



Dresden Nuclear Power Station

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10 CFR 50.36a (a)(2)

April 30, 2014

SVPLTR #14-0028

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Dresden Nuclear Power Station, Units 1, 2, and 3
Facility Operating License No. DPR-2
Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-010, 50-237 and 50-249

Subject: Dresden Nuclear Power Station 2013 Radioactive Effluent Release Report and Offsite Dose Calculation Manual

The Radioactive Effluent Release Report for January through December 2013 for Dresden Nuclear Power Station (DNPS) is submitted in accordance with Sections 6.9.A.4 and 5.6.3, "Radioactive Effluent Release Report," of the DNPS Unit 1 and Units 2 and 3 Technical Specifications, respectively and 10 CFR 50.36a(a)(2), "Technical specifications on effluents from nuclear power reactors."

Should you have any questions concerning this letter, please contact Glen Morrow, Regulatory Assurance Manager, at (815) 416-2800.

Respectfully,

A handwritten signature in black ink, appearing to read "Shane Marik".

Shane Marik
Site Vice President
Dresden Nuclear Power Station

Attachments: DNPS 2013 Annual Radioactive Effluent Release Report

cc: Regional Administrator - NRC Region III
NRC Senior Resident - Dresden Nuclear Power Station (w/o Enclosures)

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DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
DOCKET NUMBERS: 50-010/50-237/50-249

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT, SUPPLEMENTAL INFORMATION

Facility: Dresden Nuclear Power Station Units 1,2,3

Licensee: Exelon Nuclear

1. Regulatory Limits

a. Fission and activation gases:

Dose Rate (site)

- 1) Less than 500 mrem/year to the whole body.
- 2) Less than 3000 mrem/year to the skin.

Gamma Air Dose (each unit)

- 1) Less than or equal to 5 mrad/quarter.
- 2) Less than or equal to 10 mrad/year.

Beta Air Dose (each unit)

- 1) Less than or equal to 10 mrad/quarter.
- 2) Less than or equal to 20 mrad/year.

b.,c. Iodine-131, Iodine-133, and all radionuclides in particulate form with half-lives greater than 8 days:

Dose Rate (site)

- 1) Less than 1500 mrem/year.

Dose (each unit)

- 1) Less than or equal to 7.5 mrem/quarter to any organ.
- 2) Less than or equal to 15 mrem/year to any organ.

d. Liquid effluents (each unit):

- 1) Less than or equal to 1.5 mrem to the whole body during any calendar quarter.
- 2) Less than or equal to 5 mrem to any organ during any calendar quarter.
- 3) Less than or equal to 3 mrem to the whole body during any calendar year.
- 4) Less than or equal to 10 mrem to any organ during any calendar year.

e. 40CFR190 and 10CFR72 (all uranium fuel cycle operations in the region):

- 1) Less than or equal to 25 mrem annual whole body dose.
- 2) Less than or equal to 75 mrem annual thyroid dose.
- 3) Less than or equal to 25 mrem annual dose to any other critical organ.

2. Maximum Permissible Concentrations

Dose rates, rather than effluent concentrations, are used to calculate permissible release rates for gaseous effluents. The maximum permissible dose rates for gaseous releases are defined in Dresden Offsite Dose Calculation Manual (ODCM) Radiological Effluent Control (REC) 12.4.1.

Liquid effluent concentrations are limited per ODCM REC 12.3.1 to 10 times the concentration specified in 10CFR20 Appendix B, Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases and $2.00E-04$ $\mu\text{Ci/ml}$ total activity for all dissolved or entrained noble gases.

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3. Average Energy

The ODCM limits dose rates at or beyond the site boundary due to the release of noble gases to less than or equal to 500 mrem per year to the total body and less than or equal to 3,000 mrem per year to the skin, and average energy is not used to determine dose to the public. Compliance with these limits is demonstrated based on dose calculations using measured isotopic concentrations of effluent streams and not based on gross count rate measuring systems. Therefore, the average beta and gamma energies (\bar{E}) for gaseous effluents as described in Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants," are not applicable.

4. Measurement and Approximations of Total Radioactivity

- a. Fission and Activation Gases:
- b. Iodines:
- c. Particulates:
- d. Tritium:
- e. Gross Alpha

The 2/3 Chimney, 2/3 Reactor Building Vent, and Chemical Cleaning Building effluents are continuously sampled for iodines and particulates. These samples are changed weekly and analyzed by gamma spectroscopy. The particulate filters are composited and sent to a vendor for gross alpha, Sr-89, Sr-90, and Fe-55 analysis. Noble gas grab samples of the 2/3 Chimney and 2/3 Reactor Building Vent are obtained weekly and analyzed by gamma spectroscopy. Contributing streams of the 2/3 Chimney and 2/3 Reactor Building Vent are also sampled and analyzed by gamma spectroscopy. Tritium samples of the 2/3 Chimney and 2/3 Reactor Building Vent are obtained monthly and analyzed by liquid scintillation.

For the 2/3 Chimney and 2/3 Reactor Building Vent effluents, measured flow at the release points is used to calculate the curies released. Chemical Cleaning Building effluents, the design basis flows are used to calculate curies released.

f. Carbon-14:

Carbon-14 activity released is estimated using Electric Power Research Institute Technical Report 1021106 Boiling Water Reactor proxy values (5.1 Ci per GWth year, Section 3.7) and the rated thermal capacity maintained for the entire calendar year. Resultant dose is calculated using approved methodologies.

g. Liquid Effluents:

The river discharge tank is analyzed for gamma-emitting nuclides by gamma spectroscopy and for tritium by liquid scintillation prior to discharge. A representative portion of this sample is saved and composited with other discharges that occur during the calendar month. The composite is sent to a vendor for analyses of gross alpha, Sr-89, Sr-90, and Fe-55. The tank volumes and activities are used to calculate the diluted activity released at the discharge point from batch discharges.

Containment Cooling Service Water (CCSW) is sampled from the Low Pressure Coolant Injection (LPCI) heat exchangers monthly and analyzed for gamma-emitting nuclides by gamma spectroscopy. These samples are composited quarterly and analyzed for tritium, gross alpha, Sr-89, Sr-90, and Fe-55. Batch release volume is based on LPCI heat exchanger volume.

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h. Estimated Total Errors:

The estimated total errors were calculated as the square root of the sum of the squares of significant errors present in the sampling and analysis process.

i. Less than the Lower Limit of Detection (<LLD)

Samples are analyzed such that the ODCM LLD requirements are met. When a nuclide is not detected, then <LLD is reported.

5. Batch Releases (does not include Abnormal / Unmonitored Releases described below)

a. Liquid - Radwaste Liquid Effluents - None

b. Liquid - Containment Cooling Service Water (CCSW)

1. Number of batch releases: 0
2. Total time period for batch releases: 0.00E+00 minutes
3. Maximum time period for a batch release: 0.00E+00 minutes
4. Average time period for a batch release: 0.00E+00 minutes
5. Minimum time period for a batch release: 0.00E+00 minutes
6. Average stream flow during periods of release of effluent into a flowing stream: 0.00E+00 lpm

c. Gaseous - None

6. Abnormal Releases*

a. Liquid

1. Number of releases: 0
2. Total activity released: 0.00E+00 Ci

b. Gaseous

1. Number of releases: 0
2. Total activity released: 0.00E+00 Ci

7. Summary of Offsite Dose Calculation Manual (ODCM) Changes by Dresden Nuclear Power Station (DNPS) in 2013: None: Revision 12 of the ODCM was issued on April 8, 2012.

8. Unmonitored Releases*

a. Liquid

1. Number of releases: 9 (Storm sewers)
2. Total activity released: 3.33E-03 Ci

b. Gaseous

1. Number of releases: 4 (U1Main Turbine Floor, Chem Lab. Heating Steam, Unit 2 Isolation Condenser)
2. Total activity released: 3.30E-04 Ci

a.1 Water in on-site storm sewers is routinely sampled and analyzed for tritium content. The highest storm drain

* These releases are included in the Effluents Summation of all Releases Tables and in the Radiological Impact on Man.

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concentrations measured during each calendar quarter of 2013 was used to calculate the released activity for each month. The total activity released is based on an estimated typical discharge flow of 10 gallons per minute. Tritium was detected in the storm sewers in three of the four quarters. An estimated $3.33\text{E-}03$ Ci of tritium was released to the environment during 2013.

- b.1 The Unit 1 Main Turbine Floor is used as an area to work on contaminated equipment. The ventilation system is no longer operational and the floor is at ambient pressure with the outside environment. With radiological work activities being performed on the Unit 1 Main Turbine Floor, the potential exists for airborne activity to be released to the environment through various points. Based on the work normally performed in this area, an estimated $3.60\text{E-}05$ Ci of Cs-137 was released from this area during 2013.
- b.2 The Chemistry Laboratory Ventilation System exhausts directly into the environment and is not monitored. Based on an evaluation of activities performed in the area, the estimated activity released to the environment from the laboratory in 2013 is $8.93\text{E-}05$ Ci of noble gases and $9.02\text{E-}07$ Ci of iodines and particulates.
- b.3 The Unit 2/3 Heating Steam System has been contaminated in the past. The system continues to contain low-level tritium contamination. During normal operation, the condensate is converted to steam, a portion of which gets vented to the atmosphere. An estimated $1.46\text{E-}05$ Ci of activity was released to the environment during 2013.
- b.4 The Unit 2 Isolation Condenser, once per five year heat removal capacity test was conducted on November 5, 2013. Low level tritium was detected and $1.89\text{E-}04$ Ci were released during the test.

9. Errata:

Corrections to the 2011 Annual Radioactive Effluent Release Report have been made and are included at the end of this report.

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EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013

Units	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Est. Total Error, %
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A. Fission & activation gases

1. Total release	Ci	1.82E+01	1.58E+01	1.08E+01	1.01E+01	1.31E+01
2. Average release rate for period	μCi/sec	2.34E+00	2.01E+00	1.36E+00	1.27E+00	
3. Percent of ODCM dose limit	%γ	1.70E-02	1.50E-02	1.10E-02	1.00E-02	
	%β	3.12E-04	3.19E-04	2.19E-04	2.00E-04	

B. Iodines

1. Total iodine-131	Ci	1.43E-04	2.93E-04	2.85E-04	1.93E-04	2.60E+01
2. Average release rate for period (I-131)	μCi/sec	1.84E-05	3.72E-05	3.59E-05	2.42E-05	
3. Percent of ODCM dose limit *	%	3.06E-01	2.99E-01	3.46E-01	2.79E-01	

C. Particulates

1. Particulates with half-lives > 8 days	Ci	4.91E-04	4.33E-04	1.06E-03	1.25E-03	2.94E+01
2. Average release rate for period	μCi/sec	6.31E-05	5.51E-05	1.34E-04	1.57E-04	
3. Percent of ODCM dose limit *	%	3.06E-01	2.99E-01	3.46E-01	2.79E-01	

D. Tritium

1. Total release	Ci	8.63E+00	5.37E+00	5.14E+00	5.09E+00	7.56E+00
2. Average release rate for period	μCi/sec	1.11E+00	6.83E-01	6.47E-01	6.04E-01	
3. Percent of ODCM dose limit *	%	3.06E-01	2.99E-01	3.46E-01	2.79E-01	

E. Gross Alpha

1. Total release	Ci	<LLD	<LLD	<LLD	<LLD	2.94E+01
2. Average release rate for period	μCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
3. Percent of ODCM dose limit	%	N/A	N/A	N/A	N/A	

F. Carbon-14

1. Total release	Ci	7.58E+00	7.46E+00	8.54E+00	6.72E+00	
2. Average release rate for period	μCi/sec	9.75E-01	9.49E-01	1.07E+00	8.45E-01	

* Percent of ODCM dose limit indicates combined total of Iodines, Particulates, and Tritium

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EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013

TABLE OF LOWER LIMITS OF DETECTABILITY
 FOR GASEOUS EFFLUENTS

1.	FISSION / ACTIVATION GASES	$\mu\text{Ci/cc}$
	Kr-87	1.00E-04
	Kr-88	1.00E-04
	Xe-133	1.00E-04
	Xe-133m	1.00E-04
	Xe-135	1.00E-04
	Xe-138	1.00E-04
2.	IODINES	$\mu\text{Ci/cc}$
	I-131	1.00E-12
	I-133	1.00E-10
3.	PARTICULATES	$\mu\text{Ci/cc}$
	Sr-89	1.00E-11
	Sr-90	1.00E-11
	Mn-54	1.00E-11
	Co-58	1.00E-11
	Fe-59	1.00E-11
	Co-60	1.00E-11
	Zn-65	1.00E-11
	Mo-99	1.00E-11
	Cs-134	1.00E-11
	Cs-137	1.00E-11
	Ce-141	1.00E-11
	Ce-144	1.00E-11
4.	OTHER	$\mu\text{Ci/cc}$
	H-3	1.00E-06
	Gross Alpha	1.00E-11

The above values are the ODCM-required LLDs. The actual analyses always met the required LLDs.

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EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013

UNIT 1 MAIN CHIMNEY

GASEOUS EFFLUENTS

DOCKET NUMBER: 50-010

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ELEVATED RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	TOTAL
1. Fission and Activation Gases						
Ar-41	Ci	N/A	N/A	N/A	N/A	N/A
Kr-85	Ci	N/A	N/A	N/A	N/A	N/A
Kr-85m	Ci	N/A	N/A	N/A	N/A	N/A
Kr-87	Ci	N/A	N/A	N/A	N/A	N/A
Kr-88	Ci	N/A	N/A	N/A	N/A	N/A
Xe-133	Ci	N/A	N/A	N/A	N/A	N/A
Xe-133m	Ci	N/A	N/A	N/A	N/A	N/A
Xe-135	Ci	N/A	N/A	N/A	N/A	N/A
Xe-135m	Ci	N/A	N/A	N/A	N/A	N/A
Xe-138	Ci	N/A	N/A	N/A	N/A	N/A
Total for period	Ci	None*	None*	None*	None*	None*
2. Iodines						
I-131	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	None	None	None	None	None
3. Particulates						
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	5.07E-07	2.81E-07	<LLD	<LLD	7.88E-07
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	5.07E-07	2.81E-07	<LLD	<LLD	7.88E-07
4. Tritium						
Total for period	Ci	None*	None*	None*	None*	None*

* Analysis not required per Dresden Station ODCM

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2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2013

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013

UNIT 1 MAIN CHIMNEY

GASEOUS EFFLUENTS

DOCKET NUMBER: 50-010

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ELEVATED RELEASES **BATCH MODE**

Nuclides Released	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	TOTAL
1. Fission and Activation Gases						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-133	Ci					
Xe-133m	Ci					
Xe-135	Ci					
Xe-135m	Ci					
Xe-138	Ci					
Total for period	Ci	None*	None*	None*	None*	None*
2. Iodines						
I-131	Ci					
I-133	Ci					
I-135	Ci					
Total for period	Ci	None*	None*	None*	None*	None*
3. Particulates						
Fe-55	Ci					
Sr-89	Ci					
Sr-90	Ci					
Cr-51	Ci					
Mn-54	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Mo-99	Ci					
Ag-110m	Ci					
Cs-134	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	Ci					
Total for period	Ci	None*	None*	None*	None*	None*
4. Tritium						
Total for period	Ci	None*	None*	None*	None*	None*

* No batch releases via this release path

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EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013

UNITS 2/3 REACTOR BUILDING VENT

GASEOUS EFFLUENTS

DOCKET NUMBERS: 50-237/50-249

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MIXED-MODE RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	TOTAL
1. Fission and Activation Gases						
Ar-41	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
2. Iodines						
I-131	Ci	<LLD	<LLD	<LLD	5.39E-06	5.39E-06
I-133	Ci	<LLD	<LLD	<LLD	3.41E-06	3.41E-06
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	<LLD	<LLD	<LLD	8.80E-06	8.80E-06
3. Particulates						
Fe-55	Ci	<LLD	<LLD	<LLD	2.11E-04	2.11E-04
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	<LLD	<LLD	<LLD	1.29E-04	1.29E-04
Mn-54	Ci	<LLD	<LLD	<LLD	2.90E-05	2.90E-05
Co-58	Ci	<LLD	<LLD	<LLD	9.74E-06	9.74E-06
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	9.99E-06	3.78E-06	1.55E-05	1.43E-04	1.71E-04
Zn-65	Ci	<LLD	<LLD	<LLD	3.61E-05	3.61E-05
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	3.69e-7	<LLD	<LLD	2.05E-06	2.05E-06
Ba-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	1.04E-05	3.78E-06	1.55E-05	5.60E-04	5.88E-04
4. Tritium						
Total for period	Ci	9.10E-01	5.23E-01	7.73E-01	8.93E-01	3.10E+00

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EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013

UNITS 2/3 REACTOR BUILDING VENT

GASEOUS EFFLUENTS

DOCKET NUMBERS: 50-237/50-249

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MIXED-MODE RELEASES

BATCH MODE

Nuclides Released	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	TOTAL
1. Fission and Activation Gases						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-133	Ci					
Xe-133m	Ci					
Xe-135	Ci					
Xe-135m	Ci					
Xe-138	Ci					
Total for period	Ci	None*	None*	None*	None*	None*
2. Iodines						
I-131	Ci					
I-133	Ci					
I-135	Ci					
Total for period	Ci	None*	None*	None*	None*	None*
3. Particulates						
Fe-55	Ci					
Sr-89	Ci					
Sr-90	Ci					
Cr-51	Ci					
Mn-54	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Mo-99	Ci					
Ag-110m	Ci					
Cs-134	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	Ci					
Total for period	Ci	None*	None*	None*	None*	None*
4. Tritium						
Total for period	Ci	None*	None*	None*	None*	None*

* No batch releases via this release path

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EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013

UNITS 2/3 MAIN CHIMNEY
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GASEOUS EFFLUENTS
ELEVATED RELEASES CONTINUOUS MODE

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Nuclides Released	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	TOTAL
1. Fission and Activation Gases						
Ar-41	Ci	2.56E+00	1.74E+00	1.96E-01	2.21E-01	4.72E+00
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	1.93E+00	1.02E+00	1.24E-01	1.85E-01	3.26E+00
Kr-87	Ci	5.54E-01	1.37E+00	3.06E-01	2.51E-01	2.49E+00
Kr-88	Ci	2.28E+00	1.24E+00	1.80E-01	1.76E-01	3.88E+00
Xe-133	Ci	2.09E+00	1.43E+00	4.38E-01	5.16E-01	4.47E+00
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	6.93E-01	4.16E-01	2.69E-01	2.52E-01	1.63E+00
Xe-135m	Ci	1.62E+00	1.70E+00	1.83E+00	1.74E+00	6.90E+00
Xe-138	Ci	6.46E+00	6.87E+00	7.43E+00	6.71E+00	2.75E+01
Total for period	Ci	1.82E+01	1.58E+01	1.08E+01	1.01E+01	5.48E+01
2. Iodines						
I-131	Ci	1.43E-04	2.93E-04	2.85E-04	1.87E-04	9.08E-04
I-133	Ci	9.48E-04	1.41E-03	1.71E-03	9.90E-04	5.06E-03
I-135	Ci	<LLD	5.41E-04	1.20E-03	9.94E-05	1.84E-03
Total for period	Ci	1.09E-03	2.24E-03	3.20E-03	1.28E-03	7.81E-03
3. Particulates						
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	7.28E-05	3.29E-05	7.62E-05	5.58E-05	2.38E-04
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	1.24E-05	1.98E-05	4.33E-05	6.95E-05	1.45E-04
Co-58	Ci	1.36E-05	2.51E-05	6.86E-05	3.25E-05	1.40E-05
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	1.94E-04	1.32E-04	2.67E-04	2.19E-04	8.13E-04
Zn-65	Ci	8.90E-05	6.07E-05	2.97E-04	2.12E-04	6.59E-04
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	3.20E-06	1.29E-05	1.19E-05	<LLD	2.79E-05
Sn-113	Ci	<LLD	<LLD	2.72E-06	<LLD	2.72E-06
Sn-117m	Ci	<LLD	<LLD	1.33E-05	<LLD	1.33E-05
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-140	Ci	8.53E-05	1.37E-04	2.58E-04	8.68E-05	5.67E-04
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	4.71E-04	4.20E-04	1.04E-03	6.75E-04	2.60E-03
4. Tritium						
Total for period	Ci	7.72E+00	4.85E+00	4.37E+00	4.20E+00	2.11E+01
5. Gross Alpha						
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
6. Carbon-14						
Total for period	Ci	7.58E+00	7.46E+00	8.54E+00	6.72E+00	3.03E+01

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2013

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013

UNITS 2/3 MAIN CHIMNEY

GASEOUS EFFLUENTS

DOCKET NUMBERS: 50-237/50-249

XX

ELEVATED RELEASES

BATCH MODE

Nuclides Released	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	TOTAL
1. Fission and Activation Gases						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-133	Ci					
Xe-133m	Ci					
Xe-135	Ci					
Xe-135m	Ci					
Xe-138	Ci					
Total for period	Ci	None*	None*	None*	None*	None*
2. Iodines						
I-131	Ci					
I-133	Ci					
I-135	Ci					
Total for period	Ci	None*	None*	None*	None*	None*
3. Particulates						
Fe-55	Ci					
Sr-89	Ci					
Sr-90	Ci					
Cr-51	Ci					
Mn-54	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Mo-99	Ci					
Ag-110m	Ci					
Cs-134	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	Ci					
Total for period	Ci	None*	None*	None*	None*	None*
4. Tritium						
Total for period	Ci	None*	None*	None*	None*	None*
5. Gross Alpha						
Total for period	Ci	None*	None*	None*	None*	None*
6. Carbon-14						
Total for period	Ci	None*	None*	None*	None*	None*

* No batch releases via this effluent path

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2013

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013

CHEMICAL CLEANING BUILDING

GASEOUS EFFLUENTS

DOCKET NUMBERS: 50-010

XX

MIXED-MODE RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	TOTAL
1. Fission and Activation Gases						
Ar-41	Ci	N/A	N/A	N/A	N/A	N/A
Kr-85	Ci	N/A	N/A	N/A	N/A	N/A
Kr-85m	Ci	N/A	N/A	N/A	N/A	N/A
Kr-87	Ci	N/A	N/A	N/A	N/A	N/A
Kr-88	Ci	N/A	N/A	N/A	N/A	N/A
Xe-133	Ci	N/A	N/A	N/A	N/A	N/A
Xe-133m	Ci	N/A	N/A	N/A	N/A	N/A
Xe-135	Ci	N/A	N/A	N/A	N/A	N/A
Xe-135m	Ci	N/A	N/A	N/A	N/A	N/A
Xe-138	Ci	N/A	N/A	N/A	N/A	N/A
Total for period	Ci	None*	None*	None*	None*	None*
2. Iodines						
I-131	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
3. Particulates						
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	8.07E-07	3.19E-07	3.13E-07	2.23E-06	3.67E-06
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	8.07E-07	3.19E-07	3.13E-07	2.23E-06	3.67E-06
4. Tritium						
Total for period	Ci	None*	None*	None*	None*	None*

* Analysis not required per Dresden Station ODCM

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2013

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013

CHEMICAL CLEANING BUILDING

GASEOUS EFFLUENTS

DOCKET NUMBERS: 50-010

XX

MIXED-MODE RELEASES **BATCH MODE**

Nuclides Released	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	TOTAL
1. Fission and Activation Gases						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-133	Ci					
Xe-133m	Ci					
Xe-135	Ci					
Xe-135m	Ci					
Xe-138	Ci					
Total for period	Ci	None*	None*	None*	None*	None*
2. Iodines						
I-131	Ci					
I-133	Ci					
I-135	Ci					
Total for period	Ci	None*	None*	None*	None*	None*
3. Particulates						
Fe-55	Ci					
Sr-89	Ci					
Sr-90	Ci					
Cr-51	Ci					
Mn-54	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Mo-99	Ci					
Ag-110m	Ci					
Cs-134	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	Ci					
Total for period	Ci	None*	None*	None*	None*	None*
4. Tritium						
Total for period	Ci	None*	None*	None*	None*	None*

* No batch releases via this effluent path

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2013

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013

LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

DOCKET NUMBERS: 50-010/50-237/50-249

Units	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Est. Total Error, %
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A. Fission and activation products

1. Total release (not including H-3, gases, alpha)	Ci	<LLD	<LLD	<LLD	<LLD	1.95E+01
2. Average diluted concentration during period	$\mu\text{Ci}/\text{m}^3$	<LLD	<LLD	<LLD	<LLD	
3. Percent of applicable dose limit	Organ	<LLD	<LLD	<LLD	<LLD	
	WB	<LLD	<LLD	<LLD	<LLD	

B. Tritium

1. Total release	Ci	<LLD	1.02E-03	1.03E-03	1.28E-03	2.37E+00
2. Average diluted concentration during period	$\mu\text{Ci}/\text{m}^3$	<LLD	1.44E-13	1.45E-13	1.80E-13	
3. Percent of release concentration limit (3.0E-03)	%	N/A	4.80E-09	4.83E-09	6.00E-09	

C. Dissolved and entrained gases

1. Total release	Ci	<LLD	<LLD	<LLD	<LLD	2.03E+01
2. Average diluted concentration during period	$\mu\text{Ci}/\text{m}^3$	<LLD	<LLD	<LLD	<LLD	
3. Percent of release concentration limit (2.0E-04)	%	N/A	N/A	N/A	N/A	

D. Gross alpha activity

1. Total release	Ci	<LLD	<LLD	<LLD	<LLD	2.00E+01
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E. Volume of waste released (prior to dilution)	Liters	0.00e+00	5.31E+06	5.38E+06	5.54E+06	
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F. Volume of dilution water used during period	Liters	0.00e+00	7.10E+12	7.10E+12	7.10E+12	
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DRESDEN NUCLEAR POWER STATION
 2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
 January through December 2013

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013

LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

DOCKET NUMBERS: 50-010/50-237/50-249

TABLE OF LOWER LIMITS OF DETECTABILITY
 FOR LIQUID EFFLUENTS

1.	FISSION/ACTIVATION GASES	μCi/ml
	Kr-87	1.00E-05
	Kr-88	1.00E-05
	Xe-133	1.00E-05
	Xe-133m	1.00E-05
	Xe-135	1.00E-05
	Xe-138	1.00E-05
2.	IODINES	μCi/ml
	I-131	1.00E-06
3.	PARTICULATES	μCi/ml
	Fe-55	1.00E-06
	Sr-89	5.00E-08
	Sr-90	5.00E-08
	Mn-54	5.00E-07
	Co-58	5.00E-07
	Fe-59	5.00E-07
	Co-60	5.00E-07
	Zn-65	5.00E-07
	Mo-99	5.00E-07
	Cs-134	5.00E-07
	Cs-137	5.00E-07
	Ce-141	5.00E-07
	Ce-144	5.00E-06
4.	OTHER	μCi/ml
	H-3	1.00E-05
	Gross Alpha	1.00E-07

The above values are the ODCM-required LLDs. The actual analyses always met the required LLDs.

DRESDEN NUCLEAR POWER STATION
 2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
 January through December 2013

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013 (Cont.)

UNITS 2/3 RADWASTE LIQUID EFFLUENTS

DOCKET NUMBERS: 50-237/50-249

BATCH MODE

	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Total
Fe-55	Ci					
Sr-89	Ci					
Sr-90	Ci					
I-131	Ci					
I-133	Ci					
I-135	Ci					
Cr-51	Ci					
Mn-54	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Zr-95	Ci					
Mo-99	Ci					
Tc-99m	Ci					
Ru-103	Ci					
Ag-110m	Ci					
Sb-125	Ci					
Cs-134	Ci					
Cs-136	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Total	Ci	None*	None*	None*	None*	None*

H-3	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-133	Ci					
Xe-133m	Ci					
Xe-135	Ci					
Xe-138	Ci					
Total	Ci	None*	None*	None*	None*	None*

* No batch releases via this effluent path

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2013

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013 (Cont.)

UNITS 2/3 RADWASTE LIQUID EFFLUENTS

DOCKET NUMBERS: 50-237/50-249

CONTINUOUS MODE

	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Total
Fe-55	Ci					
Sr-89	Ci					
Sr-90	Ci					
I-131	Ci					
I-133	Ci					
I-135	Ci					
Cr-51	Ci					
Mn-54	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Zr-95	Ci					
Mo-99	Ci					
Tc-99m	Ci					
Ru-103	Ci					
Ag-110m	Ci					
Sb-124	Ci					
Cs-134	Ci					
Cs-136	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Total	Ci	None*	None*	None*	None*	None*

H-3	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-133	Ci					
Xe-133m	Ci					
Xe-135	Ci					
Xe-138	Ci					
Total	Ci	None*	None*	None*	None*	None*

* No continuous releases via this effluent path

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2013

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013 (Cont.)

UNITS 2/3 CONTAINMENT COOLING SERVICE WATER

DOCKET NUMBERS: 50-237/50-249

<u>BATCH MODE</u>						
	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Total
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-131	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Tc-99m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ru-103	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-124	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-136	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
H-3	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

DRESDEN NUCLEAR POWER STATION
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EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013 (Cont.)

UNITS 2/3 CONTAINMENT COOLING SERVICE WATER

DOCKET NUMBERS: 50-237/50-249

CONTINUOUS MODE

Unit		1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Total
Fe-55	Ci					
Sr-89	Ci					
Sr-90	Ci					
I-131	Ci					
I-133	Ci					
I-135	Ci					
Cr-51	Ci					
Mn-54	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Zr-95	Ci					
Mo-99	Ci					
Tc-99m	Ci					
Ru-103	Ci					
Ag-110m	Ci					
Sb-124	Ci					
Cs-134	Ci					
Cs-136	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Total	Ci	None*	None*	None*	None*	None*

H-3	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-133	Ci					
Xe-135	Ci					
Xe-138	Ci					
Total	Ci	None*	None*	None*	None*	None*

* No continuous releases via this effluent path

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2013

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (Not irradiated fuel)

1. Type of Waste	Unit	12-month Period	Est. Total Error, %
a. Spent resins, filter sludges / filters, evaporator bottoms, etc.	m ³	5.80E+01	+/- 2.50E+01
	Ci	1.24E+02	
b. Dry compressible waste, contaminated equipment, etc.	m ³	1.02E+03	+/- 2.50E+01
	Ci	3.57E+00	
c. Irradiated components, control rods, etc.	m ³	0.00E+00	N/A
	Ci	0.00E+00	
d. Other (describe) - None	m ³	0.00E+00	N/A
	Ci	0.00E+00	

2. Estimate of Major (i.e., ≥1%) Nuclide Composition (by type of waste)

a. Spent resins, filters / filter sludges, evaporator bottoms, etc.

	<u>Percent %</u>	<u>Curies</u>
Fe-55	46.6	5.76E+01
Co-60	39.4	4.87E+01
Mn-54	6.8	8.38E+00
Zn-65	3.4	4.19E+00
Co-58	1.5	1.83E+00

Shipment type: LSA, Type A, Type B
Solidification agent or absorbent: None

b. Dry compressible waste, contaminated equipment, etc.

	<u>Percent %</u>	<u>Curies</u>
Co-60	67.1	2.39E+00
Mn-54	16.0	5.69E-01
Fe-55	9.6	3.42E-01
Zn-65	4.7	1.67E-01

Shipment type: LSA
Solidification agent or absorbent: None

c. Irradiated components, control rods, etc.

	<u>Percent %</u>	<u>Curies</u>
NONE	0.00E+00	0.00E+00

d. Other - Contaminated Oil, Combined Packages, Pump Impeller

	<u>Percent %</u>	<u>Curies</u>
NONE	0.00E+00	0.00E+00

3. Solid Waste Disposition

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
23	Motor freight (exclusive use only)	Energy Solutions - Bear Creek Road, Oak Ridge, TN
16	Motor freight (exclusive use only)	Energy Solutions - Clive, UT

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2013

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2013 (Cont.)

B. IRRADIATED FUEL SHIPMENTS (Disposition)

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
None	(NA)	(NA)

C. CHANGES TO THE PROCESS CONTROL PROGRAM (PCP)

No changes were made to the DNPS radioactive liquid, gaseous, or solid waste treatment systems in 2013.

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

RADIOLOGICAL IMPACT ON MAN

DOCKET NUMBERS: 50-010/50-237/50-249

1. Liquid Dose to a Member of the Public for 2013
Total Body: 1.22E-08 mrem
Organ: 1.22E-08 mrem
2. Gaseous Dose to a Member of the Public for 2013
Total Body: 2.19E-02 mrem
Skin: 5.35E-03 mrem
Organ (Particulate/Iodine): 9.22E-02 mrem
3. Direct Radiation Dose to a Member of the Public for 2013
Total Body : 8.76E+00 mrem which is 35.1 % of 40CFR190 Limit of 25 mrem/year (Whole Body and Organ).
Thyroid dose: 2.30e-2 mrem which is 0.03 % of 40CFR190 Limit (75 mrem).
4. Total Body Doses to the Population and Average Doses to Individuals in the Population from All Receiving-Water-Related-Pathways: Not applicable for DNPS. No downstream drinking water pathway exist within the specified distance of 10 kilometers (6.2miles).
5. Total Body Doses to the Population and Average Doses to Individuals in the Population from Gaseous Effluents to a Distance of 50 Miles: Not applicable for DNPS.
6. Doses From Liquid and Gaseous Effluent to Members of the Public Due to Their Activities Inside the Site Boundary for the Report Period: Not applicable for DNPS. Any member of the public that is onsite for a significant period will be issued a Optical Stimulated Luminescent Dosimeter (OSLD).
7. Liquid and Gaseous Effluent Radiation Monitors and Instrumentation Unavailability for the Period Beyond the Requirements of the ODCM. Including Sampling Deviation:
On August 19, 2013 at 08:48, ODCM 12.2.2 conditions A and H were entered because the Unit 2/3 Chimney SPING Mid and High Range noble gas monitors were inoperable for scheduled planned maintenance. The Mid and High Range noble gas channels remained inoperable until September 11, 2013 at 09:24. Alternate monitoring in accordance with the ODCM requirements was implemented. This alternate monitoring provided compensation for the inoperable Mid and High Range noble gas channels. The Low Range noble gas channels remained on scale at all times during the alternate monitoring period. This event was reported to the NRC on September 23, 2013 as required when the channels are inoperable greater than 21 days.
8. 40CFR190 / 10CFR72 Compliance
The General Electric Hitachi Nuclear Energy Morris Operation (GE-Hitachi Morris Operation) facility is physically located near Dresden Station and, in addition to evolutions performed at Dresden station, is considered in the evaluation of the uranium fuel cycle on members of the public in the general environment for 40CFR190 compliance.

Dresden decommissioning activities (Unit 1) and operations (Units 2 and 3) resulted in a maximum 9.22E-02 mrem organ dose and 8.78E+00 mrem total body dose. Radiological Environmental Monitoring Program (REMP) direct radiation monitoring at or near the site boundary demonstrates that total body dose calculations are conservative.

No effluents were released from the Dresden Independent Spent Fuel Storage Installations (ISFSIs) during 2013. REMP direct radiation monitoring at or near the site boundary demonstrates that the ISFSIs do not result in measurable dose to the public.

Per the 2013 GE-Hitachi Morris Operation 10CFR72.44(d)(3) report, maximum dose at their site boundary from direct radiation exposure was 4.66E-01 mrem and maximum organ dose was 1.47E-02 mrem for 2013.

DRESDEN NUCLEAR POWER STATION
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RADIOLOGICAL IMPACT ON MAN (Cont.)

DOCKET NUMBERS: 50-010/50-237/50-249

Maximum combined total body dose from Dresden and GE-Hitachi Morris Operation activities was 9.25+00 mrem during 2013, which was 37.0 % of the 40CFR190 limit of 25 mrem.

Maximum combined organ dose from Dresden and GE-Hitachi Morris Operation activities was 1.07E-01 mrem during 2013. This was 0.43 % of the 40CFR190 limit of 25 mrem to any organ. The combined thyroid dose was 2.30E-02 mrem. This was 0.03 % of the 40CFR190 limit of 75 mrem.

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

All Stabilities

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	6	10	12	11	16	15	11	10	2	0	93
NNE	0	4	6	6	10	6	9	2	3	2	0	48
NE	1	4	10	5	4	15	3	3	11	0	0	56
ENE	0	4	4	7	15	18	7	1	0	0	0	56
E	0	2	6	14	22	19	21	12	2	0	0	98
ESE	0	2	3	4	21	25	27	15	4	0	0	101
SE	0	1	4	0	4	12	16	13	10	0	0	60
SSE	0	4	3	10	20	18	24	18	15	0	0	112
S	0	3	7	13	28	14	16	21	25	9	4	140
SSW	0	3	14	5	7	14	17	13	22	3	2	100
SW	0	0	9	19	14	17	13	23	16	1	0	112
WSW	0	3	8	13	18	15	27	13	9	0	0	106
W	1	4	13	15	30	39	26	32	50	32	0	242
WNW	0	10	14	20	28	46	40	39	55	8	0	260
NW	0	11	13	20	41	42	52	39	24	0	0	242
NNW	0	4	4	10	34	32	52	49	32	1	0	218
Tot	2	65	128	173	307	348	365	304	288	58	6	2044

Hours of Calm 2
Hours of Variable Direction 4
Hours of Valid Data 2050
Hours of Missing Data 110
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	3	3	0	1	2	2	2	1	0	14
NNE	0	0	1	1	4	0	1	0	0	0	0	7
NE	0	0	1	1	2	1	0	0	0	0	0	5
ENE	0	0	0	0	3	1	0	0	0	0	0	4
E	0	0	0	1	1	3	3	0	0	0	0	8
ESE	0	0	0	0	0	3	1	2	0	0	0	6
SE	0	0	0	0	0	1	1	0	0	0	0	2
SSE	0	0	0	0	1	1	3	2	0	0	0	7
S	0	0	0	0	1	1	3	3	7	1	0	16
SSW	0	0	1	0	0	0	2	2	1	1	0	7
SW	0	0	0	4	0	1	0	1	0	0	0	6
WSW	0	0	1	2	1	0	7	3	3	0	0	17
W	0	0	1	0	4	7	4	4	7	9	0	36
WNW	0	0	0	0	7	5	4	7	15	1	0	39
NW	0	0	0	3	12	4	17	7	11	0	0	54
NNW	0	0	0	0	3	2	6	6	5	0	0	22
Tot	0	0	8	15	39	31	54	39	51	13	0	250

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 250
Hours of Missing Data 110
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	0	0	0	0	0	0	0	1	0	0	1
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	2	0	0	0	0	0	0	0	2
ENE	0	0	0	1	0	1	0	0	0	0	0	2
E	0	0	0	1	1	0	0	0	0	0	0	2
ESE	0	0	0	0	0	1	1	2	0	0	0	4
SE	0	0	0	0	0	0	1	0	0	0	0	1
SSE	0	0	0	0	0	2	2	0	0	0	0	4
S	0	0	0	0	0	0	0	0	1	1	0	2
SSW	0	0	1	0	0	0	0	0	1	0	0	2
SW	0	0	0	0	0	0	1	0	2	0	0	3
WSW	0	0	0	1	1	0	1	1	0	0	0	4
W	0	0	0	0	0	2	3	2	3	2	0	12
WNW	0	0	0	0	0	1	2	2	3	0	0	8
NW	0	0	0	0	3	1	1	2	0	0	0	7
NNW	0	0	0	0	0	1	1	1	2	0	0	5
Tot	0	0	1	5	5	9	13	10	13	3	0	59

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 59
Hours of Missing Data 110
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	0	0	1	0	0	1	0	2
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	1	0	1	0	0	2
ENE	0	0	0	0	0	0	1	0	0	0	0	1
E	0	0	0	0	2	0	0	0	0	0	0	2
ESE	0	0	0	0	1	1	2	2	0	0	0	6
SE	0	0	1	0	0	0	1	1	0	0	0	3
SSE	0	0	0	0	0	1	1	0	0	0	0	2
S	0	0	0	0	0	1	1	3	0	0	0	5
SSW	0	0	1	0	0	1	0	0	1	0	2	5
SW	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	1	1	0	0	0	0	0	2
W	0	0	1	0	0	4	0	2	5	2	0	14
WNW	0	0	2	0	2	5	3	2	3	0	0	17
NW	0	0	0	2	1	1	0	4	0	0	0	8
NNW	0	0	0	0	2	5	0	1	0	0	0	8
Tot	0	0	5	2	9	20	11	15	10	3	2	77

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 77
Hours of Missing Data 110
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	3	2	4	4	7	7	7	5	0	0	39
NNE	0	0	2	3	1	1	1	0	2	2	0	12
NE	0	0	0	1	1	4	1	1	3	0	0	11
ENE	0	0	1	0	3	11	5	1	0	0	0	21
E	0	0	2	2	7	9	15	11	2	0	0	48
ESE	0	0	1	0	5	8	16	5	3	0	0	38
SE	0	1	1	0	2	3	7	5	5	0	0	24
SSE	0	1	2	1	3	8	10	9	5	0	0	39
S	0	0	1	0	4	2	2	2	6	5	1	23
SSW	0	1	3	0	2	4	6	2	4	2	0	24
SW	0	0	1	0	3	7	3	8	8	1	0	31
WSW	0	0	1	3	0	4	5	8	6	0	0	27
W	0	0	0	2	10	8	14	11	27	15	0	87
WNW	0	1	2	3	9	20	18	13	27	4	0	97
NW	0	0	1	6	10	10	17	17	8	0	0	69
NNW	0	1	0	2	18	11	33	21	13	0	0	99
Tot	0	8	20	27	82	117	160	121	124	29	1	689

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 690
Hours of Missing Data 110
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	1	4	6	8	5	2	2	0	0	28
NNE	0	1	1	1	5	5	7	2	1	0	0	23
NE	0	1	6	1	1	10	1	2	7	0	0	29
ENE	0	0	3	6	9	5	1	0	0	0	0	24
E	0	0	1	4	6	7	3	1	0	0	0	22
ESE	0	0	2	1	11	12	7	4	1	0	0	38
SE	0	0	2	0	2	8	6	7	5	0	0	30
SSE	0	2	1	7	13	6	8	7	10	0	0	54
S	0	1	1	3	15	10	10	13	11	2	3	69
SSW	0	0	5	1	4	9	9	9	15	0	0	52
SW	0	0	5	3	6	5	9	14	6	0	0	48
WSW	0	1	1	4	7	10	12	1	0	0	0	36
W	1	2	4	9	16	18	5	13	8	4	0	80
WNW	0	3	6	10	10	15	13	15	7	3	0	82
NW	0	1	7	9	15	26	17	9	5	0	0	89
NNW	0	0	2	5	10	13	12	20	12	1	0	75
Tot	1	12	48	68	136	167	125	119	90	10	3	779

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 779
Hours of Missing Data 110
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	1	4	1	1	0	0	0	0	0	0	7
NNE	0	1	2	1	0	0	0	0	0	0	0	4
NE	1	2	2	0	0	0	0	0	0	0	0	5
ENE	0	1	0	0	0	0	0	0	0	0	0	1
E	0	0	1	4	3	0	0	0	0	0	0	8
ESE	0	2	0	3	4	0	0	0	0	0	0	9
SE	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	1	0	2	3	0	0	0	0	0	0	6
S	0	2	5	10	8	0	0	0	0	0	0	25
SSW	0	2	1	4	1	0	0	0	0	0	0	8
SW	0	0	3	7	5	4	0	0	0	0	0	19
WSW	0	2	2	2	8	0	2	0	0	0	0	16
W	0	1	6	3	0	0	0	0	0	0	0	10
WNW	0	2	3	7	0	0	0	0	0	0	0	12
NW	0	6	4	0	0	0	0	0	0	0	0	10
NNW	0	1	2	3	1	0	0	0	0	0	0	7
Tot	1	24	35	47	34	4	2	0	0	0	0	147

Hours of Calm 1
Hours of Variable Direction 1
Hours of Valid Data 149
Hours of Missing Data 110
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	2	0	0	0	0	0	0	0	0	0	2
NNE	0	2	0	0	0	0	0	0	0	0	0	2
NE	0	1	1	0	0	0	0	0	0	0	0	2
ENE	0	3	0	0	0	0	0	0	0	0	0	3
E	0	2	2	2	2	0	0	0	0	0	0	8
ESE	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	2	0	0	0	0	0	0	0	0	2
SW	0	0	0	5	0	0	0	0	0	0	0	5
WSW	0	0	3	1	0	0	0	0	0	0	0	4
W	0	1	1	1	0	0	0	0	0	0	0	3
WNW	0	4	1	0	0	0	0	0	0	0	0	5
NW	0	4	1	0	0	0	0	0	0	0	0	5
NNW	0	2	0	0	0	0	0	0	0	0	0	2
Tot	0	21	11	9	2	0	0	0	0	0	0	43

Hours of Calm 1
Hours of Variable Direction 2
Hours of Valid Data 46
Hours of Missing Data 110
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

All Stabilities

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	1	8	18	11	13	27	23	6	1	108
NNE	0	0	2	3	9	8	9	8	1	4	1	45
NE	0	1	2	2	6	4	11	5	6	10	0	47
ENE	0	4	4	9	10	9	11	9	5	1	0	62
E	0	1	4	5	15	13	15	21	20	3	0	97
ESE	0	1	3	2	4	15	20	28	20	5	0	98
SE	0	1	1	0	2	14	12	18	19	3	0	70
SSE	0	0	0	3	2	8	13	21	27	12	1	87
S	0	0	1	1	7	24	16	18	26	20	7	120
SSW	0	0	4	2	2	20	15	19	28	21	14	125
SW	0	0	2	7	11	18	20	10	27	14	6	115
WSW	0	1	3	1	17	9	12	16	40	7	1	107
W	0	2	1	5	15	28	26	32	36	35	26	206
WNW	0	0	2	7	17	41	33	36	51	52	34	273
NW	0	0	2	9	17	28	38	42	64	20	0	220
NNW	0	1	3	6	20	25	32	37	69	14	1	208
Tot	0	12	35	70	172	275	296	347	462	227	92	1988

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 1989
Hours of Missing Data 171
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	0	2	2	0	1	1	3	1	0	10
NNE	0	0	0	1	3	0	1	1	0	1	0	7
NE	0	0	0	0	1	2	1	0	0	0	0	4
ENE	0	0	0	1	3	1	0	0	0	0	0	5
E	0	0	0	0	1	0	4	2	1	0	0	8
ESE	0	0	0	0	0	1	2	1	2	0	0	6
SE	0	0	0	0	0	0	2	0	0	0	0	2
SSE	0	0	0	0	0	1	0	2	1	0	0	4
S	0	0	0	0	0	3	2	3	5	3	0	16
SSW	0	0	1	0	0	0	1	3	2	2	1	10
SW	0	0	0	3	1	0	1	0	1	0	0	6
WSW	0	0	0	0	2	0	0	6	5	2	0	15
W	0	0	0	2	2	4	4	4	4	5	4	29
WNW	0	0	0	0	3	8	5	1	8	15	7	47
NW	0	0	0	2	2	12	2	17	10	9	0	54
NNW	0	0	0	2	3	2	4	4	10	1	0	26
Tot	0	0	1	13	23	34	30	45	52	39	12	249

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 249
Hours of Missing Data 171
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	0	0	0	0	0	0	1	1	0	0	2
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	1	0	0	0	0	0	0	1
ENE	0	0	0	1	1	0	0	0	0	0	0	2
E	0	0	0	0	1	0	1	0	0	0	0	2
ESE	0	0	0	0	1	1	0	1	2	0	0	5
SE	0	0	0	0	0	0	0	1	0	0	0	1
SSE	0	0	0	0	0	0	4	0	0	0	0	4
S	0	0	0	0	0	0	0	0	0	2	0	2
SSW	0	0	0	0	0	0	0	0	0	1	0	1
SW	0	0	0	0	0	0	0	1	1	1	0	3
WSW	0	0	0	0	1	1	0	1	1	0	0	4
W	0	0	1	0	0	0	2	4	1	1	1	10
WNW	0	0	0	0	0	1	0	2	2	3	2	10
NW	0	0	0	0	1	1	1	2	2	0	0	7
NNW	0	0	0	0	0	0	1	0	3	0	0	4
Tot	0	0	1	1	6	4	9	13	13	8	3	58

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 58
Hours of Missing Data 171
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	0	1	1	1	0	0	1	4
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	1	0	1
ENE	0	0	0	0	0	0	0	2	0	0	0	2
E	0	0	0	0	0	2	0	0	0	0	0	2
ESE	0	0	0	0	0	0	2	0	3	0	0	5
SE	0	0	0	0	0	1	0	2	0	0	0	3
SSE	0	0	0	0	0	0	1	1	0	0	0	2
S	0	0	0	0	0	0	1	2	2	0	0	5
SSW	0	0	1	0	0	1	0	0	0	1	2	5
SW	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	1	0	0	0	0	0	0	1
W	0	0	0	0	0	0	5	0	3	3	2	13
WNW	0	0	0	1	0	2	3	3	3	3	1	16
NW	0	0	1	1	1	0	1	0	4	0	0	8
NNW	0	0	0	0	1	2	1	0	2	0	0	6
Tot	0	0	2	2	3	9	15	11	17	8	6	73

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 73
Hours of Missing Data 171
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction	Wind Speed Range (m/s)											Total
Sector	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	0	3	4	3	4	14	12	4	0	44
NNE	0	0	2	1	3	2	1	1	0	2	1	13
NE	0	0	0	2	2	1	3	1	1	3	0	13
ENE	0	0	0	0	1	3	6	4	5	0	0	19
E	0	0	1	1	4	4	6	14	17	3	0	50
ESE	0	0	2	0	1	3	11	13	6	3	0	39
SE	0	1	1	0	0	3	2	7	7	1	0	22
SSE	0	0	0	1	1	2	3	10	17	3	0	37
S	0	0	1	0	2	4	3	1	2	7	1	21
SSW	0	0	1	0	0	4	2	4	2	4	6	23
SW	0	0	1	1	2	5	8	3	8	5	3	36
WSW	0	0	2	0	3	0	2	3	12	4	1	27
W	0	0	0	0	1	7	3	9	15	19	14	68
WNW	0	0	1	0	4	6	12	22	19	26	17	107
NW	0	0	0	1	6	4	10	10	23	6	0	60
NNW	0	1	1	0	5	13	9	20	29	7	1	86
Tot	0	2	13	10	39	64	85	136	175	97	44	665

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 666
Hours of Missing Data 171
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	1	5	5	7	10	7	1	0	36
NNE	0	0	0	1	2	5	7	6	1	1	0	23
NE	0	0	0	0	1	1	7	4	5	6	0	24
ENE	0	0	0	5	5	5	5	3	0	1	0	24
E	0	0	2	2	6	6	3	4	2	0	0	25
ESE	0	0	0	0	2	4	4	13	7	2	0	32
SE	0	0	0	0	2	3	5	8	12	2	0	32
SSE	0	0	0	1	1	5	4	8	9	9	1	38
S	0	0	0	0	4	16	6	9	17	8	6	66
SSW	0	0	1	2	2	7	8	10	24	13	5	72
SW	0	0	0	3	5	5	4	3	16	8	3	47
WSW	0	1	0	1	3	2	6	5	18	0	0	36
W	0	2	0	1	3	11	10	15	13	7	5	67
WNW	0	0	1	4	6	14	11	8	19	5	7	75
NW	0	0	1	2	5	9	23	13	25	5	0	83
NNW	0	0	1	2	9	7	16	13	25	6	0	79
Tot	0	3	6	25	61	105	126	132	200	74	27	759

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 759
Hours of Missing Data 171
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	1	2	4	2	0	0	0	0	0	9
NNE	0	0	0	0	1	1	0	0	0	0	0	2
NE	0	0	1	0	1	0	0	0	0	0	0	2
ENE	0	3	1	1	0	0	0	0	0	0	0	5
E	0	0	0	2	0	1	0	1	0	0	0	4
ESE	0	1	1	0	0	6	1	0	0	0	0	9
SE	0	0	0	0	0	3	3	0	0	0	0	6
SSE	0	0	0	1	0	0	1	0	0	0	0	2
S	0	0	0	1	1	1	4	3	0	0	0	10
SSW	0	0	0	0	0	8	4	2	0	0	0	14
SW	0	0	1	0	2	7	7	2	1	0	0	20
WSW	0	0	0	0	5	3	4	1	4	1	0	18
W	0	0	0	2	4	3	2	0	0	0	0	11
WNW	0	0	0	1	3	7	2	0	0	0	0	13
NW	0	0	0	2	2	2	1	0	0	0	0	7
NNW	0	0	1	1	2	1	1	0	0	0	0	6
Tot	0	4	6	13	25	45	30	9	5	1	0	138

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 138
Hours of Missing Data 171
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0		>10.00
N	0	0	0	0	3	0	0	0	0	0	0	3
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	1	1	0	0	0	0	0	0	0	0	2
ENE	0	1	3	1	0	0	0	0	0	0	0	5
E	0	1	1	0	3	0	1	0	0	0	0	6
ESE	0	0	0	2	0	0	0	0	0	0	0	2
SE	0	0	0	0	0	4	0	0	0	0	0	4
SSE	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	1	1	0	1	0	0	0	3
WSW	0	0	1	0	2	3	0	0	0	0	0	6
W	0	0	0	0	5	3	0	0	0	0	0	8
WNW	0	0	0	1	1	3	0	0	0	0	0	5
NW	0	0	0	1	0	0	0	0	0	0	0	1
NNW	0	0	0	1	0	0	0	0	0	0	0	1
Tot	0	3	6	6	15	14	1	1	0	0	0	46

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 46
Hours of Missing Data 171
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

All Stabilities

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	5	7	11	19	20	44	18	4	128
NNE	0	1	2	5	5	4	6	12	12	2	5	54
NE	0	0	2	1	7	8	1	8	6	8	4	45
ENE	0	3	3	3	10	7	14	14	6	2	0	62
E	0	0	4	6	7	14	11	14	22	15	2	95
ESE	0	1	1	1	6	5	7	8	32	16	1	78
SE	0	2	2	2	0	4	16	19	35	13	4	97
SSE	0	1	0	0	0	4	10	10	38	20	15	98
S	0	0	0	3	3	7	12	12	17	22	23	99
SSW	0	0	1	3	4	4	9	25	34	27	41	148
SW	0	0	2	3	6	8	25	15	22	21	18	120
WSW	0	2	1	2	7	7	7	11	43	24	10	114
W	0	3	0	3	9	22	17	22	43	37	42	198
WNW	0	1	1	3	7	20	34	37	74	70	70	317
NW	0	0	1	5	13	21	21	46	61	36	10	214
NNW	0	1	5	4	11	18	27	32	78	41	8	225
Tot	0	15	25	49	102	164	236	305	567	372	257	2092

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 2093
Hours of Missing Data 67
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction	Wind Speed Range (m/s)											Total
Sector	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	1	0	1	0	0	0	0	0	2
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	1	1	0	0	0	2
ESE	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	1	0	1	0	2
W	0	0	0	0	0	0	1	1	1	2	0	5
WNW	0	0	0	0	1	2	1	1	2	5	6	18
NW	0	0	0	0	0	2	0	4	1	4	0	11
NNW	0	0	0	0	0	0	0	0	1	0	0	1
Tot	0	0	0	1	1	5	3	8	5	12	6	41

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 41
Hours of Missing Data 67
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 -. 2013

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	1	1	0	0	0	0	0	0	2
NNE	0	0	0	0	0	1	0	0	0	0	0	1
NE	0	0	0	0	1	1	0	0	0	0	0	2
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	2	0	0	2
ESE	0	0	0	0	0	0	2	1	1	0	0	4
SE	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	2	0	1	1	1	0	5
SSW	0	0	0	0	0	0	0	1	1	1	1	4
SW	0	0	0	0	0	0	2	0	0	0	0	2
WSW	0	0	0	0	0	0	0	0	3	1	0	4
W	0	0	0	0	0	2	0	1	0	2	0	5
WNW	0	0	0	0	0	0	3	0	3	6	6	18
NW	0	0	0	0	0	2	0	1	3	1	0	7
NNW	0	0	1	1	0	1	1	0	2	1	0	7
Tot	0	0	1	2	2	9	8	5	16	13	7	63

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 63
Hours of Missing Data 67
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	0	0	0	0	1	0	0	1
NNE	0	0	0	0	0	0	0	0	0	1	0	1
NE	0	0	0	0	0	1	0	0	0	0	0	1
ENE	0	0	0	0	3	0	1	0	0	0	0	4
E	0	0	0	0	1	0	1	1	0	0	0	3
ESE	0	0	0	0	0	0	1	0	1	0	0	2
SE	0	0	0	0	0	0	0	1	0	0	0	1
SSE	0	0	0	0	0	1	0	0	1	0	0	2
S	0	0	0	0	0	1	1	1	2	3	0	8
SSW	0	0	0	0	0	0	0	1	1	0	4	6
SW	0	0	0	0	0	0	0	0	1	1	0	2
WSW	0	0	0	0	0	0	0	2	5	1	0	8
W	0	0	0	0	1	1	1	2	3	3	1	12
WNW	0	0	0	0	0	1	0	0	6	3	6	16
NW	0	0	0	1	2	3	1	9	5	2	1	24
NNW	0	0	0	0	0	1	2	0	5	1	0	9
Tot	0	0	0	1	7	9	8	17	31	15	12	100

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 100
Hours of Missing Data 67
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0		>10.00
N	0	0	0	1	1	4	7	14	36	18	4	85
NNE	0	0	1	3	2	0	3	8	12	1	5	35
NE	0	0	1	0	4	3	1	7	6	8	4	34
ENE	0	0	0	2	5	6	11	13	6	2	0	45
E	0	0	0	3	2	10	7	8	19	15	2	66
ESE	0	0	0	1	3	2	2	5	19	10	1	43
SE	0	1	2	1	0	2	8	6	17	4	2	43
SSE	0	0	0	0	0	2	8	8	27	16	12	73
S	0	0	0	1	3	4	6	5	10	1	14	44
SSW	0	0	0	2	1	3	2	5	13	5	18	49
SW	0	0	2	2	4	5	11	6	17	8	7	62
WSW	0	0	0	2	6	2	2	3	14	15	7	51
W	0	0	0	1	1	8	8	9	24	29	38	118
WNW	0	0	0	1	4	12	18	27	54	56	52	224
NW	0	0	1	3	7	10	12	22	46	26	9	136
NNW	0	0	3	2	7	10	16	25	63	38	8	172
Tot	0	1	10	25	50	83	122	171	383	252	183	1280

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 1281
Hours of Missing Data 67
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013.

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	3	2	6	12	6	7	0	0	36
NNE	0	0	1	2	2	2	3	4	0	0	0	14
NE	0	0	0	0	2	2	0	1	0	0	0	5
ENE	0	0	1	0	2	1	2	1	0	0	0	7
E	0	0	3	3	1	3	1	3	1	0	0	15
ESE	0	0	1	0	2	1	2	1	9	5	0	21
SE	0	1	0	0	0	1	5	8	15	9	2	41
SSE	0	1	0	0	0	1	0	2	9	4	3	20
S	0	0	0	2	0	0	4	4	4	16	9	39
SSW	0	0	1	0	3	0	6	14	17	16	18	75
SW	0	0	0	0	2	2	10	5	2	12	11	44
WSW	0	1	1	0	1	2	0	4	15	6	3	33
W	0	0	0	2	5	6	4	7	14	1	3	42
WNW	0	1	1	2	1	4	11	7	7	0	0	34
NW	0	0	0	1	4	3	4	8	5	3	0	28
NNW	0	1	1	1	2	4	8	7	7	1	0	32
Tot	0	5	10	16	29	38	72	82	112	73	49	486

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 486
Hours of Missing Data 67
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	0	0	0	2	1	0	0	0	0	0	3
NNE	0	1	0	0	1	1	0	0	0	0	0	3
NE	0	0	1	0	0	0	0	0	0	0	0	1
ENE	0	3	1	0	0	0	0	0	0	0	0	4
E	0	0	1	0	3	0	1	0	0	0	0	5
ESE	0	0	0	0	1	2	0	1	1	1	0	6
SE	0	0	0	1	0	1	3	4	3	0	0	12
SSE	0	0	0	0	0	0	2	0	1	0	0	3
S	0	0	0	0	0	0	1	1	0	1	0	3
SSW	0	0	0	1	0	1	1	4	1	4	0	12
SW	0	0	0	0	0	1	2	4	2	0	0	9
WSW	0	1	0	0	0	3	5	1	6	0	0	16
W	0	3	0	0	0	2	1	1	1	0	0	8
WNW	0	0	0	0	1	1	1	1	2	0	0	6
NW	0	0	0	0	0	1	4	2	1	0	0	8
NNW	0	0	0	0	2	2	0	0	0	0	0	4
Tot	0	8	3	2	10	16	21	19	18	6	0	103

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 103
Hours of Missing Data 67
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2013 - 2013

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	1	0	0	0	0	0	0	1
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	1	1	0	0	0	0	0	0	0	2
E	0	0	0	0	0	1	0	1	0	0	0	2
ESE	0	1	0	0	0	0	0	0	1	0	0	2
SE	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	1	1	0	2
SW	0	0	0	1	0	0	0	0	0	0	0	1
WSW	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	2	3	2	1	0	0	0	8
WNW	0	0	0	0	0	0	0	1	0	0	0	1
NW	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0
Tot	0	1	1	2	3	4	2	3	2	1	0	19

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 19
Hours of Missing Data 67
Hours in Period 2160

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

All Stabilities

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	8	11	9	30	15	16	5	2	0	0	96
NNE	1	4	9	6	36	33	17	20	11	0	0	137
NE	0	2	13	9	49	54	43	8	2	0	0	180
ENE	0	5	15	20	74	20	5	2	0	0	0	141
E	0	7	19	21	60	45	14	3	3	0	0	172
ESE	0	4	9	11	25	17	10	5	2	0	0	83
SE	1	7	7	5	22	33	22	10	7	0	0	114
SSE	0	1	7	11	47	29	24	24	18	5	1	167
S	1	6	8	13	28	22	25	38	23	14	5	183
SSW	0	3	8	16	18	29	23	22	37	10	1	167
SW	0	5	13	15	29	13	16	12	5	5	0	113
WSW	1	6	10	10	26	31	14	10	14	10	1	133
W	0	5	9	10	19	24	18	13	22	2	0	122
WNW	0	2	6	11	26	22	17	5	2	0	0	91
NW	0	1	9	14	21	15	22	18	9	2	0	111
NNW	0	7	10	14	20	23	12	7	4	0	0	97
Tot	4	73	163	195	530	425	298	202	161	48	8	2107

Hours of Calm 4
Hours of Variable Direction 6
Hours of Valid Data 2117
Hours of Missing Data 67
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	2	1	2	5	1	0	1	0	0	12
NNE	0	1	0	0	4	2	4	3	1	0	0	15
NE	0	1	0	1	8	21	16	4	0	0	0	51
ENE	0	0	1	3	13	3	1	0	0	0	0	21
E	0	0	2	3	2	11	2	0	1	0	0	21
ESE	0	0	1	0	2	1	1	0	2	0	0	7
SE	0	0	0	0	5	2	4	5	2	0	0	18
SSE	0	0	1	2	5	5	5	2	4	0	0	24
S	0	0	0	1	2	2	1	2	1	0	0	9
SSW	0	0	0	2	2	0	3	2	10	2	0	21
SW	0	0	0	0	4	2	4	2	2	0	0	14
WSW	0	0	1	3	9	13	0	0	0	0	0	26
W	0	0	2	3	4	0	6	2	5	0	0	22
WNW	0	0	0	1	3	5	16	4	2	0	0	31
NW	0	0	1	3	4	4	4	17	8	0	0	41
NNW	0	1	1	1	2	4	1	1	0	0	0	11
Tot	0	3	12	24	71	80	69	44	39	2	0	344

Hours of Calm 0
Hours of Variable Direction 3
Hours of Valid Data 347
Hours of Missing Data 67
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	0	0	0	0	0	1	1	0	0	0	2
NNE	0	0	0	0	0	0	0	1	0	0	0	1
NE	0	0	0	0	1	0	1	0	0	0	0	2
ENE	0	0	0	0	0	1	0	0	0	0	0	1
E	0	0	1	0	2	2	0	0	0	0	0	5
ESE	0	0	0	1	1	2	0	0	0	0	0	4
SE	0	0	1	0	1	1	0	0	0	0	0	3
SSE	0	0	0	0	2	0	1	0	0	0	0	3
S	0	0	0	0	0	0	0	1	2	1	0	4
SSW	0	0	0	0	0	0	1	1	4	0	0	6
SW	0	0	0	0	0	0	0	0	0	3	0	3
WSW	0	0	2	0	1	1	1	0	1	1	0	7
W	0	0	0	1	0	0	0	1	1	0	0	3
WNW	0	0	0	0	1	2	0	0	0	0	0	3
NW	0	0	0	0	0	0	1	0	0	0	0	1
NNW	0	0	0	0	1	0	0	0	0	0	0	1
Tot	0	0	4	2	10	9	6	5	8	5	0	49

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 50
Hours of Missing Data 67
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	0	0	1	0	0	0	0	1
NNE	0	0	0	0	0	0	1	2	2	0	0	5
NE	0	0	1	0	1	3	1	0	0	0	0	6
ENE	0	0	0	0	1	0	0	0	0	0	0	1
E	0	0	0	0	2	1	1	0	0	0	0	4
ESE	0	0	0	0	0	0	1	0	0	0	0	1
SE	0	0	0	0	1	3	0	0	0	0	0	4
SSE	0	0	0	0	0	1	0	0	0	0	0	1
S	0	0	0	0	0	0	1	1	1	0	0	3
SSW	0	0	0	1	0	0	1	0	1	0	0	3
SW	0	0	0	0	1	0	1	2	0	0	0	4
WSW	0	0	0	0	1	0	0	0	1	0	0	2
W	0	1	0	0	1	0	0	1	1	0	0	4
WNW	0	0	0	0	0	1	0	0	0	0	0	1
NW	0	0	0	0	1	0	1	0	0	0	0	2
NNW	0	0	0	0	0	0	0	0	0	0	0	0
Tot	0	1	1	1	9	9	9	6	6	0	0	42

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 42
Hours of Missing Data 67
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	1	1	0	4	5	4	3	0	0	0	18
NNE	0	0	2	2	11	4	4	6	4	0	0	33
NE	0	0	0	2	12	15	12	4	1	0	0	46
ENE	0	0	1	3	21	11	1	0	0	0	0	37
E	0	0	2	5	14	10	6	3	2	0	0	42
ESE	0	0	1	1	4	3	1	2	0	0	0	12
SE	0	0	0	0	1	10	2	2	2	0	0	17
SSE	0	0	0	1	6	8	6	8	5	4	1	39
S	0	2	2	2	1	7	7	12	7	6	3	49
SSW	0	1	0	2	4	8	5	15	18	1	0	54
SW	0	1	2	5	2	3	5	6	1	1	0	26
WSW	0	1	1	3	4	7	6	4	7	8	1	42
W	0	0	0	2	3	7	6	6	13	2	0	39
WNW	0	0	0	0	2	3	0	0	0	0	0	5
NW	0	0	0	2	4	2	6	0	1	2	0	17
NNW	0	0	0	3	5	4	2	2	2	0	0	18
Tot	0	6	12	33	98	107	73	73	63	24	5	494

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 495
Hours of Missing Data 67
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	3	4	6	21	4	9	1	1	0	0	49
NNE	0	3	6	3	19	27	8	8	4	0	0	78
NE	0	1	8	6	27	14	13	0	1	0	0	70
ENE	0	4	11	13	38	5	3	2	0	0	0	76
E	0	5	9	11	38	19	5	0	0	0	0	87
ESE	0	1	2	6	11	7	7	2	0	0	0	36
SE	0	2	3	2	9	11	14	2	1	0	0	44
SSE	0	1	2	5	28	14	12	14	9	1	0	86
S	0	1	3	5	20	10	14	19	12	6	2	92
SSW	0	1	3	10	7	15	10	4	4	7	1	62
SW	0	0	3	5	12	8	6	2	2	1	0	39
WSW	1	2	3	1	10	10	7	6	4	1	0	45
W	0	2	2	4	10	16	5	3	2	0	0	44
WNW	0	1	2	5	15	11	1	1	0	0	0	36
NW	0	0	1	4	12	9	10	1	0	0	0	37
NNW	0	4	3	5	7	12	9	4	2	0	0	46
Tot	1	31	65	91	284	192	133	69	42	16	3	927

Hours of Calm 3
Hours of Variable Direction 0
Hours of Valid Data 930
Hours of Missing Data 67
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	3	1	1	3	1	0	0	0	0	0	9
NNE	1	0	1	1	2	0	0	0	0	0	0	5
NE	0	0	4	0	0	1	0	0	0	0	0	5
ENE	0	1	2	1	1	0	0	0	0	0	0	5
E	0	2	5	1	1	2	0	0	0	0	0	11
ESE	0	1	3	3	7	4	0	1	0	0	0	19
SE	0	4	3	3	5	6	2	1	2	0	0	26
SSE	0	0	3	3	6	1	0	0	0	0	0	13
S	0	2	3	4	5	3	2	3	0	1	0	23
SSW	0	1	4	1	5	6	3	0	0	0	0	20
SW	0	4	6	4	10	0	0	0	0	0	0	24
WSW	0	3	1	3	1	0	0	0	1	0	0	9
W	0	1	4	0	1	1	1	0	0	0	0	8
WNW	0	1	3	4	5	0	0	0	0	0	0	13
NW	0	1	5	4	0	0	0	0	0	0	0	10
NNW	0	2	4	4	5	3	0	0	0	0	0	18
Tot	1	26	52	37	57	28	8	5	3	1	0	218

Hours of Calm 1
Hours of Variable Direction 1
Hours of Valid Data 220
Hours of Missing Data 67
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	1	3	1	0	0	0	0	0	0	0	5
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	1	1	0	0	0	0	0	0	2
ESE	0	2	2	0	0	0	0	0	0	0	0	4
SE	1	1	0	0	0	0	0	0	0	0	0	2
SSE	0	0	1	0	0	0	0	0	0	0	0	1
S	1	1	0	1	0	0	0	0	0	0	0	3
SSW	0	0	1	0	0	0	0	0	0	0	0	1
SW	0	0	2	1	0	0	0	0	0	0	0	3
WSW	0	0	2	0	0	0	0	0	0	0	0	2
W	0	1	1	0	0	0	0	0	0	0	0	2
WNW	0	0	1	1	0	0	0	0	0	0	0	2
NW	0	0	2	1	0	0	0	0	0	0	0	3
NNW	0	0	2	1	0	0	0	0	0	0	0	3
Tot	2	6	17	7	1	0	0	0	0	0	0	33

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 33
Hours of Missing Data 67
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

All Stabilities

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	1	4	5	21	21	21	11	12	0	1	97
NNE	0	1	5	3	13	25	30	25	27	5	0	134
NE	0	0	5	7	26	33	43	39	20	3	0	176
ENE	0	1	6	6	41	54	21	4	4	0	0	137
E	0	0	3	8	33	41	59	27	13	1	0	185
ESE	0	1	5	4	14	17	19	14	19	2	1	96
SE	0	1	2	3	10	19	27	33	34	3	0	132
SSE	0	0	2	5	20	34	33	21	31	11	5	162
S	0	1	0	8	18	16	24	26	53	27	23	196
SSW	0	1	2	2	15	13	23	32	46	30	9	173
SW	0	2	3	3	17	18	11	17	26	9	8	114
WSW	0	2	2	6	15	31	21	14	19	5	16	131
W	0	1	4	3	14	24	17	21	26	23	10	143
WNW	0	1	2	2	10	13	28	18	19	6	0	99
NW	0	0	2	1	12	10	25	21	35	2	6	114
NNW	0	0	4	3	12	18	19	13	15	2	1	87
Tot	0	13	51	69	291	387	421	336	399	129	80	2176

Hours of Calm 0
Hours of Variable Direction 6
Hours of Valid Data 2182
Hours of Missing Data 2
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	1	2	2	1	2	5	1	1	0	0	15
NNE	0	0	1	0	1	3	1	4	2	0	0	12
NE	0	0	0	0	6	4	12	14	7	0	0	43
ENE	0	0	0	2	5	16	4	3	0	0	0	30
E	0	0	0	2	5	4	8	2	0	0	0	21
ESE	0	0	1	0	1	1	1	0	1	1	0	6
SE	0	0	0	0	2	3	1	6	14	0	0	26
SSE	0	0	0	1	4	5	6	2	3	2	0	23
S	0	0	0	0	4	0	2	1	4	2	0	13
SSW	0	0	0	1	3	0	0	3	2	11	1	21
SW	0	0	1	0	2	1	1	3	3	2	0	13
WSW	0	0	0	0	6	13	7	0	0	0	0	26
W	0	0	1	1	1	5	1	5	3	3	0	20
WNW	0	0	0	0	1	5	4	7	12	1	0	30
NW	0	0	0	1	4	3	8	6	20	2	3	47
NNW	0	0	1	1	3	3	1	1	3	0	0	13
Tot	0	1	7	11	49	68	62	58	75	24	4	359

Hours of Calm 0
Hours of Variable Direction 3
Hours of Valid Data 362
Hours of Missing Data 2
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	1	0	0	0	1	0	0	2
NNE	0	0	0	0	0	0	0	0	2	0	0	2
NE	0	0	0	0	0	0	1	0	0	0	0	1
ENE	0	0	0	0	0	1	1	0	0	0	0	2
E	0	0	0	1	1	2	1	0	0	0	0	5
ESE	0	0	0	0	1	2	1	1	0	0	0	5
SE	0	0	0	1	1	0	1	0	0	0	0	3
SSE	0	0	0	0	1	1	0	0	1	0	0	3
S	0	0	0	0	0	0	0	0	2	2	0	4
SSW	0	0	0	0	0	0	0	1	0	4	0	5
SW	0	0	0	0	0	0	0	0	1	0	3	4
WSW	0	0	0	2	1	0	1	0	1	1	1	7
W	0	0	0	0	1	0	0	0	0	1	0	2
WNW	0	0	0	0	0	1	3	0	0	1	0	5
NW	0	0	0	0	0	0	0	0	1	0	0	1
NNW	0	0	0	0	0	0	0	0	0	0	0	0
Tot	0	0	0	4	7	7	9	2	9	9	4	51

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 52
Hours of Missing Data 2
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	0	0	1	0	0	0	0	1
NNE	0	0	0	0	0	0	1	0	3	0	0	4
NE	0	0	1	0	0	1	2	0	1	1	0	6
ENE	0	0	0	0	1	0	1	0	0	0	0	2
E	0	0	0	0	0	2	1	0	1	0	0	4
ESE	0	0	0	0	0	0	0	0	1	0	0	1
SE	0	0	0	0	0	1	3	0	0	0	0	4
SSE	0	0	0	0	0	1	0	0	0	0	0	1
S	0	0	0	0	0	0	0	2	0	1	0	3
SSW	0	0	0	1	0	0	0	1	0	1	0	3
SW	0	0	0	0	1	0	0	0	3	0	0	4
WSW	0	0	0	0	1	0	0	0	0	1	0	2
W	0	0	0	0	0	1	0	0	1	1	0	3
WNW	0	0	1	0	0	0	1	0	0	0	0	2
NW	0	0	0	0	1	1	0	1	0	0	0	3
NNW	0	0	0	0	0	0	0	0	0	0	0	0
Tot	0	0	2	1	4	7	10	4	10	5	0	43

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 43
Hours of Missing Data 2
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	0	0	0	1	3	3	3	3	0	0	13
NNE	0	0	2	2	5	8	6	4	9	2	0	38
NE	0	0	0	0	7	8	11	12	7	1	0	46
ENE	0	0	0	0	8	14	9	0	0	0	0	31
E	0	0	0	1	7	7	11	8	8	1	0	43
ESE	0	0	2	0	2	5	4	1	5	1	0	20
SE	0	0	0	0	1	2	6	4	3	1	0	17
SSE	0	0	0	0	3	7	7	3	10	3	3	36
S	0	1	0	2	3	4	4	5	18	5	11	53
SSW	0	0	0	0	1	3	7	5	18	10	1	45
SW	0	1	2	0	6	4	1	3	9	5	1	32
WSW	0	0	2	2	2	2	5	8	6	2	10	39
W	0	1	0	0	2	5	5	4	10	15	9	51
WNW	0	0	0	0	0	0	4	0	1	1	0	6
NW	0	0	0	0	3	1	4	4	4	0	3	19
NNW	0	0	1	0	3	4	2	3	2	2	0	17
Tot	0	3	9	7	54	77	89	67	113	49	38	506

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 507
Hours of Missing Data 2
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	1	2	13	9	10	4	6	0	1	46
NNE	0	1	1	0	4	12	20	16	11	3	0	68
NE	0	0	3	6	11	19	16	13	5	1	0	74
ENE	0	1	4	2	25	21	6	1	4	0	0	64
E	0	0	1	4	18	23	37	17	3	0	0	103
ESE	0	1	2	4	6	8	12	11	11	0	0	55
SE	0	1	2	0	2	5	11	12	15	1	0	49
SSE	0	0	2	1	3	12	16	14	17	6	1	72
S	0	0	0	4	10	10	17	12	27	17	11	108
SSW	0	1	1	0	8	5	10	16	19	4	7	71
SW	0	1	0	1	5	8	5	7	8	2	4	41
WSW	0	2	0	2	2	8	5	5	12	1	4	41
W	0	0	2	0	4	7	10	12	11	3	1	50
WNW	0	0	1	1	6	4	9	10	6	3	0	40
NW	0	0	2	0	2	3	12	10	10	0	0	39
NNW	0	0	1	1	2	8	16	7	8	0	1	44
Tot	0	8	23	28	121	162	212	167	173	41	30	965

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 965
Hours of Missing Data 2
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0		>10.00
N	0	0	1	0	3	5	2	3	1	0	0	15
NNE	0	0	1	1	2	1	2	1	0	0	0	8
NE	0	0	1	1	2	1	1	0	0	0	0	6
ENE	0	0	2	2	1	2	0	0	0	0	0	7
E	0	0	2	0	2	3	1	0	1	0	0	9
ESE	0	0	0	0	4	1	1	1	1	0	1	9
SE	0	0	0	2	3	7	5	11	2	1	0	31
SSE	0	0	0	3	3	6	4	2	0	0	1	19
S	0	0	0	2	1	2	0	6	2	0	1	14
SSW	0	0	1	0	2	5	6	6	7	0	0	27
SW	0	0	0	2	3	5	4	4	2	0	0	20
WSW	0	0	0	0	3	5	3	1	0	0	1	13
W	0	0	1	2	5	3	1	0	1	0	0	13
WNW	0	0	0	1	2	3	7	1	0	0	0	14
NW	0	0	0	0	2	1	1	0	0	0	0	4
NNW	0	0	1	1	2	2	0	2	2	0	0	10
Tot	0	0	10	17	40	52	38	38	19	1	4	219

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 220
Hours of Missing Data 2
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	1	2	2	0	0	0	0	0	5
NNE	0	0	0	0	1	1	0	0	0	0	0	2
NE	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	1	0	0	0	0	0	0	1
E	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	1	1	0	0	0	0	0	2
SSE	0	0	0	0	6	2	0	0	0	0	0	8
S	0	0	0	0	0	0	1	0	0	0	0	1
SSW	0	0	0	0	1	0	0	0	0	0	0	1
SW	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	3	0	0	0	0	0	3
W	0	0	0	0	1	3	0	0	0	0	0	4
WNW	0	1	0	0	1	0	0	0	0	0	0	2
NW	0	0	0	0	0	1	0	0	0	0	0	1
NNW	0	0	0	0	2	1	0	0	0	0	0	3
Tot	0	1	0	1	16	14	1	0	0	0	0	33

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 33
Hours of Missing Data 2
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

All Stabilities

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	1	1	5	4	13	9	18	16	8	2	77
NNE	0	1	2	3	8	20	18	26	37	16	2	133
NE	0	0	3	3	9	15	32	48	49	10	1	170
ENE	0	0	2	10	34	53	43	12	7	0	0	161
E	0	0	0	3	21	22	41	33	39	7	0	166
ESE	0	0	6	4	10	17	9	17	32	10	2	107
SE	0	0	2	2	8	11	15	21	47	17	1	124
SSE	0	0	1	2	10	22	27	23	47	19	13	164
S	0	0	1	5	13	11	19	18	46	48	39	200
SSW	0	0	1	1	10	10	10	23	48	50	30	183
SW	0	2	3	2	10	4	13	15	40	16	14	119
WSW	0	0	3	3	14	22	25	14	26	10	15	132
W	0	0	3	4	5	12	13	17	38	18	26	136
WNW	0	1	4	1	6	10	15	22	26	16	1	102
NW	0	0	0	2	7	8	11	21	53	17	7	126
NNW	0	1	2	1	10	9	11	14	22	7	1	78
Tot	0	6	34	51	179	259	311	342	573	269	154	2178

Hours of Calm 0
Hours of Variable Direction 6
Hours of Valid Data 2184
Hours of Missing Data 0
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	1	0	0	0	0	1
NE	0	0	0	0	0	3	2	2	1	0	0	8
ENE	0	0	0	1	1	4	1	1	0	0	0	8
E	0	0	0	0	2	1	4	1	0	0	0	8
ESE	0	0	0	0	0	0	0	0	1	0	0	1
SE	0	0	0	0	0	0	0	1	4	3	0	8
SSE	0	0	0	0	1	0	0	0	0	2	0	3
S	0	0	0	0	0	0	0	0	1	0	0	1
SSW	0	0	0	0	0	0	0	0	0	1	0	1
SW	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	4	1	0	0	0	0	5
W	0	0	0	0	0	1	1	0	0	1	0	3
WNW	0	0	0	0	0	0	1	0	2	1	0	4
NW	0	0	0	0	0	0	2	1	9	4	0	16
NNW	0	0	0	0	0	0	0	0	0	0	0	0
Tot	0	0	0	1	4	13	13	6	18	12	0	67

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 68
Hours of Missing Data 0
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0		>10.00
N	0	0	0	1	0	0	1	0	0	0	0	2
NNE	0	0	0	0	1	1	0	0	1	0	0	3
NE	0	0	0	0	2	2	5	5	6	0	0	20
ENE	0	0	0	3	3	5	5	1	1	0	0	18
E	0	0	0	0	2	2	2	0	0	0	0	6
ESE	0	0	0	2	0	1	0	0	0	2	0	5
SE	0	0	0	0	1	1	0	2	5	1	0	10
SSE	0	0	0	0	2	0	2	1	2	1	0	8
S	0	0	0	0	1	0	1	0	1	3	3	9
SSW	0	0	0	0	0	1	0	1	1	4	1	8
SW	0	0	1	0	0	0	0	2	1	1	2	7
WSW	0	0	0	0	1	3	3	0	2	0	0	9
W	0	0	0	0	0	0	0	1	1	2	0	4
WNW	0	0	0	0	0	1	1	3	4	2	0	11
NW	0	0	0	0	0	0	1	0	6	2	2	11
NNW	0	0	0	0	0	0	0	0	2	1	0	3
Tot	0	0	1	6	13	17	21	16	33	19	8	134

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 135
Hours of Missing Data 0
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	0	0	0	1	1	1	0	0	0	3
NNE	0	0	0	1	1	1	1	0	1	0	0	5
NE	0	0	0	0	0	1	3	3	4	0	0	11
ENE	0	0	0	0	3	3	0	0	1	0	0	7
E	0	0	0	0	1	0	2	0	1	0	0	4
ESE	0	0	0	0	1	1	3	1	0	0	0	6
SE	0	0	0	0	0	2	1	2	1	0	0	6
SSE	0	0	0	0	1	2	5	0	1	0	1	10
S	0	0	0	0	1	1	1	3	3	3	0	12
SSW	0	0	0	0	2	0	1	1	3	6	3	16
SW	0	0	0	0	1	0	2	1	3	1	2	10
WSW	0	0	0	0	2	5	1	0	0	1	2	11
W	0	0	0	1	1	2	0	1	1	1	2	9
WNW	0	0	1	0	0	2	2	3	5	1	0	14
NW	0	0	0	1	1	2	2	3	3	3	2	17
NNW	0	0	0	0	1	1	0	0	1	0	0	3
Tot	0	0	1	3	16	24	25	19	28	16	12	144

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 145
Hours of Missing Data 0
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	1	1	1	3	8	4	12	11	3	2	46
NNE	0	1	1	0	5	9	8	18	18	11	2	73
NE	0	0	2	1	5	5	11	24	29	9	1	87
ENE	0	0	2	2	18	31	27	8	5	0	0	93
E	0	0	0	1	8	11	23	20	22	5	0	90
ESE	0	0	2	2	6	8	2	8	11	3	0	42
SE	0	0	1	1	2	3	3	9	10	7	0	36
SSE	0	0	0	1	2	11	9	7	15	12	9	66
S	0	0	1	1	5	5	4	4	23	10	22	75
SSW	0	0	0	0	4	6	3	10	17	18	13	71
SW	0	2	2	1	5	1	3	3	19	9	8	53
WSW	0	0	3	1	8	8	11	8	13	5	10	67
W	0	0	2	1	3	5	3	9	29	11	23	86
WNW	0	1	2	0	4	1	7	5	5	9	1	35
NW	0	0	0	0	5	3	5	8	8	1	3	33
NNW	0	0	2	1	7	6	9	11	9	4	1	50
Tot	0	5	21	14	90	121	132	164	244	117	95	1003

Hours of Calm 0
Hours of Variable Direction 2
Hours of Valid Data 1005
Hours of Missing Data 0
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	2	0	2	3	4	2	1	0	14
NNE	0	0	1	2	0	3	7	6	12	2	0	33
NE	0	0	1	2	2	3	9	14	9	1	0	41
ENE	0	0	0	4	6	9	10	2	0	0	0	31
E	0	0	0	1	6	8	10	12	16	2	0	55
ESE	0	0	4	0	2	7	2	6	17	5	1	44
SE	0	0	1	0	4	4	7	5	19	6	1	47
SSE	0	0	1	1	1	5	6	12	25	4	3	58
S	0	0	0	4	5	3	9	10	16	32	14	93
SSW	0	0	1	1	4	1	5	11	23	20	13	79
SW	0	0	0	1	3	3	8	8	13	5	2	43
WSW	0	0	0	1	3	2	7	3	11	4	3	34
W	0	0	1	2	1	0	6	5	6	3	1	25
WNW	0	0	0	0	1	4	3	7	5	3	0	23
NW	0	0	0	1	0	2	0	9	26	7	0	45
NNW	0	1	0	0	2	1	1	3	10	1	0	19
Tot	0	1	10	22	40	57	93	117	210	96	38	684

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 685
Hours of Missing Data 0
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	1	2	0	1	3	4	0	11
NNE	0	0	0	0	1	6	1	2	5	3	0	18
NE	0	0	0	0	0	1	2	0	0	0	0	3
ENE	0	0	0	0	3	1	0	0	0	0	0	4
E	0	0	0	1	2	0	0	0	0	0	0	3
ESE	0	0	0	0	1	0	2	2	3	0	1	9
SE	0	0	0	1	1	1	4	2	8	0	0	17
SSE	0	0	0	0	3	4	5	3	4	0	0	19
S	0	0	0	0	0	2	2	1	2	0	0	7
SSW	0	0	0	0	0	2	1	0	4	1	0	8
SW	0	0	0	0	1	0	0	1	4	0	0	6
WSW	0	0	0	1	0	0	2	3	0	0	0	6
W	0	0	0	0	0	4	3	1	1	0	0	9
WNW	0	0	1	1	1	2	1	4	5	0	0	15
NW	0	0	0	0	1	1	1	0	1	0	0	4
NNW	0	0	0	0	0	1	1	0	0	1	0	3
Tot	0	0	1	4	15	27	25	20	40	9	1	142

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 142
Hours of Missing Data 0
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2013 - 2013

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	0	1	0	0	0	0	0	0	0	1
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	1	0	2	0	0	0	0	3
SSW	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0
Tot	0	0	0	1	1	0	2	0	0	0	0	4

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 4
Hours of Missing Data 0
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

All Stabilities

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0		>10.00
N	0	7	10	11	23	21	13	3	0	0	0	88
NNE	0	5	11	13	32	35	23	6	3	0	0	128
NE	0	4	5	11	60	56	12	2	7	0	0	157
ENE	0	4	5	30	65	17	1	0	0	0	0	122
E	0	3	13	18	57	27	0	0	0	0	0	118
ESE	0	4	6	10	25	55	13	4	0	0	0	117
SE	0	4	12	8	27	27	15	1	0	0	0	94
SSE	0	6	18	26	63	23	2	2	0	0	0	140
S	0	11	31	28	62	32	17	4	1	0	0	186
SSW	0	9	38	42	72	44	27	8	2	2	0	244
SW	0	10	36	45	57	34	27	9	1	0	0	219
WSW	0	6	10	15	37	26	10	10	4	0	0	118
W	0	7	20	18	37	21	8	1	0	0	0	112
WNW	0	15	21	10	28	9	11	4	1	0	0	99
NW	0	7	28	14	23	22	12	7	4	0	0	117
NNW	0	5	14	33	38	13	19	7	1	0	0	130
Tot	0	107	278	332	706	462	210	68	24	2	0	2189

Hours of Calm 6
Hours of Variable Direction 4
Hours of Valid Data 2199
Hours of Missing Data 9
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	1	0	0	5	6	0	0	0	0	12
NNE	0	0	0	0	1	2	5	0	2	0	0	10
NE	0	0	1	0	2	18	3	0	3	0	0	27
ENE	0	0	0	1	8	10	0	0	0	0	0	19
E	0	0	0	1	10	6	0	0	0	0	0	17
ESE	0	0	0	1	1	8	1	0	0	0	0	11
SE	0	0	0	0	3	2	3	0	0	0	0	8
SSE	0	0	0	2	5	4	0	1	0	0	0	12
S	0	0	1	1	9	10	3	1	1	0	0	26
SSW	0	0	0	1	6	7	6	2	0	0	0	22
SW	0	0	1	0	2	4	11	2	0	0	0	20
WSW	0	0	0	0	5	2	4	4	2	0	0	17
W	0	0	1	0	1	2	1	1	0	0	0	6
WNW	0	0	0	0	0	3	3	3	1	0	0	10
NW	0	0	0	1	1	5	4	2	3	0	0	16
NNW	0	0	1	0	0	0	7	1	0	0	0	9
Tot	0	0	6	8	54	88	57	17	12	0	0	242

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 243
Hours of Missing Data 9
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	0	0	1	1	0	0	0	0	0	2
NNE	0	0	0	0	3	3	1	0	0	0	0	7
NE	0	0	0	0	4	5	1	0	0	0	0	10
ENE	0	0	0	1	3	3	1	0	0	0	0	8
E	0	0	0	1	1	2	0	0	0	0	0	4
ESE	0	0	0	2	4	0	0	0	0	0	0	6
SE	0	0	0	1	2	1	1	0	0	0	0	5
SSE	0	0	1	0	2	1	0	1	0	0	0	5
S	0	0	0	1	3	2	0	0	0	0	0	6
SSW	0	0	0	0	2	2	2	1	1	0	0	8
SW	0	0	0	0	1	7	4	2	0	0	0	14
WSW	0	0	0	0	4	1	2	2	0	0	0	9
W	0	0	0	0	2	5	0	0	0	0	0	7
WNW	0	0	0	0	0	0	1	0	0	0	0	1
NW	0	0	0	0	2	0	1	3	0	0	0	6
NNW	0	0	0	0	1	1	3	0	0	0	0	5
Tot	0	0	1	6	35	34	17	9	1	0	0	103

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 103
Hours of Missing Data 9
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	3	0	0	0	0	0	0	3
NNE	0	0	0	0	2	1	3	1	0	0	0	7
NE	0	0	1	1	4	4	0	0	0	0	0	10
ENE	0	0	0	3	1	0	0	0	0	0	0	4
E	0	0	0	0	4	0	0	0	0	0	0	4
ESE	0	0	0	0	2	3	0	0	0	0	0	5
SE	0	0	0	1	1	1	0	0	0	0	0	3
SSE	0	0	0	0	4	0	0	0	0	0	0	4
S	0	0	0	0	1	4	2	1	0	0	0	8
SSW	0	0	0	0	4	3	5	0	0	1	0	13
SW	0	1	1	0	3	4	1	3	0	0	0	13
WSW	0	0	1	1	7	2	1	0	1	0	0	13
W	0	0	0	0	2	2	0	0	0	0	0	4
WNW	0	0	0	0	3	2	2	0	0	0	0	7
NW	0	0	0	1	2	4	4	1	0	0	0	12
NNW	0	0	0	0	3	4	2	2	0	0	0	11
Tot	0	1	3	7	46	34	20	8	1	1	0	121

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 121
Hours of Missing Data 9
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	0	1	2	6	5	3	3	0	0	0	20
NNE	0	0	1	4	12	7	8	2	1	0	0	35
NE	0	1	2	0	12	19	3	1	4	0	0	42
ENE	0	0	0	1	14	2	0	0	0	0	0	17
E	0	0	2	3	13	5	0	0	0	0	0	23
ESE	0	0	1	1	3	8	1	0	0	0	0	14
SE	0	0	2	0	6	7	1	0	0	0	0	16
SSE	0	0	0	0	16	7	2	0	0	0	0	25
S	0	1	5	10	11	7	10	0	0	0	0	44
SSW	0	1	2	7	18	19	8	5	1	1	0	62
SW	0	0	2	7	15	12	8	2	1	0	0	47
WSW	0	1	2	4	10	14	1	3	1	0	0	36
W	0	0	5	6	12	6	5	0	0	0	0	34
WNW	0	0	4	1	9	1	5	1	0	0	0	21
NW	0	1	2	2	9	8	3	0	1	0	0	26
NNW	0	0	0	8	14	4	6	3	1	0	0	36
Tot	0	5	31	56	180	131	64	20	10	1	0	498

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 499
Hours of Missing Data 9
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	1	8	13	10	4	0	0	0	0	36
NNE	0	1	8	9	14	22	6	3	0	0	0	63
NE	0	2	1	10	38	10	5	1	0	0	0	67
ENE	0	2	5	23	39	2	0	0	0	0	0	71
E	0	2	8	12	28	14	0	0	0	0	0	64
ESE	0	1	3	2	11	26	11	4	0	0	0	58
SE	0	2	3	4	11	15	8	1	0	0	0	44
SSE	0	4	13	17	29	9	0	0	0	0	0	72
S	0	1	7	8	16	6	2	2	0	0	0	42
SSW	0	2	4	15	23	11	6	0	0	0	0	61
SW	0	1	4	8	21	5	3	0	0	0	0	42
WSW	0	2	3	7	9	4	2	1	0	0	0	28
W	0	1	8	6	20	5	2	0	0	0	0	42
WNW	0	0	5	8	16	3	0	0	0	0	0	32
NW	0	1	5	8	9	5	0	1	0	0	0	29
NNW	0	0	0	8	18	4	1	1	0	0	0	32
Tot	0	22	78	153	315	151	50	14	0	0	0	783

Hours of Calm 3
Hours of Variable Direction 0
Hours of Valid Data 786
Hours of Missing Data 9
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction	0.5- Sector	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	Total
N	0	5	4	0	0	0	0	0	0	0	0	9
NNE	0	3	2	0	0	0	0	0	0	0	0	5
NE	0	1	0	0	0	0	0	0	0	0	0	1
ENE	0	2	0	1	0	0	0	0	0	0	0	3
E	0	1	3	1	1	0	0	0	0	0	0	6
ESE	0	1	2	4	3	9	0	0	0	0	0	19
SE	0	1	6	1	4	1	2	0	0	0	0	15
SSE	0	1	4	6	7	2	0	0	0	0	0	20
S	0	4	15	7	21	3	0	0	0	0	0	50
SSW	0	5	25	18	19	2	0	0	0	0	0	69
SW	0	7	22	24	13	2	0	0	0	0	0	68
WSW	0	2	3	2	2	3	0	0	0	0	0	12
W	0	4	6	6	0	1	0	0	0	0	0	17
WNW	0	8	6	0	0	0	0	0	0	0	0	14
NW	0	4	13	2	0	0	0	0	0	0	0	19
NNW	0	5	7	10	1	0	0	0	0	0	0	23
Tot	0	54	118	82	71	23	2	0	0	0	0	350

Hours of Calm 2
Hours of Variable Direction 2
Hours of Valid Data 354
Hours of Missing Data 9
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	2	3	1	0	0	0	0	0	0	0	6
NNE	0	1	0	0	0	0	0	0	0	0	0	1
NE	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	2	0	0	1	1	0	0	0	0	0	4
SE	0	1	1	1	0	0	0	0	0	0	0	3
SSE	0	1	0	1	0	0	0	0	0	0	0	2
S	0	5	3	1	1	0	0	0	0	0	0	10
SSW	0	1	7	1	0	0	0	0	0	0	0	9
SW	0	1	6	6	2	0	0	0	0	0	0	15
WSW	0	1	1	1	0	0	0	0	0	0	0	3
W	0	2	0	0	0	0	0	0	0	0	0	2
WNW	0	7	6	1	0	0	0	0	0	0	0	14
NW	0	1	8	0	0	0	0	0	0	0	0	9
NNW	0	0	6	7	1	0	0	0	0	0	0	14
Tot	0	25	41	20	5	1	0	0	0	0	0	92

Hours of Calm 1
Hours of Variable Direction 0
Hours of Valid Data 93
Hours of Missing Data 9
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

All Stabilities

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	0	2	4	22	20	15	9	11	0	0	83
NNE	0	1	3	7	21	18	16	31	7	1	0	105
NE	0	1	4	3	6	10	19	12	3	7	0	65
ENE	0	0	0	7	28	30	4	0	0	0	0	69
E	0	4	6	8	34	39	30	12	0	0	0	133
ESE	0	0	7	10	22	31	29	16	15	0	0	130
SE	1	2	5	5	22	26	26	21	10	0	0	118
SSE	0	0	2	8	28	47	24	5	0	0	0	114
S	0	2	2	8	33	59	42	21	4	1	0	172
SSW	0	2	4	6	32	88	65	38	17	1	2	255
SW	1	5	6	11	27	50	65	27	20	0	0	212
WSW	0	2	4	7	38	31	25	15	17	6	0	145
W	0	3	4	4	27	29	16	10	4	0	0	97
WNW	0	1	4	7	16	31	18	5	9	0	0	91
NW	0	1	3	7	18	26	18	17	9	4	0	103
NNW	0	1	1	4	21	31	21	15	11	2	0	107
Tot	2	25	57	106	395	566	433	254	137	22	2	1999

Hours of Calm 0
Hours of Variable Direction 4
Hours of Valid Data 2003
Hours of Missing Data 205
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	1	0	1	4	3	1	0	0	10
NNE	0	0	0	0	0	0	1	4	0	1	0	6
NE	0	0	1	0	0	2	7	1	1	3	0	15
ENE	0	0	0	2	3	4	1	0	0	0	0	10
E	0	0	0	0	6	5	2	1	0	0	0	14
ESE	0	0	0	0	1	6	5	0	0	0	0	12
SE	0	0	0	0	1	5	3	1	0	0	0	10
SSE	0	0	0	0	4	3	1	0	0	0	0	8
S	0	0	0	1	3	13	5	3	2	1	0	28
SSW	0	0	0	1	3	5	6	5	1	0	0	21
SW	0	0	0	1	0	4	8	7	3	0	0	23
WSW	0	0	0	0	3	1	2	3	6	1	0	16
W	0	0	0	1	1	1	1	1	1	0	0	6
WNW	0	0	0	0	0	1	1	1	5	0	0	8
NW	0	0	0	0	1	3	3	5	2	4	0	18
NNW	0	0	0	0	0	0	0	6	2	0	0	8
Tot	0	0	1	7	26	54	50	41	24	10	0	213

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 214
Hours of Missing Data 205
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction	Wind Speed Range (m/s)											Total
Sector	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	0	0	2	1	1	0	0	0	0	4
NNE	0	0	0	0	0	1	1	1	0	0	0	3
NE	0	0	0	0	1	1	2	1	0	0	0	5
ENE	0	0	0	0	2	0	0	0	0	0	0	2
E	0	0	0	1	1	1	1	0	0	0	0	4
ESE	0	0	0	0	3	1	0	0	0	0	0	4
SE	0	0	0	0	2	2	1	0	0	0	0	5
SSE	0	0	0	1	0	2	1	1	0	0	0	5
S	0	0	0	1	1	3	1	0	0	0	0	6
SSW	0	0	0	0	0	4	1	1	0	1	0	7
SW	0	0	0	0	1	1	8	1	4	0	0	15
WSW	0	0	0	0	3	0	2	1	2	1	0	9
W	0	0	0	0	2	0	1	0	0	0	0	3
WNW	0	0	0	0	0	1	1	0	1	0	0	3
NW	0	0	0	0	2	0	0	1	2	0	0	5
NNW	0	0	0	0	0	0	1	1	2	0	0	4
Tot	0	0	0	3	20	18	22	8	11	2	0	84

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 84
Hours of Missing Data 205
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	0	0	1	1	0	0	1	0	0	3
NNE	0	0	0	0	0	2	0	1	1	0	0	4
NE	0	0	1	0	1	1	0	3	0	0	0	6
ENE	0	0	0	0	4	1	0	0	0	0	0	5
E	0	0	0	0	3	1	0	0	0	0	0	4
ESE	0	0	0	0	0	2	0	0	0	0	0	2
SE	0	0	0	1	3	1	2	0	0	0	0	7
SSE	0	0	0	0	0	2	0	0	0	0	0	2
S	0	0	0	0	2	1	1	3	0	0	0	7
SSW	0	0	0	0	2	3	4	4	0	0	1	14
SW	0	1	1	1	1	3	3	2	3	0	0	15
WSW	0	0	0	0	4	3	2	0	0	1	0	10
W	0	0	0	0	4	1	0	0	0	0	0	5
WNW	0	0	0	0	1	3	1	1	0	0	0	6
NW	0	0	0	0	3	2	3	4	2	0	0	14
NNW	0	0	0	0	0	4	2	1	2	0	0	9
Tot	0	1	2	2	29	31	18	19	9	1	1	113

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 113
Hours of Missing Data 205
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	0	0	2	4	6	2	1	5	0	0	20
NNE	0	0	0	1	7	5	4	5	2	0	0	24
NE	0	0	1	2	0	1	6	6	1	4	0	21
ENE	0	0	0	1	0	1	1	0	0	0	0	3
E	0	1	1	1	4	10	4	2	0	0	0	23
ESE	0	0	0	0	6	2	6	1	0	0	0	15
SE	0	0	2	1	6	6	3	1	0	0	0	19
SSE	0	0	0	0	5	14	4	1	0	0	0	24
S	0	0	2	4	9	8	11	5	0	0	0	39
SSW	0	0	1	3	10	14	12	6	7	0	1	54
SW	0	1	4	6	8	16	8	5	7	0	0	55
WSW	0	0	2	3	7	7	8	6	2	3	0	38
W	0	1	1	1	11	4	3	4	1	0	0	26
WNW	0	1	3	2	1	10	2	1	3	0	0	23
NW	0	0	1	1	5	8	4	4	2	0	0	25
NNW	0	0	0	3	8	10	5	4	4	2	0	36
Tot	0	4	18	31	91	122	83	52	34	9	1	445

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 446
Hours of Missing Data 205
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	7	4	8	5	4	0	0	28
NNE	0	0	0	1	3	8	10	20	4	0	0	46
NE	0	0	0	1	2	4	4	1	1	0	0	13
ENE	0	0	0	1	19	24	2	0	0	0	0	46
E	0	1	2	4	16	20	22	9	0	0	0	74
ESE	0	0	3	6	8	16	14	14	14	0	0	75
SE	0	1	1	3	8	8	16	12	4	0	0	53
SSE	0	0	2	4	11	17	16	3	0	0	0	53
S	0	1	0	1	13	22	10	4	2	0	0	53
SSW	0	0	3	1	7	22	14	9	7	0	0	63
SW	0	1	1	2	8	8	19	5	3	0	0	47
WSW	0	0	1	0	4	8	7	4	3	0	0	27
W	0	0	1	0	5	12	8	5	2	0	0	33
WNW	0	0	0	2	8	12	12	2	0	0	0	36
NW	0	0	1	2	3	9	8	3	1	0	0	27
NNW	0	0	0	0	5	14	12	3	1	0	0	35
Tot	0	4	15	28	127	208	182	99	46	0	0	709

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 709
Hours of Missing Data 205
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	0	2	1	6	6	0	0	0	0	0	15
NNE	0	0	1	2	7	0	0	0	0	0	0	10
NE	0	1	1	0	2	1	0	0	0	0	0	5
ENE	0	0	0	1	0	0	0	0	0	0	0	1
E	0	1	3	1	4	2	1	0	0	0	0	12
ESE	0	0	2	2	4	4	3	1	1	0	0	17
SE	1	0	1	0	1	4	1	7	5	0	0	20
SSE	0	0	0	3	6	9	2	0	0	0	0	20
S	0	1	0	1	5	11	13	6	0	0	0	37
SSW	0	0	0	1	10	37	25	13	2	0	0	88
SW	0	1	0	1	6	15	19	6	0	0	0	48
WSW	0	2	1	3	10	9	4	1	4	0	0	34
W	0	1	0	1	1	9	2	0	0	0	0	14
WNW	0	0	0	2	4	3	1	0	0	0	0	10
NW	0	0	1	2	3	2	0	0	0	0	0	8
NNW	0	0	1	0	5	2	0	0	0	0	0	8
Tot	1	7	13	21	74	114	71	34	12	0	0	347

Hours of Calm 0
Hours of Variable Direction 2
Hours of Valid Data 349
Hours of Missing Data 205
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	2	1	0	0	0	0	0	3
NNE	0	1	2	3	4	2	0	0	0	0	0	12
NE	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	2	0	0	0	0	0	0	0	2
E	0	1	0	1	0	0	0	0	0	0	0	2
ESE	0	0	2	2	0	0	1	0	0	0	0	5
SE	0	1	1	0	1	0	0	0	1	0	0	4
SSE	0	0	0	0	2	0	0	0	0	0	0	2
S	0	0	0	0	0	1	1	0	0	0	0	2
SSW	0	2	0	0	0	3	3	0	0	0	0	8
SW	1	1	0	0	3	3	0	1	0	0	0	9
WSW	0	0	0	1	7	3	0	0	0	0	0	11
W	0	1	2	1	3	2	1	0	0	0	0	10
WNW	0	0	1	1	2	1	0	0	0	0	0	5
NW	0	1	0	2	1	2	0	0	0	0	0	6
NNW	0	1	0	1	3	1	1	0	0	0	0	7
Tot	1	9	8	14	28	19	7	1	1	0	0	88

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 88
Hours of Missing Data 205
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

All Stabilities

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	1	1	2	9	12	15	12	18	4	0	74
NNE	0	0	1	1	11	25	17	27	38	6	0	126
NE	0	0	3	4	16	28	32	33	26	10	2	154
ENE	0	0	3	5	24	48	53	11	0	0	0	144
E	0	1	3	4	21	36	38	20	14	1	0	138
ESE	0	2	0	2	21	18	30	23	23	13	0	132
SE	0	1	1	1	18	18	19	20	29	6	0	113
SSE	0	1	1	2	19	29	21	13	17	2	0	105
S	0	0	5	4	19	30	32	38	27	3	0	158
SSW	0	1	0	2	17	32	43	48	56	21	4	224
SW	0	1	2	7	14	30	44	47	78	11	0	234
WSW	0	3	5	7	21	30	42	24	36	17	0	185
W	0	0	3	6	25	19	16	16	19	2	0	106
WNW	0	3	5	4	11	21	15	19	20	2	0	100
NW	0	3	3	1	12	18	21	21	24	3	2	108
NNW	0	1	1	3	10	17	15	18	26	2	1	94
Tot	0	18	37	55	268	411	453	390	451	103	9	2195

Hours of Calm 0
Hours of Variable Direction 3
Hours of Valid Data 2198
Hours of Missing Data 10
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	1	0	0	1	0	0	0	0	0	2
NNE	0	0	0	0	0	0	0	0	1	0	0	1
NE	0	0	0	0	0	0	3	0	0	0	0	3
ENE	0	0	0	2	0	0	2	0	0	0	0	4
E	0	0	0	0	1	6	0	2	0	0	0	9
ESE	0	0	0	0	2	0	2	2	0	0	0	6
SE	0	0	0	0	0	1	1	2	0	0	0	4
SSE	0	0	0	0	0	0	1	0	0	0	0	1
S	0	0	0	0	0	1	1	0	0	0	0	2
SSW	0	0	0	0	1	0	1	0	0	0	0	2
SW	0	0	0	0	0	0	0	2	0	0	0	2
WSW	0	0	0	0	0	0	0	1	0	0	0	1
W	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	1	0	1
NW	0	0	0	0	0	0	1	0	0	1	0	2
NNW	0	0	0	0	0	0	0	0	0	0	0	0
Tot	0	0	1	2	4	9	12	9	1	2	0	40

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 40
Hours of Missing Data 10
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	0	0	0	0	0	3	1	1	0	0	5
NNE	0	0	0	0	0	1	1	5	1	0	0	8
NE	0	0	0	0	1	0	3	2	0	2	2	10
ENE	0	0	0	1	3	5	9	0	0	0	0	18
E	0	0	0	0	1	2	2	1	0	0	0	6
ESE	0	0	0	0	2	4	3	0	0	0	0	9
SE	0	0	0	0	2	4	2	2	0	0	0	10
SSE	0	0	0	0	4	1	0	0	0	0	0	5
S	0	0	0	1	0	5	2	0	1	0	0	9
SSW	0	0	0	0	0	4	3	3	1	1	0	12
SW	0	0	0	0	0	1	6	3	2	0	0	12
WSW	0	0	0	0	1	1	0	5	2	1	0	10
W	0	0	0	0	1	0	0	0	1	0	0	2
WNW	0	0	0	0	0	1	1	1	1	0	0	4
NW	0	0	0	0	1	3	1	1	2	1	1	10
NNW	0	0	0	0	0	0	0	1	2	0	0	3
Tot	0	0	0	2	16	32	36	25	14	5	3	133

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 134
Hours of Missing Data 10
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	0	0	3	1	4	0	1	0	0	9
NNE	0	0	0	0	1	4	1	2	1	0	0	9
NE	0	0	0	0	2	3	5	4	0	2	0	16
ENE	0	0	0	0	6	6	8	1	0	0	0	21
E	0	0	0	1	5	2	1	0	0	0	0	9
ESE	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	4	1	1	1	0	0	0	7
SSE	0	0	0	0	1	10	2	0	0	0	0	13
S	0	0	0	0	1	8	2	3	5	0	0	19
SSW	0	0	0	0	3	7	2	4	0	0	2	18
SW	0	0	0	1	0	1	5	2	6	0	0	15
WSW	0	0	0	0	0	2	2	4	2	2	0	12
W	0	0	0	1	2	3	2	0	1	0	0	9
WNW	0	0	0	0	1	4	3	0	1	1	0	10
NW	0	0	0	0	2	0	1	2	9	0	1	15
NNW	0	0	0	0	1	3	1	2	2	0	1	10
Tot	0	0	0	3	32	55	40	25	28	5	4	192

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 192
Hours of Missing Data 10
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0		>10.00
N	0	0	0	2	3	7	4	1	6	2	0	25
NNE	0	0	0	1	8	8	4	8	12	2	0	43
NE	0	0	1	2	4	6	14	13	15	6	0	61
ENE	0	0	1	1	6	21	23	9	0	0	0	61
E	0	0	2	2	7	13	14	4	4	0	0	46
ESE	0	1	0	0	5	4	8	9	5	0	0	32
SE	0	0	0	1	2	4	8	4	2	0	0	21
SSE	0	1	1	0	6	11	7	1	3	0	0	30
S	0	0	4	2	13	8	13	13	5	1	0	59
SSW	0	0	0	2	9	13	15	14	10	2	1	66
SW	0	0	1	3	7	20	13	10	10	2	0	66
WSW	0	3	4	4	13	15	15	7	9	8	0	78
W	0	0	0	0	11	7	3	6	6	0	0	33
WNW	0	0	4	2	6	10	3	3	5	0	0	33
NW	0	1	1	1	7	8	7	10	8	0	0	43
NNW	0	1	0	2	6	8	4	7	17	2	0	47
Tot	0	7	19	25	113	163	155	119	117	25	1	744

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 745
Hours of Missing Data 10
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	0	0	0	1	1	2	6	8	2	0	20
NNE	0	0	0	0	0	5	5	9	23	3	0	45
NE	0	0	1	1	5	9	7	14	11	0	0	48
ENE	0	0	1	0	8	16	11	1	0	0	0	37
E	0	1	1	1	5	10	18	13	10	1	0	60
ESE	0	0	0	1	5	10	17	12	16	12	0	73
SE	0	1	1	0	5	5	6	7	18	2	0	45
SSE	0	0	0	0	5	4	10	12	12	1	0	44
S	0	0	0	1	3	6	12	21	10	0	0	53
SSW	0	0	0	0	3	7	16	17	15	9	0	67
SW	0	0	0	2	3	6	9	10	30	4	0	64
WSW	0	0	1	1	6	5	12	5	17	4	0	51
W	0	0	0	3	5	5	6	6	10	2	0	37
WNW	0	2	0	1	1	3	4	12	8	0	0	31
NW	0	1	1	0	0	4	7	7	5	1	0	26
NNW	0	0	1	0	0	4	5	7	5	0	0	22
Tot	0	5	7	11	55	100	147	159	198	41	0	723

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 724
Hours of Missing Data 10
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	1	0	0	2	2	2	4	2	0	0	13
NNE	0	0	1	0	2	6	6	1	0	1	0	17
NE	0	0	1	1	3	10	0	0	0	0	0	15
ENE	0	0	1	1	1	0	0	0	0	0	0	3
E	0	0	0	0	2	2	3	0	0	0	0	7
ESE	0	1	0	1	7	0	0	0	2	1	0	12
SE	0	0	0	0	5	3	1	4	8	3	0	24
SSE	0	0	0	2	3	3	1	0	2	1	0	12
S	0	0	1	0	2	2	2	1	5	2	0	15
SSW	0	1	0	0	1	0	6	10	27	8	1	54
SW	0	1	1	1	1	1	11	17	29	5	0	67
WSW	0	0	0	2	0	4	10	2	6	2	0	26
W	0	0	2	2	4	4	3	4	1	0	0	20
WNW	0	1	1	1	3	3	3	3	5	0	0	20
NW	0	1	1	0	2	3	3	1	0	0	0	11
NNW	0	0	0	0	1	2	1	1	0	0	0	5
Tot	0	6	9	11	39	45	52	48	87	23	1	321

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 321
Hours of Missing Data 10
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2013 - 2013

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	1	0	2	0	0	0	3
NE	0	0	0	0	1	0	0	0	0	0	0	1
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	1	0	0	0	0	0	1
ESE	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	1	1	0	2
SSE	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	1	0	0	1
SSW	0	0	0	0	0	1	0	0	3	1	0	5
SW	0	0	0	0	3	1	0	3	1	0	0	8
WSW	0	0	0	0	1	3	3	0	0	0	0	7
W	0	0	1	0	2	0	2	0	0	0	0	5
WNW	0	0	0	0	0	0	1	0	0	0	0	1
NW	0	0	0	0	0	0	1	0	0	0	0	1
NNW	0	0	0	1	2	0	4	0	0	0	0	7
Tot	0	0	1	1	9	7	11	5	6	2	0	42

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 42
Hours of Missing Data 10
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

All Stabilities

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	3	2	7	7	5	4	4	4	0	0	36
NNE	0	6	6	9	14	11	7	1	0	0	0	54
NE	0	1	4	5	20	13	4	2	0	0	0	49
ENE	0	5	7	6	14	1	0	0	0	0	0	33
E	0	2	6	16	33	28	7	0	0	0	0	92
ESE	0	1	7	5	42	50	18	1	0	0	0	124
SE	0	6	11	8	22	23	14	3	4	0	0	91
SSE	0	2	10	10	43	43	37	17	21	3	0	186
S	0	3	21	19	48	36	39	21	18	11	3	219
SSW	0	4	14	20	44	36	39	33	39	2	0	231
SW	0	0	5	9	51	19	23	13	19	0	1	140
WSW	0	2	14	13	31	16	27	20	10	0	1	134
W	0	1	8	15	63	76	48	60	39	4	3	317
WNW	0	3	10	13	42	29	52	18	12	0	0	179
NW	0	6	21	16	37	38	38	16	3	0	0	175
NNW	0	4	6	11	16	21	28	33	16	3	0	138
Tot	0	49	152	182	527	445	385	242	185	23	8	2198

Hours of Calm 1
Hours of Variable Direction 1
Hours of Valid Data 2200
Hours of Missing Data 8
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	0	0	0	0	1	0	0	1
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	1	0	1	0	0	0	0	0	0	2
ENE	0	0	0	0	1	0	0	0	0	0	0	1
E	0	0	0	0	3	5	1	0	0	0	0	9
ESE	0	0	0	0	2	1	0	0	0	0	0	3
SE	0	0	0	0	2	3	0	0	0	0	0	5
SSE	0	0	0	0	1	0	0	0	0	0	0	1
S	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	1	0	2	2	5	0	0	10
SW	0	0	0	0	3	0	2	1	2	0	0	8
WSW	0	0	0	2	2	2	5	5	6	0	0	22
W	0	0	0	0	4	1	0	4	5	1	0	15
WNW	0	0	0	0	0	0	9	3	7	0	0	19
NW	0	0	0	0	0	6	1	3	0	0	0	10
NNW	0	0	0	0	0	2	2	5	3	1	0	13
Tot	0	0	1	2	20	20	22	23	29	2	0	119

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 119
Hours of Missing Data 8
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0		>10.00
N	0	0	0	0	0	0	1	1	0	0	0	2
NNE	0	0	0	1	1	0	0	0	0	0	0	2
NE	0	0	0	0	1	1	0	0	0	0	0	2
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	2	0	0	0	0	0	0	2
ESE	0	0	0	0	0	3	0	0	0	0	0	3
SE	0	0	0	0	0	1	1	0	0	0	0	2
SSE	0	0	0	0	0	1	0	0	0	0	0	1
S	0	0	0	0	1	0	0	0	0	0	0	1
SSW	0	0	0	0	0	1	2	1	3	0	0	7
SW	0	0	0	0	0	0	1	2	2	0	0	5
WSW	0	0	0	0	0	0	3	0	1	0	0	4
W	0	0	0	1	0	0	1	2	5	1	0	10
WNW	0	0	0	0	0	1	1	1	0	0	0	3
NW	0	0	0	0	0	2	3	0	0	0	0	5
NNW	0	0	0	0	0	1	2	1	0	0	0	4
Tot	0	0	0	2	5	11	15	8	11	1	0	53

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 53
Hours of Missing Data 8
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	0	0	0	1	0	0	0	0	0	1
NNE	0	0	0	0	0	0	1	0	0	0	0	1
NE	0	0	0	0	1	0	1	0	0	0	0	2
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	2	1	1	1	0	0	0	0	5
ESE	0	0	0	1	1	3	0	0	0	0	0	5
SE	0	0	0	0	1	1	0	0	0	0	0	2
SSE	0	0	0	1	0	2	0	0	0	0	0	3
S	0	0	0	1	1	1	0	0	0	0	0	3
SSW	0	0	0	0	0	0	0	1	4	0	0	5
SW	0	0	0	0	1	0	2	0	1	0	0	4
WSW	0	0	0	0	1	2	3	3	0	0	0	9
W	0	0	0	0	1	2	1	3	0	0	0	7
WNW	0	0	0	1	1	0	4	1	1	0	0	8
NW	0	0	0	0	0	1	3	3	1	0	0	8
NNW	0	0	0	0	0	1	3	3	1	1	0	9
Tot	0	0	0	6	9	15	19	14	8	1	0	72

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 72
Hours of Missing Data 8
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	1	1	3	5	4	3	3	3	0	0	23
NNE	0	0	1	1	8	9	4	1	0	0	0	24
NE	0	1	0	3	15	10	1	2	0	0	0	32
ENE	0	2	0	0	6	1	0	0	0	0	0	9
E	0	0	0	7	15	17	5	0	0	0	0	44
ESE	0	0	1	0	4	15	10	0	0	0	0	30
SE	0	2	2	3	5	2	3	3	1	0	0	21
SSE	0	0	0	2	11	12	20	11	12	1	0	69
S	0	0	6	7	13	11	24	12	7	2	1	83
SSW	0	0	1	2	2	5	20	13	15	0	0	58
SW	0	0	0	1	3	7	16	6	10	0	0	43
WSW	0	0	3	2	13	8	11	8	3	0	0	48
W	0	1	0	2	13	36	33	40	21	2	3	151
WNW	0	0	4	4	19	16	30	12	4	0	0	89
NW	0	0	3	1	11	15	29	10	2	0	0	71
NNW	0	0	0	4	8	9	15	17	12	1	0	66
Tot	0	7	22	42	151	177	224	138	90	6	4	861

Hours of Calm 0
Hours of Variable Direction 1
Hours of Valid Data 862
Hours of Missing Data 8
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	2	0	2	2	0	0	0	0	0	0	6
NNE	0	3	4	6	5	2	2	0	0	0	0	22
NE	0	0	1	2	2	2	2	0	0	0	0	9
ENE	0	2	5	5	7	0	0	0	0	0	0	19
E	0	2	3	4	11	5	0	0	0	0	0	25
ESE	0	0	3	3	25	23	8	1	0	0	0	63
SE	0	2	5	5	10	14	10	0	3	0	0	49
SSE	0	0	2	6	28	27	17	6	9	2	0	97
S	0	0	4	6	25	23	15	9	11	9	2	104
SSW	0	0	6	6	27	28	14	16	12	2	0	111
SW	0	0	2	0	15	10	2	4	4	0	1	38
WSW	0	0	3	8	9	4	5	4	0	0	1	34
W	0	0	2	11	44	37	13	11	8	0	0	126
WNW	0	0	2	8	20	12	8	1	0	0	0	51
NW	0	4	8	8	26	14	2	0	0	0	0	62
NNW	0	1	3	3	7	8	6	7	0	0	0	35
Tot	0	16	53	83	263	209	104	59	47	13	4	851

Hours of Calm 1
Hours of Variable Direction 0
Hours of Valid Data 852
Hours of Missing Data 8
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	0	0	1	0	0	0	0	0	0	0	1
NNE	0	1	0	1	0	0	0	0	0	0	0	2
NE	0	0	1	0	0	0	0	0	0	0	0	1
ENE	0	1	1	1	0	0	0	0	0	0	0	3
E	0	0	3	3	1	0	0	0	0	0	0	7
ESE	0	0	3	1	9	4	0	0	0	0	0	17
SE	0	1	3	0	4	2	0	0	0	0	0	10
SSE	0	2	7	1	3	1	0	0	0	0	0	14
S	0	3	7	4	8	1	0	0	0	0	0	23
SSW	0	3	6	10	14	2	1	0	0	0	0	36
SW	0	0	2	7	25	2	0	0	0	0	0	36
WSW	0	1	8	1	6	0	0	0	0	0	0	16
W	0	0	5	1	1	0	0	0	0	0	0	7
WNW	0	1	2	0	2	0	0	0	0	0	0	5
NW	0	1	8	5	0	0	0	0	0	0	0	14
NNW	0	1	1	3	1	0	0	0	0	0	0	6
Tot	0	15	57	39	74	12	1	0	0	0	0	198

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 198
Hours of Missing Data 8
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	1	1	0	0	0	0	0	0	0	2
NNE	0	2	1	0	0	0	0	0	0	0	0	3
NE	0	0	1	0	0	0	0	0	0	0	0	1
ENE	0	0	1	0	0	0	0	0	0	0	0	1
E	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	1	0	0	1	1	0	0	0	0	0	3
SE	0	1	1	0	0	0	0	0	0	0	0	2
SSE	0	0	1	0	0	0	0	0	0	0	0	1
S	0	0	4	1	0	0	0	0	0	0	0	5
SSW	0	1	1	2	0	0	0	0	0	0	0	4
SW	0	0	1	1	4	0	0	0	0	0	0	6
WSW	0	1	0	0	0	0	0	0	0	0	0	1
W	0	0	1	0	0	0	0	0	0	0	0	1
WNW	0	2	2	0	0	0	0	0	0	0	0	4
NW	0	1	2	2	0	0	0	0	0	0	0	5
NNW	0	2	2	1	0	0	0	0	0	0	0	5
Tot	0	11	19	8	5	1	0	0	0	0	0	44

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 44
Hours of Missing Data 8
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

All Stabilities

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	2	3	2	10	5	6	5	7	0	0	40
NNE	0	0	2	0	10	9	9	7	0	0	0	37
NE	0	0	1	6	11	19	11	7	4	0	0	59
ENE	0	0	4	4	11	10	1	0	0	0	0	30
E	0	0	4	3	13	26	23	10	2	0	0	81
ESE	0	0	1	6	16	15	33	32	12	0	0	115
SE	0	0	1	3	17	19	29	20	7	0	0	96
SSE	0	1	2	2	6	24	27	38	27	13	5	145
S	0	0	4	5	18	32	22	35	37	17	12	182
SSW	0	1	2	1	18	31	48	61	59	28	5	254
SW	0	0	1	4	20	32	42	40	29	20	2	190
WSW	0	0	3	7	9	21	22	23	33	9	1	128
W	0	3	0	2	14	42	66	46	70	33	8	284
WNW	0	0	2	3	13	28	36	58	61	13	3	217
NW	0	1	0	2	12	18	47	35	25	3	1	144
NNW	0	0	1	1	9	22	26	27	29	11	4	130
Tot	0	8	31	51	207	353	448	444	402	147	41	2132

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 2132
Hours of Missing Data 76
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	1	0	1	0	0	0	0	0	2
ENE	0	0	0	0	0	1	0	0	0	0	0	1
E	0	0	0	0	1	2	4	1	0	0	0	8
ESE	0	0	0	0	1	1	1	0	0	0	0	3
SE	0	0	0	0	2	5	0	0	0	0	0	7
SSE	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	1	0	2	3	4	0	10
SW	0	0	0	0	1	2	0	1	2	1	0	7
WSW	0	0	0	0	2	0	3	5	7	3	0	20
W	0	0	0	0	1	3	1	0	6	2	1	14
WNW	0	0	0	0	0	0	0	6	9	3	2	20
NW	0	0	0	0	0	2	4	1	3	1	0	11
NNW	0	0	0	0	0	1	1	2	5	2	1	12
Tot	0	0	0	1	8	19	14	18	35	16	4	115

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 115
Hours of Missing Data 76
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0		>10.00
N	0	0	0	0	0	0	0	1	0	0	0	1
NNE	0	0	0	0	1	0	0	0	0	0	0	1
NE	0	0	0	0	1	2	0	0	0	0	0	3
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	1	0	0	0	0	0	1
ESE	0	0	0	0	1	1	2	0	0	0	0	4
SE	0	0	0	0	0	0	1	0	0	0	0	1
SSE	0	0	0	0	0	1	0	1	0	0	0	2
S	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	2	1	0	2	2	0	7
SW	0	0	0	0	0	0	0	3	2	0	0	5
WSW	0	0	0	0	0	0	0	3	1	1	0	5
W	0	0	0	0	0	0	0	1	2	3	1	7
WNW	0	0	0	0	0	0	1	0	2	0	0	3
NW	0	0	0	0	0	0	1	2	2	1	0	6
NNW	0	0	0	0	0	0	4	0	1	0	0	5
Tot	0	0	0	0	3	7	10	11	12	7	1	51

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 51
Hours of Missing Data 76
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	0	1	0	0	0	0	0	1
NNE	0	0	0	0	0	0	0	1	0	0	0	1
NE	0	0	0	0	0	0	0	1	0	0	0	1
ENE	0	0	0	0	1	0	0	0	0	0	0	1
E	0	0	0	1	2	0	1	0	0	0	0	4
ESE	0	0	0	0	2	1	1	0	1	0	0	5
SE	0	0	0	0	0	2	0	0	0	0	0	2
SSE	0	0	0	1	0	3	0	0	0	0	0	4
S	0	0	0	1	0	2	0	0	0	0	0	3
SSW	0	0	0	0	0	0	0	0	2	2	0	4
SW	0	0	0	0	1	0	0	1	1	2	0	5
WSW	0	0	0	0	0	0	0	3	2	0	0	5
W	0	0	0	0	0	0	1	0	3	0	0	4
WNW	0	0	0	0	0	1	0	3	4	1	0	9
NW	0	0	0	0	0	0	1	1	6	0	0	8
NNW	0	0	0	0	0	0	1	2	1	1	1	6
Tot	0	0	0	3	6	10	5	12	20	6	1	63

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 63
Hours of Missing Data 76
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	1	1	0	5	0	2	4	6	0	0	19
NNE	0	0	1	0	4	3	7	5	0	0	0	20
NE	0	0	1	2	3	14	7	2	3	0	0	32
ENE	0	0	1	0	2	4	1	0	0	0	0	8
E	0	0	0	0	7	11	11	8	2	0	0	39
ESE	0	0	1	2	4	6	9	13	3	0	0	38
SE	0	0	1	1	4	2	2	1	3	0	0	14
SSE	0	0	2	0	1	7	7	18	12	10	1	58
S	0	0	4	4	7	14	12	15	18	7	3	84
SSW	0	0	2	1	5	4	5	22	15	9	0	63
SW	0	0	0	1	1	4	7	14	16	8	0	51
WSW	0	0	0	2	2	8	4	5	16	4	0	41
W	0	0	0	1	1	15	22	24	46	18	6	133
WNW	0	0	1	1	4	15	12	28	31	8	1	101
NW	0	0	0	1	3	4	14	20	12	1	1	56
NNW	0	0	0	1	4	5	6	17	18	8	2	61
Tot	0	1	15	17	57	116	128	196	201	73	14	818

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 818
Hours of Missing Data 76
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	1	0	1	4	3	3	0	1	0	0	13
NNE	0	0	0	0	3	4	1	1	0	0	0	9
NE	0	0	0	1	4	2	4	4	1	0	0	16
ENE	0	0	1	3	8	5	0	0	0	0	0	17
E	0	0	3	0	3	12	7	1	0	0	0	26
ESE	0	0	0	2	5	5	15	17	7	0	0	51
SE	0	0	0	0	7	5	19	16	3	0	0	50
SSE	0	0	0	1	4	13	20	17	15	3	4	77
S	0	0	0	0	9	16	9	19	18	10	9	90
SSW	0	1	0	0	9	14	29	33	35	11	5	137
SW	0	0	1	1	4	12	11	12	7	9	2	59
WSW	0	0	2	0	4	5	5	5	7	1	1	30
W	0	0	0	1	3	17	38	21	13	10	0	103
WNW	0	0	0	2	5	10	23	20	15	1	0	76
NW	0	0	0	1	6	7	23	10	2	0	0	49
NNW	0	0	0	0	4	13	13	6	4	0	0	40
Tot	0	2	7	13	82	143	220	182	128	45	21	843

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 843
Hours of Missing Data 76
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction	Wind Speed Range (m/s)											Total
Sector	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	2	1	1	1	1	0	0	0	0	6
NNE	0	0	1	0	1	0	1	0	0	0	0	3
NE	0	0	0	1	3	0	0	0	0	0	0	4
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	2	0	0	0	0	0	0	0	2
ESE	0	0	0	0	3	1	5	2	1	0	0	12
SE	0	0	0	2	3	5	7	2	1	0	0	20
SSE	0	1	0	0	1	0	0	2	0	0	0	4
S	0	0	0	0	2	0	1	1	1	0	0	5
SSW	0	0	0	0	2	8	12	4	2	0	0	28
SW	0	0	0	1	12	13	23	9	1	0	0	59
WSW	0	0	1	2	1	5	8	2	0	0	0	19
W	0	0	0	0	6	7	4	0	0	0	0	17
WNW	0	0	1	0	2	1	0	1	0	0	0	5
NW	0	0	0	0	2	3	2	1	0	0	0	8
NNW	0	0	1	0	1	3	1	0	0	0	0	6
Tot	0	1	6	9	40	47	65	24	6	0	0	198

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 198
Hours of Missing Data 76
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	1	2	0	0	0	0	0	3
NE	0	0	0	1	0	0	0	0	0	0	0	1
ENE	0	0	2	1	0	0	0	0	0	0	0	3
E	0	0	1	0	0	0	0	0	0	0	0	1
ESE	0	0	0	2	0	0	0	0	0	0	0	2
SE	0	0	0	0	1	0	0	1	0	0	0	2
SSE	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	2	2	1	0	0	0	0	5
SW	0	0	0	1	1	1	1	0	0	0	0	4
WSW	0	0	0	3	0	3	2	0	0	0	0	8
W	0	3	0	0	3	0	0	0	0	0	0	6
WNW	0	0	0	0	2	1	0	0	0	0	0	3
NW	0	1	0	0	1	2	2	0	0	0	0	6
NNW	0	0	0	0	0	0	0	0	0	0	0	0
Tot	0	4	3	8	11	11	6	1	0	0	0	44

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 44
Hours of Missing Data 76
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

All Stabilities

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0		>10.00
N	0	1	2	0	5	3	6	17	15	11	2	62
NNE	0	0	0	0	4	5	4	4	7	2	0	26
NE	0	1	4	1	8	9	15	15	15	1	0	69
ENE	0	1	3	0	8	9	9	0	0	0	0	30
E	0	0	1	1	11	9	23	18	7	0	0	70
ESE	0	1	0	2	10	14	17	14	23	3	0	84
SE	0	0	0	2	13	10	9	22	36	11	0	103
SSE	0	0	0	2	4	10	18	32	52	19	6	143
S	0	0	2	4	10	19	17	24	52	30	31	189
SSW	0	0	0	5	3	8	11	29	85	53	23	217
SW	0	0	1	2	10	12	16	33	69	29	15	187
WSW	0	0	0	4	9	13	23	32	49	19	4	153
W	0	0	1	3	6	23	40	48	65	44	24	254
WNW	0	0	0	2	7	11	17	42	121	43	14	257
NW	0	0	0	2	4	14	25	24	63	12	1	145
NNW	0	0	1	0	1	9	18	37	43	21	10	140
Tot	0	4	15	30	113	178	268	391	702	298	130	2129

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 2129
Hours of Missing Data 79
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	1	0	1
NE	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	1	0	0	0	0	0	1
SE	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	1	0	1
SW	0	0	0	0	0	0	0	0	0	2	0	2
WSW	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	1	0	1	0	2
WNW	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0
Tot	0	0	0	0	0	1	0	1	0	5	0	7

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 7
Hours of Missing Data 79
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	0	0	0	0	0	1	0	1
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	1	0	0	0	0	0	0	0	1
ENE	0	0	0	0	0	1	0	0	0	0	0	1
E	0	0	0	0	1	1	2	2	0	0	0	6
ESE	0	0	0	0	0	1	1	1	0	0	0	3
SE	0	0	0	0	1	4	0	0	0	0	0	5
SSE	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	2	0	0	2
WSW	0	0	0	0	0	0	1	1	3	1	0	6
W	0	0	0	0	0	0	0	0	1	1	1	3
WNW	0	0	0	0	0	0	0	0	7	2	3	12
NW	0	0	0	0	0	0	1	1	1	0	0	3
NNW	0	0	0	0	0	0	0	0	1	0	0	1
Tot	0	0	0	1	2	7	5	5	15	5	4	44

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 44
Hours of Missing Data 79
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-8.0	8.1-10.0	>10.00	
N	0	0	0	0	0	0	0	0	1	1	0	2
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	2	3	0	1	0	0	0	6
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	1	0	0	0	0	1
ESE	0	0	0	1	4	3	3	0	1	0	0	12
SE	0	0	0	0	2	1	2	0	0	0	0	5
SSE	0	0	0	0	0	1	2	1	1	0	0	5
S	0	0	0	0	1	0	0	0	0	0	0	1
SSW	0	0	0	0	0	2	1	2	2	6	0	13
SW	0	0	0	0	1	3	0	3	2	1	0	10
WSW	0	0	0	1	0	1	1	5	6	2	1	17
W	0	0	0	0	1	2	1	0	1	5	5	15
WNW	0	0	0	0	0	1	1	2	7	5	1	17
NW	0	0	0	0	0	1	5	1	6	1	0	14
NNW	0	0	0	0	0	1	5	2	5	0	3	16
Tot	0	0	0	2	11	19	22	17	32	21	10	134

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 134
Hours of Missing Data 79
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	1	2	0	2	0	3	4	10	9	2	33
NNE	0	0	0	0	3	3	0	2	7	1	0	16
NE	0	0	0	0	4	5	10	11	12	1	0	43
ENE	0	0	1	0	5	5	5	0	0	0	0	16
E	0	0	1	0	5	3	16	15	6	0	0	46
ESE	0	0	0	0	4	7	4	5	15	1	0	36
SE	0	0	0	2	5	2	1	9	4	2	0	25
SSE	0	0	0	2	1	3	3	14	31	16	5	75
S	0	0	2	4	5	16	13	17	38	16	25	136
SSW	0	0	0	4	3	5	8	13	40	16	15	104
SW	0	0	1	0	3	4	9	10	19	15	1	62
WSW	0	0	0	2	2	3	4	10	14	13	3	51
W	0	0	0	1	0	12	17	29	48	37	15	159
WNW	0	0	0	2	2	7	9	29	75	26	10	160
NW	0	0	0	2	2	5	12	10	30	7	1	69
NNW	0	0	1	0	1	5	7	23	28	21	7	93
Tot	0	1	8	19	47	85	121	201	377	181	84	1124

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 1124
Hours of Missing Data 79
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	3	1	2	7	3	0	0	16
NNE	0	0	0	0	0	1	1	2	0	0	0	4
NE	0	0	1	0	0	0	3	2	3	0	0	9
ENE	0	0	0	0	2	3	3	0	0	0	0	8
E	0	0	0	1	5	4	4	1	1	0	0	16
ESE	0	1	0	0	1	2	9	8	5	1	0	27
SE	0	0	0	0	3	1	5	13	29	8	0	59
SSE	0	0	0	0	2	6	7	13	13	2	1	44
S	0	0	0	0	1	1	4	7	14	14	6	47
SSW	0	0	0	0	0	1	2	14	43	28	8	96
SW	0	0	0	2	5	1	4	13	26	10	14	75
WSW	0	0	0	0	1	3	14	11	13	3	0	45
W	0	0	0	1	1	4	17	12	12	0	3	50
WNW	0	0	0	0	4	1	4	11	32	10	0	62
NW	0	0	0	0	2	6	4	10	25	4	0	51
NNW	0	0	0	0	0	2	4	6	8	0	0	20
Tot	0	1	1	4	30	37	87	130	227	80	32	629

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 629
Hours of Missing Data 79
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)										Total	
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0		>10.00
N	0	0	0	0	0	1	1	6	1	0	0	9
NNE	0	0	0	0	1	1	3	0	0	0	0	5
NE	0	1	1	0	0	0	1	1	0	0	0	4
ENE	0	0	2	0	1	0	1	0	0	0	0	4
E	0	0	0	0	0	1	0	0	0	0	0	1
ESE	0	0	0	1	1	0	0	0	2	1	0	5
SE	0	0	0	0	2	2	1	0	3	1	0	9
SSE	0	0	0	0	1	0	5	4	7	1	0	18
S	0	0	0	0	3	1	0	0	0	0	0	4
SSW	0	0	0	1	0	0	0	0	0	2	0	3
SW	0	0	0	0	1	2	2	5	15	1	0	26
WSW	0	0	0	1	5	2	2	5	12	0	0	27
W	0	0	1	1	3	4	5	6	3	0	0	23
WNW	0	0	0	0	1	1	2	0	0	0	0	4
NW	0	0	0	0	0	1	3	1	1	0	0	6
NNW	0	0	0	0	0	0	2	6	0	0	0	8
Tot	0	1	4	4	19	16	28	34	44	6	0	156

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 156
Hours of Missing Data 79
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2013 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

METEOROLOGICAL DATA

DOCKET NUMBERS: 50-010/50-237/50-249

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2013 - 2013

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s)											Total
	<0.50	0.5- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0	5.1- 6.0	6.1- 8.0	8.1- 10.0	>10.00	
N	0	0	0	0	0	1	0	0	0	0	0	1
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	2	0	2	1	1	0	0	0	0	6
ENE	0	1	0	0	0	0	0	0	0	0	0	1
E	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	1	0	0	0	0	1
S	0	0	0	0	0	1	0	0	0	0	0	1
SSW	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	2	1	2	5	0	0	10
WSW	0	0	0	0	1	4	1	0	1	0	0	7
W	0	0	0	0	1	1	0	0	0	0	0	2
WNW	0	0	0	0	0	1	1	0	0	0	0	2
NW	0	0	0	0	0	1	0	1	0	0	0	2
NNW	0	0	0	0	0	1	0	0	1	0	0	2
Tot	0	1	2	0	4	13	5	3	7	0	0	35

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 35
Hours of Missing Data 79
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2011 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2011

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2011

GASEOUS EFFLUENTS SUMMATION OF ALL RELEASES

DOCKET NUMBERS: 50-010/50-237/50-249

Units	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Est. Total Error, %
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A. Fission & activation gases

1. Total release	Ci	7.60E+00	7.95E+00	9.37E+00	6.96E+00	1.31E+01
2. Average release rate for period	μCi/sec	9.78E-01	1.01E+00	1.18E+00	8.75E-01	
3. Percent of ODCM dose limit	%γ	7.34E-03	8.06E-03	9.15E-03	6.76E-03	
	%β	1.46E-04	1.60E-04	1.82E-04	1.31E-04	

B. Iodines

1. Total iodine-131	Ci	1.84E-04	2.36E-04	3.08E-04	3.57E-04	2.60E+01
2. Average release rate for period (I-131)	μCi/sec	2.36E-05	3.01E-05	3.88E-05	4.49E-05	
3. Percent of ODCM dose limit *	%	2.71E-01	2.71E-01	2.73E-01	2.95E-01	

C. Particulates

1. Particulates with half-lives > 8 days	Ci	1.75E-04	2.38E-04	5.75E-04	1.13E-03	2.94E+01
2. Average release rate for period	μCi/sec	2.25E-05	3.03E-05	7.23E-05	1.43E-04	
3. Percent of ODCM dose limit *	%	2.71E-01	2.71E-01	2.73E-01	2.95E-01	

D. Tritium

1. Total release	Ci	5.62E+00	7.34E+00	2.76E+00	1.57E+01	7.56E+00
2. Average release rate for period	μCi/sec	7.22E-01	9.34E-01	3.48E-01	1.98E+00	
3. Percent of ODCM dose limit *	%	2.71E-01	2.71E-01	2.73E-01	2.95E-01	

E. Gross Alpha

1. Total release	Ci	<LLD	<LLD	<LLD	<LLD	2.94E+01
2. Average release rate for period	μCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
3. Percent of ODCM dose limit	%	N/A	N/A	N/A	N/A	

F. Carbon-14

1. Total release	Ci	7.56E+00	7.56E+00	7.56E+00	7.56E+00	
2. Average release rate for period	μCi/sec	9.72E-01	9.62E-01	9.51E-01	9.51E-01	

* Percent of ODCM dose limit indicates combined total of Iodines, Particulates, and Tritium

DRESDEN NUCLEAR POWER STATION
2011 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2011

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2011

UNITS 2/3 REACTOR BUILDING VENT

GASEOUS EFFLUENTS

DOCKET NUMBERS: 50-237/50-249

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MIXED-MODE RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	TOTAL
1. Fission and Activation Gases						
Ar-41	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	6.12E-06	6.12E-06
Xe-135m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
2. Iodines						
I-131	Ci	7.76E-06	4.64E-06	<LLD	6.84E-07	1.31E-05
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	7.76E-06	4.64E-06	<LLD	6.84E-07	1.31E-05
3. Particulates						
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	<LLD	<LLD	<LLD	2.33E-06	2.33E-06
Mn-54	Ci	3.25E-06	<LLD	<LLD	1.88E-05	2.21E-05
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	1.89E-05	4.32E-06	9.87E-06	8.40E-05	1.17E-04
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	2.22E-05	4.32E-06	9.87E-06	1.05E-04	1.43E-04
4. Tritium						
Total for period	Ci	5.87E-01	1.61E+00	4.46E-01	1.27E+01	1.53E+01

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DRESDEN NUCLEAR POWER STATION
2011 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2011

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2011

UNITS 2/3 MAIN CHIMNEY

GASEOUS EFFLUENTS

DOCKET NUMBERS: 50-237/50-249

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ELEVATED RELEASES

CONTINUOUS MODE

Nuclides Released	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	TOTAL
1. Fission and Activation Gases						
Ar-41	Ci	7.95e-01	7.19E-01	7.84E-01	9.47E-01	3.25E+00
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	1.53E-01	1.27E-01	1.87E-01	2.25E-01	6.92E-01
Kr-87	Ci	2.21E-01	2.28E-01	2.60E-01	1.52E-01	8.61E-01
Kr-88	Ci	1.75E-01	1.39E-01	1.71E-01	1.35E-01	6.20E-01
Xe-133	Ci	6.43E-01	3.15E-01	4.97E-01	5.92E-01	2.05E+00
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	2.61E-01	1.66E-01	2.07E-01	1.41E-01	7.75E-01
Xe-135m	Ci	1.04E+00	1.24E+00	1.45E+00	9.52E-01	4.68E+00
Xe-138	Ci	4.31E+00	5.02E+00	5.81E+00	3.81E+00	1.90E+01
Total for period	Ci	7.60E+00	7.95E+00	9.37E+00	6.96E+00	3.19E+01
2. Iodines						
I-131	Ci	1.72E-04	2.29E-04	3.08E-04	3.56E-04	1.07E-03
I-133	Ci	5.81E-04	8.89E-04	1.34E-03	1.78E-03	4.59E-03
I-135	Ci	<LLD	<LLD	2.42E-05	2.80E-05	5.22E-05
Total for period	Ci	7.53E-04	1.12E-03	1.67E-03	2.17E-03	5.71E-03
3. Particulates						
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	4.76E-05	5.46E-05	5.37E-05	1.11E-04	2.67E-04
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	1.58E-5	1.95E-05	4.62E-05	1.05E-04	1.87E-04
Co-58	Ci	<LLD	7.03E-07	1.03E-05	3.43E-05	4.53E-05
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	3.02E-05	7.45E-05	2.06E-04	3.78E-04	6.89E-04
Zn-65	Ci	<LLD	3.90E-05	1.08E-04	1.99E-04	3.45E-04
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	2.39E-06	<LLD	2.39E-06
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	1.95E-06	<LLD	1.95E-06
Ba-140	Ci	5.85E-05	4.36E-05	1.35E-04	1.21E-04	3.58E-04
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	1.52E-04	2.32E-04	5.63E-04	9.85E-04	1.93E-03
4. Tritium						
Total for period	Ci	5.03E+00	5.73E+00	2.31E+00	3.04E+00	1.61E+01
5. Gross Alpha						
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
6. Carbon-14						
Total for period	Ci	7.56E+00	7.56E+00	7.56E+00	7.56E+00	3.02E+01

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DRESDEN NUCLEAR POWER STATION
2011 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2011

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2011

CHEMICAL CLEANING BUILDING
XX

GASEOUS EFFLUENTS
MIXED-MODE RELEASES CONTINUOUS MODE

DOCKET NUMBERS: 50-010

Nuclides Released	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	TOTAL
1. Fission and Activation Gases						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-133	Ci					
Xe-133m	Ci					
Xe-135	Ci					
Xe-135m	Ci					
Xe-138	Ci					
Total for period	Ci	None*	None*	None*	None*	None*
2. Iodines						
I-131	Ci	1.93E-06**	1.15E-06**	<LLD	<LLD	3.08E-06**
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	1.93E-06**	1.15E-06**	<LLD	<LLD	3.08E-06**
3. Particulates						
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	5.22E-07	6.37E-07	2.28E-07	1.15E-07	1.50E-06
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	5.22E-07	6.37E-07	2.28E-07	1.15E-07	1.50E-06
4. Tritium						
Total for period	Ci	None*	None*	None*	None*	None*

* Analysis not required per Dresden Station ODCM

** I-131 detected as a result of fallout from Fukushima Daiichi plant emissions

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DRESDEN NUCLEAR POWER STATION
2011 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2011

EFFLUENT AND WASTE DISPOSAL SUMMARY ANNUAL REPORT 2011

RADIOLOGICAL IMPACT ON MAN

DOCKET NUMBERS: 50-010/50-237/50-249

1. Liquid Dose to a Member of the Public for 2011
Total Body: 1.32E-06 mrem Organ: 2.08E-06 mrem
2. Gaseous Dose to a Member of the Public for 2011
Total Body: 2.13E-02 mrem
Skin: 3.80E-03 mrem
Organ (Particulate/Iodine): 9.18E-02 mrem
3. Direct Radiation Dose to a Member of the Public for 2011
Total Body: 8.36E+00 mrem
This is 33.4 % of 40CFR190 Limit of 25 mrem/year (Whole Body and Organ). Thyroid dose is 0.10 % of 40CFR190 Limit (75 mrem).
4. Total Body Doses to the Population and Average Doses to Individuals in the Population from All Receiving-Water-Related-Pathways: Not applicable for DNPS. No downstream drinking water pathway exist within the specified distance of 10 kilometers (6.2miles).
5. Total Body Doses to the Population and Average Doses to Individuals in the Population from Gaseous Effluents to a Distance of 50 Miles: Not applicable for DNPS.
6. Doses From Liquid and Gaseous Effluent to Members of the Public Due to Their Activities Inside the Site Boundary for the Report Period: Not applicable for DNPS. Any member of the public that is onsite for a significant period will be issued a Thermo Luminescent Dosimeter (TLD).
7. Liquid and Gaseous Effluent Radiation Monitors and Instrumentation Unavailability for the Period Beyond the Requirements of the ODCM, Including Sampling Deviation:
No ODCM required monitors were unavailable beyond requirements of the ODCM in 2011.
8. 40CFR190 / 10CFR72 Compliance

The General Electric Hitachi Nuclear Energy Morris Operation (GE-Hitachi Morris Operation) facility is physically located near Dresden Station and, in addition to evolutions performed at Dresden station, is considered in the evaluation of the uranium fuel cycle on members of the public in the general environment for 40CFR190 compliance.

Dresden decommissioning activities (Unit 1) and operations (Units 2 and 3) resulted in a maximum 9.18E-02 mrem organ dose and 8.38E+00 mrem total body dose. Radiological Environmental Monitoring Program (REMP) direct radiation monitoring at or near the site boundary demonstrates that total body dose calculations are conservative.

No effluents were released from the Dresden Independent Spent Fuel Storage Installations (ISFSIs) during 2011. REMP direct radiation monitoring at or near the site boundary demonstrates that the ISFSIs do not result in measurable dose to the public.

Per the 2011 GE-Hitachi Morris Operation 10CFR72.44(d)(3) report, maximum dose at their site boundary from direct radiation exposure was 1.07E+00 mrem and maximum organ dose was 1.35E-02 mrem for 2011.

Maximum total body dose from Dresden and GE-Hitachi Morris Operation activities is 9.45E+00 mrem during 2011, which is 37.8 % of the 40CFR190 limit of 25 mrem.

Maximum organ dose from Dresden and GE-Hitachi Morris Operation activities is 1.05E-01 mrem during 2011. This is 0.42 % of the 40CFR190 limit of 25 mrem to any organ. The thyroid dose is 0.14 % of the 40CFR190 limit of 75 mrem.

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