.41	1.11	1.93	1.22	1.39	2.87	4.66	4.46	3.28	2.23	3.14	3.88	2.41	2.27	41.81							
7 [illegible]	1.15	1.47	1.21	.32	1.04	.97	2.23	2.48	3.77	3.75	1.82	1.69	2.24	1.75	1.58	.87	31.59							
8 [illegible]	.51	.51	.48	.28	.29	.23	.97	.51	.74	.37	.87	.32	.32	.78	.89	.74	8.91							
9 [illegible]	.25	.25	.23	.00	.00	.21	.25	.25	.25	.25	.23	.23	.28	.41	.00	.00	3.23							

CECO DRESDEN NUCLEAR POWER STATION
METEOROLOGICAL DATA

DATE		....WIND SPEED....			.WIND DIRECTION.			...WIND SIGMA...			TEMP	...DIFF T...		.....DEW POINT.....			PRECIP
MM-DD-YY	HR	35	150	300	35	150	300	35	150	300	35	150	300	35	150	300	IN
1- 5-90	1	3.8	6.7	7.7	251	274	293	14	5	4	25.8	.4	.2	22.9	999.0	20.7	.00
1- 5-90	2	3.7	4.9	6.2	225	264	289	9	6	4	25.3	.6	.4	23.0	999.0	20.8	.00
1- 5-90	3	3.2	3.8	4.4	183	239	282	23	20	14	24.4	1.1	1.1	22.8	999.0	20.9	.00
1- 5-90	4	5.1	7.1	8.7	170	179	187	10	25	18	24.2	1.4	.9	22.5	999.0	21.0	.00
1- 5-90	5	5.5	10.9	11.0	197	204	206	8	8	8	23.7	1.0	1.8	22.1	998.0	21.1	.00
1- 5-90	6	2.7	7.1	7.4	133	218	220	79	11	11	23.3	1.7	2.5	21.7	998.0	21.0	.00
1- 5-90	7	3.7	8.3	8.8	174	208	204	19	7	5	24.3	1.1	1.7	22.7	999.0	20.8	.00
1- 5-90	8	2.8	6.8	8.3	142	204	189	27	12	6	23.8	1.4	2.5	22.4	999.0	20.7	.00
1- 5-90	9	5.4	9.2	11.8	165	183	178	18	4	5	25.2	.8	1.6	23.4	999.0	20.6	.00
1- 5-90	10	8.5	7.5	8.9	189	192	183	7	5	5	28.1	-1.0	-1.5	24.4	998.0	21.5	.00
1- 5-90	11	9.4	11.1	11.6	191	191	193	8	6	4	30.4	-1.2	-2.1	25.0	999.0	22.2	.00
1- 5-90	12	9.1	10.3	10.7	199	201	203	12	9	7	31.9	-1.3	-2.2	25.2	999.0	22.7	.00
1- 5-90	13	9.0	10.3	10.8	197	198	200	12	11	9	33.5	-1.3	-2.2	25.6	999.0	23.3	.00
1- 5-90	14	9.3	10.7	11.3	205	205	206	14	11	9	35.0	-1.3	-2.2	26.1	999.0	23.7	.00
1- 5-90	15	10.3	12.0	12.7	198	198	199	9	7	6	35.3	-1.1	-2.0	25.8	999.0	24.5	.00
1- 5-90	16	8.7	10.9	12.3	208	207	209	12	10	9	35.2	-.8	-1.6	26.8	999.0	25.0	.00
1- 5-90	17	6.2	10.1	12.2	198	203	207	6	4	3	33.7	.1	-.4	27.2	998.0	25.8	.00
1- 5-90	18	6.3	10.5	14.8	175	187	198	7	5	3	32.3	.3	.0	27.4	998.0	26.0	.00
1- 5-90	19	6.0	11.1	16.2	184	193	202	4	2	2	31.2	.6	1.1	26.0	998.0	26.4	.00
1- 5-90	20	6.8	12.1	17.5	183	191	202	5	5	4	30.2	.6	1.1	27.3	998.0	26.7	.00
1- 5-90	21	5.9	11.5	16.6	187	195	205	5	3	2	28.9	.5	.9	27.5	998.0	26.8	.00
1- 5-90	22	4.8	9.5	15.1	201	208	212	11	5	4	28.9	.5	.8	27.7	998.0	26.2	.00
1- 5-90	23	5.1	10.3	16.0	216	218	224	8	3	5	30.1	.5	.9	27.3	998.0	25.8	.00
1- 5-90	24	6.1	12.3	18.2	226	232	240	4	3	2	29.4	1.4	2.3	26.1	998.0	24.8	.00
																TOTAL:	.00

CECO DRESDEN NUCLEAR POWER STATION
METEOROLOGICAL DATA

DATE		....WIND SPEED....			.WIND DIRECTION.			...WIND SIGMA...			TEMP	...DIFF T...		.....DEW POINT.....			PRECIP
MM-DD-YY	HH	35	150	300	35	150	300	35	150	300	35	150	300	35	150	300	10
1-16-93	1	4.8	9.1	13.2	108	134	175	5	6	3	35.4	2.1	6.9	35.4	37.5	40.7	.00
1-16-93	2	4.8	11.1	18.4	123	161	188	12	9	5	35.9	4.0	8.9	35.8	38.8	41.6	.00
1-16-93	3	5.3	9.2	13.6	229	236	228	88	66	46	40.2	1.1	2.5	40.2	41.3	41.9	.00
1-16-93	4	3.8	4.8	5.1	52	45	254	49	71	45	38.2	1.6	3.5	38.2	40.0	41.0	.00
1-16-93	5	3.9	5.3	6.6	97	123	209	16	19	11	39.2	2.3	3.9	39.2	42.1	42.5	.00
1-16-93	6	4.9	7.2	9.1	138	144	188	4	7	2	40.9	2.6	3.6	40.9	43.5	43.8	.00
1-16-93	7	6.3	8.8	11.3	113	163	225	7	9	7	43.3	1.7	2.9	43.3	45.0	45.6	.00
1-16-93	8	6.0	8.0	10.2	118	169	225	10	12	8	45.2	.8	1.7	45.2	46.0	46.3	.00
1-16-93	9	3.8	6.4	10.2	138	183	224	14	9	9	46.8	.2	.8	46.8	47.0	46.9	.00
1-16-93	10	4.1	7.3	10.4	151	188	183	15	12	7	47.8	-.2	.0	47.8	47.8	47.1	.00
1-16-93	11	3.8	6.7	10.3	166	181	334	9	11	11	48.5	.0	.3	48.5	48.5	48.6	.02
1-16-93	12	3.2	6.1	8.5	153	176	192	28	13	10	50.4	-.4	-.1	50.4	50.0	49.8	.10
1-16-93	13	2.7	5.3	8.3	183	193	231	44	34	22	51.8	-.2	-.2	51.8	51.6	51.0	.20
1-16-93	14	6.9	11.0	15.3	163	173	188	15	11	8	52.8	.0	.4	52.8	52.8	52.4	.01
1-16-93	15	7.2	10.0	14.4	158	167	178	9	8	6	55.2	-.6	-.4	55.2	54.7	53.8	.00
1-16-93	16	7.4	11.2	14.9	161	168	176	4	4	4	57.1	-.1	-.2	56.7	55.8	54.9	.00
1-16-93	17	7.3	11.5	16.8	162	169	175	12	9	8	57.0	.5	.8	55.5	55.8	54.9	.00
1-16-93	18	8.3	13.5	20.0	172	180	184	13	8	5	57.2	.4	.9	54.8	54.8	54.0	.00
1-16-93	19	7.8	13.3	19.1	165	172	177	5	3	3	55.8	.3	.8	54.9	54.8	53.8	.00
1-16-93	20	8.1	14.0	19.8	165	173	174	8	4	2	55.7	.4	.7	53.6	53.8	52.5	.00
1-16-93	21	11.0	16.6	22.4	175	183	187	9	7	6	55.2	.0	.1	52.1	52.1	51.9	.00
1-16-93	22	11.7	18.0	24.1	187	193	192	4	3	3	54.7	.1	.2	52.0	51.9	51.6	.00
1-16-93	23	13.5	19.7	25.4	191	193	195	4	3	3	53.8	.0	.0	51.6	51.6	51.5	.00
1-16-93	24	14.9	21.1	26.6	193	192	195	4	3	3	53.0	-.1	-.2	52.0	51.8	51.6	.00
																TOTAL:	.33

CECO DRESDEN NUCLEAR POWER STATION
METEOROLOGICAL DATA

DATE		....WIND SPEED....			.WIND DIRECTION.			...WIND SIGMA...			TEMP	...DIFF T...		.....DEW POINT.....			PRECIP
MM-DD-YY	HR	35	150	330	35	150	330	35	150	330	35	150	330	35	150	330	10
3-10-90	1	5.8	10.7	16.2	144	166	178	18	7	4	52.8	1.6	2.0	51.5	52.0	51.5	.01
3-10-90	2	6.8	10.8	15.9	165	177	188	14	10	7	53.8	.3	.3	52.8	52.7	51.8	.00
3-10-90	3	7.5	11.1	15.3	198	201	204	11	9	6	54.3	.0	-.3	54.1	53.8	52.6	.00
3-10-90	4	6.6	9.7	13.5	239	210	210	9	7	5	55.6	.0	-.3	55.6	55.4	54.1	.03
3-10-90	5	7.9	12.5	16.5	241	239	240	14	9	5	55.9	.3	.3	55.9	56.1	54.8	.10
3-10-90	6	11.6	16.9	20.0	189	181	192	22	16	21	56.5	.2	.6	55.5	55.2	54.5	.11
3-10-90	7	12.3	16.3	24.7	199	199	197	11	8	6	57.1	.4	1.6	55.4	54.8	52.5	.00
3-10-90	8	7.3	10.8	15.4	194	195	194	11	8	5	57.1	.1	-.2	55.1	54.4	52.8	.00
3-10-90	9	6.9	10.1	14.1	184	187	188	12	8	5	56.8	-.2	-.6	56.4	55.4	53.8	.00
3-10-90	10	12.8	17.3	21.9	192	194	193	13	11	9	60.4	-.2	-.6	58.8	58.5	57.4	.01
3-10-90	11	7.5	9.6	11.9	210	210	211	14	13	14	61.7	-.3	-1.2	60.3	59.7	58.4	.00
3-10-90	12	5.2	8.4	10.1	252	249	247	37	27	21	60.7	.9	.4	59.8	59.5	58.3	.04
3-10-90	13	8.1	11.4	12.5	28	69	59	92	57	53	60.2	.5	.6	59.8	59.5	57.9	.18
3-10-90	14	8.1	9.2	10.3	183	189	177	49	31	24	60.2	.7	.8	60.2	60.2	58.0	.18
3-10-90	15	10.3	13.9	18.3	154	155	153	22	15	10	60.9	.0	-.4	60.6	60.0	58.5	.01
3-10-90	16	8.6	11.2	14.1	172	173	171	15	10	9	61.5	-.4	-1.3	60.3	59.5	58.0	.00
3-10-90	17	4.4	6.0	8.0	138	185	187	34	21	16	61.6	-.1	-.5	59.7	59.0	57.1	.00
3-10-90	18	3.1	4.0	4.2	241	245	242	62	41	33	60.5	.8	-.1	59.4	59.0	57.3	.00
3-10-90	19	4.6	6.3	8.1	186	189	183	22	11	10	59.8	.6	-.2	58.7	58.1	56.7	.00
3-10-90	20	2.2	3.4	4.0	248	251	245	46	36	29	58.8	.7	.2	57.9	57.6	56.1	.00
3-10-90	21	3.8	5.0	5.1	347	327	325	73	74	73	58.2	1.2	1.2	57.8	57.4	55.9	.01
3-10-90	22	8.4	12.2	12.7	138	139	144	14	17	14	57.5	1.4	1.2	57.4	57.4	56.1	.00
3-10-90	23	5.7	8.3	11.4	147	157	163	10	8	4	57.6	.0	-.8	57.1	56.7	55.5	.00
3-10-90	24	2.2	4.7	6.6	133	153	158	40	18	11	57.6	.4	-.2	57.3	57.1	56.1	.00
																TOTAL:	.63